



**COMPENDIUM OF GUIDELINES,
INSTRUCTION AND STANDARD
OPERATIVE PROCEDURES FOR COVID-19**

Medical Education and Drugs Department
Government of Maharashtra

**FOURTH EDITION
VOLUME 4**

25 June 2020

Medical Education and Drugs Department

COMPENDIUM OF GUIDELINES, INSTRUCTION AND STANDARD OPERATIVE PROCEDURES FOR COVID-19

FOURTH EDITION VOLUME 4

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FOREWORD

As you are aware, COVID – 19 is widely spreading across the country, rising beyond 375000 positive cases in the 21st week. In order to manage and contain the spread of COVID – 19 any further, both Centre and State Government and associated departments have come out with Guidelines to be adopted across the country and in each state.

This book is a compilation of instructions issued by Ministry of Health & Family Welfare, National Centre for Disease Control & Indian Council of Medical Research of the Government of India and instructions issued by Public Health Department and Medical Education and Drugs Department of Government of Maharashtra. All the information provided in this Compendium is available in publicly available sources.

We hope that this compilation helps Practitioners, Administrators and all people involved in management of COVID – 19 cases.

This compilation is updated with the relevant information issued till 25th June, 2020. The Editorial Board shall be updating this on a regular basis.

We thank you all.

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Revised Discharge Policy for COVID-19

The revised discharge policy is aligned with the guidelines on the 3 tier COVID facilities and the categorization of the patients based on clinical severity (Available at:

<https://www.mohfw.gov.in/pdf/FinalGuidanceonMangaementofCovidcasesversion2.pdf>)

1. Mild/very mild/pre-symptomatic cases

Mild/very mild/pre-symptomatic cases admitted to a COVID Care Facility will undergo regular temperature and pulse oximetry monitoring. The patient can be discharged after 10 days of symptom onset and no fever for 3 days. There will be no need for testing prior to discharge.

At the time of discharge, the patient will be advised to follow the home isolation for further 7 days as per guidelines available at

<https://www.mohfw.gov.in/pdf/GuidelinesforHomeIsolationofverymildpresymptomaticCOVID19cases.pdf>).

At any point of time, prior to discharge from CCC, if the oxygen saturation dips below 95%, patient is moved to Dedicated COVID Health Centre (DCHC).

After discharge from the facility, if he/she again develops symptoms of fever, cough or breathing difficulty he will contact the COVID Care Centre or State helpline or 1075. His/her health will again be followed up through tele-conference on 14th day.

2. Moderate cases admitted to Dedicated COVID Health Centre (Oxygen beds)

2.1. Patients whose symptoms resolve within 3 days and maintains saturation above 95% for the next 4 days

Cases clinically classified as “moderate cases” will undergo monitoring of body temperature and oxygen saturation. If the fever resolve within 3 days and the patient maintains saturation above 95% for the next 4 days (without oxygen support), such patient will be discharged after 10 days of symptom onset in case of:

- Absence of fever without antipyretics
- Resolution of breathlessness
- No oxygen requirement

There will be no need for testing prior to discharge.

At the time of discharge, the patient will be advised to follow the home isolation for 7 days as per guidelines available at

<https://www.mohfw.gov.in/pdf/GuidelinesforHomeIsolationofverymildpresymptomaticCOVID19cases.pdf>).

2.2. Patient on Oxygenation whose fever does not resolve within 3 days and demand of oxygen therapy continues

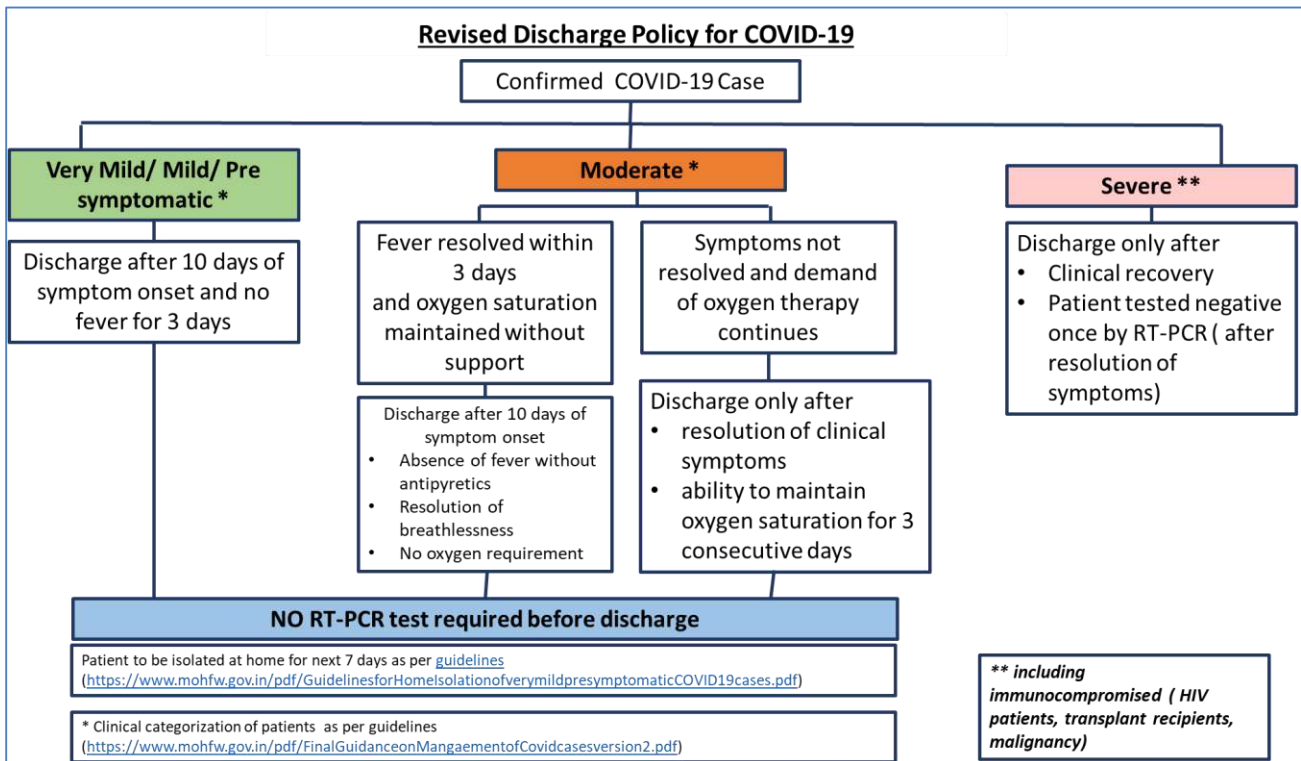
Such patients will be discharged only after

- resolution of clinical symptoms
- ability to maintain oxygen saturation for 3 consecutive days

3. Severe Cases including immunocompromised (HIV patients, transplant recipients, malignancy)

Discharge criteria for severe cases will be based on

- Clinical recovery
- Patient tested negative once by RT-PCR (after resolution of symptoms)



Frequently Asked Questions (FAQs) on Revised Discharge Policy, dated 8th May, 2020

A revised discharge policy for COVID-19 cases was issued by MoHFW on 8th May, 2020. (Available at: <https://www.mohfw.gov.in/pdf/ReviseddischargePolicyforCOVID19.pdf>). The policy was prepared in consultation with ICMR and is in line with the MoHFW's guidelines on the categorization of the patients based on clinical severity and their management in the 3 tier COVID facilities (Available at: <https://www.mohfw.gov.in/pdf/FinalGuidanceonMangaementofCovidcasesversion2.pdf>).

FAQs

1. What was earlier criteria for discharging COVID-19 patients

The earlier criteria for discharging rt-PCR positive were (a) chest radiograph has cleared and (b) two consecutive negative test results on rt-PCR.

2. What is the new discharge policy for COVID-19 patients?

For mild/very mild/pre-symptomatic cases

- Patient can be discharged after 10 days of symptom onset and no fever for 3 days
- No need for testing prior to discharge
- Patient will be advised to follow home isolation for a further 7 days after discharge

For moderate cases

- Patient can be discharged (a) if asymptomatic for 3 days and (b) after 10 days of symptom onset
- No need for testing prior to discharge
- Patient will be advised to follow home isolation for a further 7 days after discharge

For severe cases

- Clinical recovery
- Patient tested negative once by RT-PCR (after resolution of symptoms)

3. Why was the discharge policy changed?

Several countries have changed the criteria for discharge from 'test based strategy to 'symptom based strategy' or 'time based 'strategy. A review of ICMR laboratory surveillance data also indicated that after initial rt-PCR positive results, patients became negative after a median duration of 10 days. Recent studies have also suggested that the viral load peaks in the pre-symptomatic period (2 days before symptoms) and goes down over the next 7 days.

4. How then it will be established that a patient is cured of the disease?

Being cured of a disease may have different connotations for general public, treating doctors and the virologists. Unless there is a fear of resurgence of infection and subsequent transmissibility of an infection, resolution of clinical manifestation is usually taken as an evidence for cure.

5. Is there a risk of transmission from patients discharged based on the revised criteria?

Available evidence does not indicate any increase in the risk of transmission from patients discharged based on the revised discharge criteria. The revised criterion also specifies that such patients will follow home isolation for a further 7 days.

6. What precautions the patient should undertake during home isolation?

It has to be remembered that provision for home isolation of pre-symptomatic/very mild/mild confirmed cases of COVID-19 has been made, provided that such patients are assessed to be eligible for the same in terms of their clinical status and feasibility to successfully isolate in home environment settings. This should be done after signing a self-declaration form by the patient.

Such patients (with no co-morbidities) should at all times use triple layer medical mask. Patient must stay in the identified room and away from other people in home, especially elderlies and those with co-morbid conditions like hypertension, cardiovascular disease, renal disease etc. They should maintain strict personal hygiene and self-monitor his/her health with daily temperature monitoring and report promptly if develops any deterioration of symptom.

Detailed eligibility criteria and advisory for such patients is available at <https://www.mohfw.gov.in/pdf/RevisedguidelinesforHomeIsolationofverymildpresymptomaticCOVID19cases10May2020.pdf>

7. Is there a need to get tested after the home isolation period is over?

No. As per the latest revised discharge policy, there is no need for testing prior to discharge all pre-symptomatic/very mild/mild confirmed cases of COVID-19 after 10 days of symptom onset and no fever for 3 days. Therefore it stands to reason, that no testing is also needed for patients undergoing home isolation (pre-symptomatic/very mild/mild confirmed cases) after the home isolation period is over.

8. What does the current discharge policy mean for patients who are being home isolated?

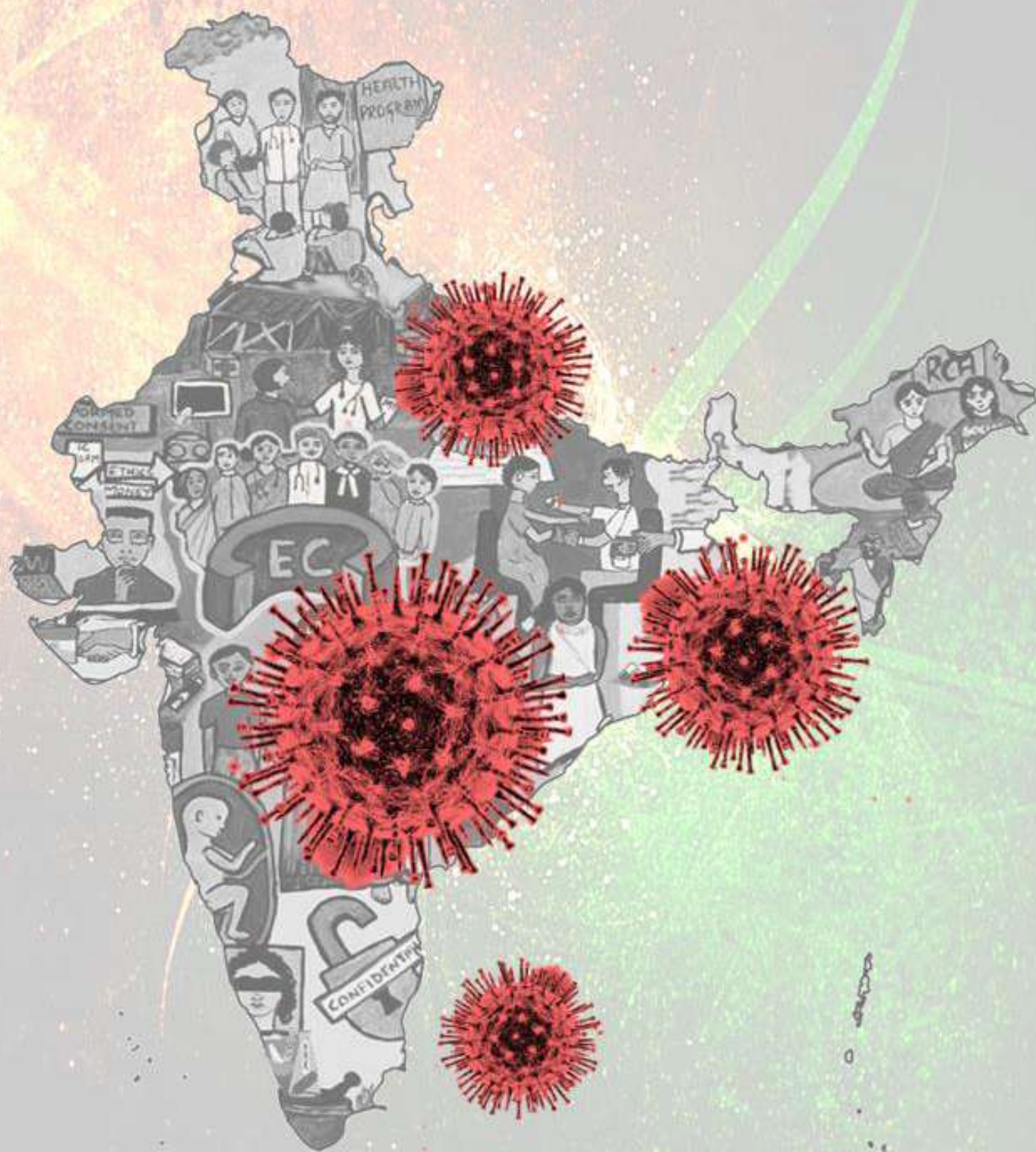
As detailed above, as far as testing is concerned, there is no need for testing after the home isolation period is over. However, (as the current discharge policy advises patients to remain in home isolation for a 7 days period after discharge), the period of home isolation would end after 17 (10+7) days of symptom onset and no fever for 10 (3+7) days. The Home Isolation Guidelines as at <https://www.mohfw.gov.in/pdf/RevisedguidelinesforHomeIsolationofverymildpresymptomaticCOVID19cases10May2020.pdf> should be strictly followed.

9. Does this policy apply to those undergoing home or facility quarantine?

Discharge policy is meant for patients (symptomatic/pre-symptomatic) diagnosed (using rt-PCR testing) to be suffering from COVID-19. Quarantine (home or facility) is meant for asymptomatic/healthy persons who may have been exposed to the COVID-19 infection but are not manifesting any symptoms. Therefore there is no question of discharge of such persons. However their stay under quarantine period will remain 14 days from the date of last exposure. The MHA Guidelines dated 5th May, 2020 as available at <https://www.mha.gov.in/sites/default/files/MHA%20SOPs%20Dt.%205.5.2020%20reg%20movement%2>

[0of%20Indian%20nationals%20stranded%20outside%20the%20country%20and%20of%20specified%20persons%20to%20travel%20abroad.pdf](#) should be followed.

**NATIONAL GUIDELINES FOR ETHICS COMMITTEES
REVIEWING BIOMEDICAL & HEALTH RESEARCH
DURING COVID-19 PANDEMIC**



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Published by:

ICMR - National Centre for Disease Informatics & Research, Bengaluru

for Director General, Indian Council of Medical Research, New Delhi

April 2020

Indian Council of Medical Research

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सत्यमेव जयते

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स्वास्थ्य एवं परिवार कल्याण मंत्रालय एवं
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Foreword

A humanitarian emergency such as COVID-19 global pandemic has represented a critical threat to the health, safety, security and well-being of any community or large group of people across the globe. Research is necessary in such circumstances to enable provision of efficient and appropriate health and humanitarian response for reducing morbidity and mortality. In the present situation of lockdown, the health system, communications, research infrastructure, and research governance frameworks are adversely affected and have created challenges for the review, conduct and monitoring of research to safeguard the safety, rights and well-being of research participants.

On one hand, there is a need to undertake research quickly on priority basis, and on the other to ensure that this does not compromise scientific validity and ethical requirements. Close attention on perceptions of ethical questions, altered or increased vulnerabilities, health care provider-patient and researcher-participant relationships, issues related to integrity of studies and ethical review processes is needed. The complex issues that are raised need to be effectively and efficiently tackled.

This is the appropriate time to respond to humanitarian emergencies by adopting novel methodologies, designing innovative methods, appropriate use of digital platforms and new technology, effective management of limitations of time, infrastructure, resources and enable quick communication.

I am happy that ICMR Bioethics Unit, NCDIR, Bengaluru has developed this document under the guidance of Covid 19 National Ethics Committee (CoNEC) highlighting the important and facilitatory role that ethics committees will have to play in supporting the ethical conduct of research in India. They need to respond and adapt to the changing environment and to guide quality research outcomes in a time bound manner. I am sure all stakeholders in research such as researchers, sponsors, regulators etc will also find this document very useful in addition to Ethics committees.

Balram Bhargava

(Balram Bhargava)

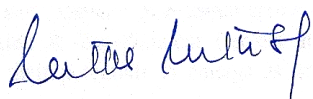
Preface

Indian Council of Medical Research has always been on the forefront to develop ethical guidance for biomedical and health research in the country since 1980 and responded to ethical changes with the emerging times and ICMR National Ethical Guidelines is widely respected and recognised. In the ongoing COVID-19 pandemic situation, research has to take the front stage in order to tackle the novel challenges that have come to the fore in an unprecedented manner. There is need for extensive research to explore therapeutic options, deal with clinical challenges related to patient management and care, undertake epidemiological studies, fast track development of new diagnostic tools, identifying and tackling challenges impacting socio behavioural well-being, ways of reducing stigmatisation, need for quick research without compromising scientific integrity, sharing the samples, data transfer etc while protecting the rights, safety and well-being of research participants. The need for social distancing and nationwide lockdown has led to people from all strata of society being left in a vulnerable situation whether they are affected population, patients, family members, care givers or health care workers. Many have been forced to remain for long periods in isolation or quarantine, restricting their freedom of movement, psycho-social responses and autonomous decision making.

Section 12 on “Research during humanitarian emergencies and disasters” and several other sections of ICMR National Ethical Guidelines for Biomedical and Health Research Involving Human Participants, 2017 directly provide ethical guidance to conduct research in humanitarian emergencies. The relevant portions are being extracted and put together with additional new guidance points relevant to the COVID-19 situation in this document to facilitate easy understanding. The structure of the document is kept similar to the original guidelines for easy reference. Readers are encouraged to go through the full guidelines for details.

The role of ECs is very important in reviewing protocols prepared for such emergency situation(s). Responsiveness to the situation include, use of expedited or fast track processes but ensuring robust ethics review, as well as for monitoring conduct of research. During this pandemic and restricted environment of research, even non-COVID health research needs to be ongoing. There are provisions in the guidelines to facilitate them. It is expected that this guideline will be useful not only for ethics committees but for all stakeholders in research including researchers, sponsors and even public at large to inform them about the ethical conduct and review of research for ensuring participant safety and right at all time.

We are grateful to Prof. Balram Bhargava Secretary, DHR & DG, ICMR for his constant support and guidance. We thank the experts for reviewing the document and providing valuable inputs, viz., Dr NK Arora, Dr BT Kaul, Dr Bikash Medhi, Dr Shuba Kumar and Rv Dr Christopher Vimalraj. We deeply acknowledge the support extended by Dr Prashant Mathur, Director NCDIR, Bengaluru for fast track creation of this document. We also thank Dr Kalyani Thakur and Dr Deepika Rathna, staff of ICMR Bioethics Unit, NCDIR, Bengaluru for their assistance in developing this document.



Dr Vasantha Muthuswamy
Chairperson



Dr Roli Mathur
Member Secretary

1. Statement of General Principles

1.1 The four basic principles namely; **respect for persons (autonomy), beneficence, non-maleficence and justice** must guide research in order to protect the dignity, rights, safety and well-being of research participants while conducting Biomedical and Health Research.

1.2 These basic principles have been further expanded into 12 general principles:

i. Principle of Essentiality	ii. Principle of Professional Competence
iii. Principle of Voluntariness	iv. Principle of Maximization of Benefit
v. Principle of Non-exploitation	vi. Principle of Institutional Arrangements
vii. Principle of Social Responsibility	viii. Principle of Transparency & Accountability
ix. Principle of Ensuring Privacy & Confidentiality	x. Principle of Totality of Responsibility
xi. Principle of Risk Minimization	xii. Principle of Environmental Protection

2. General Ethical Issues

2.1 **Benefit-risk assessment:** The EC must decide about the type of review required (exempted, expedited, full committee) based on the type of risk involved.

Table 1: Types of risk

Type of risk	Definition/description
Less than minimal	Probability of harm or discomfort is nil or not expected.
Minimal risk	Probability of harm or discomfort anticipated in the research is not greater than encountered in routine life activities/ serious harm or adverse event is unlikely
Minor increase over minimal risk or Low risk	Increment in probability of harm or discomfort is only a little more than the minimal risk threshold. Such research should have a social value. Social risks, psychological harm and discomfort may also fall in this category.
More than Minimal/high risk	Probability of harm or discomfort anticipated in the research is invasive and greater than minimal risk or interventional study.

2.2 **Privacy Confidentiality:** Information related to COVID-19 infection may be highly sensitive in nature with a lot of scope for stigmatization, discrimination, violence etc. Maintaining confidentiality of research related data and its publication is important to protect the privacy of individuals and avoid any discrimination against them.

2.3 **Distributive Justice:** Individuals or communities invited for research should be selected in such a way that the benefits and burdens of research are equitably distributed without leading to social, racial or ethnic inequalities.

2.4 **Payment for participation:** Participants should not be made to pay for any expenses incurred beyond routine clinical care and wherever possible may be given a reasonable amount to cover incidental expenses.

2.5 **Compensation for research-related harm:**

2.5.1 Research participants who suffer direct physical, psychological, social, legal or economic harm as a result of participating in the research are entitled to free health care and referrals as needed. However, for research related Serious Adverse Events (SAE), appropriate financial compensation and insurance coverage be provided as per norms.

2.5.2 Sponsor to include insurance coverage/other provision within budget. In investigator initiated research, investigator/institution must provide through insurance, corpus funds or grants.

2.5.3 SAEs should be reported to EC (including on non-working days) within 24 hours and a report on SAE relatedness (causality assessment) within 14 days for EC review regarding quantum and type of assistance.

2.6 Conflict of interest:

2.6.1 Implement procedures to declare and management conflict of interest (financial/non-financial) of researchers, EC members, institution, sponsor.

2.7 Community Engagement:

2.7.1 Engaging with the community in a culturally sensitive manner can improve public trust, help improve design, conduct and responsiveness to health needs.

2.7.2 Various measures to educate the public or communities about pandemic (COVID-19 infection), proposed research, risks and benefits, persons to be contacted etc. should be undertaken.

2.7.3 Efforts must also be made to prevent the infodemic or spread of fake information, or to sensationalize, make false promises or claims, or spread negativity or create a scare.

2.8.2 Wherever possible, community representatives (e.g., Community advisory board) be involved in conceptualization, review, research, dissemination of results in such settings.

2.8 Post research access and benefit sharing:

2.8.1 Efforts be made to communicate the research findings to the individuals/communities.

2.8.2 EC should consider the need for an a priori agreement between researchers and sponsors regarding post-research access of the community to successful interventions and benefit sharing if relevant.

2.9 Storage of Biological Material/ datasets:

2.9.1 In COVID-19, samples may be in the form of expectorated sputum, endotracheal aspirate, or Broncho alveolar lavage (BAL) etc. besides other body fluids, such as blood, plasma, dried blood spots, body fluids, urine, stool, tissues, organs - stored or prospectively collected. Storage of infectious samples requires adequate safeguards.

2.9.2 A dataset is an organized collection of data and information maintained in physical and/or electronic/digital form ranging from small numbers to large numbers or whole population.

2.9.3 Samples/ datasets may be classified as anonymous (unidentified), anonymized or identifiable.

2.9.4 It may be useful to have repository of samples/ registry which can be further used to generate forecasts of trends and identify hotspots.

2.9.5 Provide clarity on custodianship, obtain approval of the EC/ governance committee, appropriate written consent, maintain individual confidentiality and privacy.

2.10 Collaboration in research:

2.8.1 Existing guidelines on collaboration for sharing biological samples, data and intellectual property including publication related issues will be applicable. Collaborations to address possible inequity of expertise, access between partnering institutions /funding relationships.

2.8.2 Rapid data sharing while safeguarding the above is critical during public health emergency.

2.8.3 An appropriate MoU and/or MTA to safeguard the interests of participants and ensure compliance (addressing issues of confidentiality, sharing of data, joint publications, etc).

2.8.4 Biomedical and health research proposals involving foreign assistance and/or collaboration be submitted to Health Ministry's Screening Committee (HMSC) for approval before initiation.

2.11 Public health and socio behavioral research:

- 2.9.1 Health system preparedness is critical to control spread of COVID-19 and focused research and public health interventions are needed to prevent, delay, or contain the spread.
- 2.9.2 Isolation, quarantine, segregation from families during the COVID-19 disaster has given a new dimension to risk to individual dignity, psychological/ emotional harm, social harm, informational risk.
- 2.9.3 Emergency circumstances have rendered participants vulnerable to be coerced to participate. They may not have access to formal or informal support during these times e.g. families, counselling centers, rehabilitation centers, police protection, etc.
- 2.9.4 The social distancing norms may not facilitate conventional methods of data collection and alternative study designs may be required such as online or remote methods to conduct interviews, focus groups, surveys or questionnaires. Social media research using data in public domain may still be evaluated for potential privacy threats.
- 2.9.5 Stakeholders are to consider the fact that technological requirements of the study design may exclude participants without access to the technology.
- 2.9.6 For obtaining quality data, verification of identity of research participant is required. However, exchanging confidential information electronically is prone to security threats. The privacy and security features of the virtual tool used must be assessed to a reasonable extent.
- 2.9.7 Collection of identifying information, GPS location, IP address tracking, etc. should be reviewed by EC on case-case basis.

2.12 Role of Agencies/ Sponsors & Governance of Research:

- 2.12.1 Humanitarian emergencies lead to fragile political environments, disruption of health systems, challenging social situations, resource constraints for fast track conduct of research.
- 2.12.2 Need to ensure appropriate safety, funds, care and compensation, including insurance coverage as well as training at individual, societal and/or community levels for patients, health care workers and others engaged in COVID-19 research.
- 2.12.3 Setting up community consultations and preparation of public educational material.
- 2.12.4 Support for extensive expert group consultations, review of existing national and international experience, adequacy of data from preclinical or previous clinical evidence, public private involvement, ensuring best minds get together to guide research in spite of limited scientific evidence, ensure robust research protocols and outcomes.
- 2.12.5 Central regulatory authority to undertake expeditious review process for clinical trials for new drugs/ compassionate use and ensure safety/efficacy monitoring processes.
- 2.12.6 In case of an outbreak of infectious diseases, monitored emergency use of unregistered and experimental interventions (MEURI) may be approved with the following precautions:
 - Thorough scientific review followed by an ethics review / locally or by national level EC
 - Tackle public concerns and ensure oversight by a local EC.
 - Use GMP products, make rescue medicines/supportive treatment accessible.
 - Meticulous documentation of therapeutic processes including adverse events
 - Fast track research and possible sharing of data on safety and efficacy for further research
 - Consent process is important and must be carried out with care.
 - Community engagement and ensuring fair distribution of scarce supply
- 2.12.7 Facilitate post-trial access of the successful investigational drug/ vaccine free of cost to the trial participants till the same is available in the market.
- 2.12.8 Media must also play a responsible role in facilitating dissemination of useful information and not creating panic through spread of unauthenticated information.

2.13 Biosafety in laboratories and hospitals:

- 2.13.1 There are four biosafety levels from BSL-1 to BSL-4 with specific controls for containment of microbes and biological agents. Virus isolation in cell culture and initial characterization of infectious viral particles recovered in cultures of SARS-CoV-2 specimens should only be conducted in a Biosafety Level 3 (BSL-3) laboratory or BSL-4 laboratories which offer highest safety environments.
- 2.13.2 The lab must ensure proper labelling and handling of specimens (suspected or confirmed for COVID-19) and relevant biosafety precautions and relevant regulatory standards to protect individuals and the environment/ testing in National Accreditation Board for Testing & Calibration Laboratories (NABL) certified labs. Regulatory requirements for biosafety labs should be strictly followed as prescribed by Department of Biotechnology (DBT) and Min. of Environment and Forests, Govt. of India.
- 2.13.3 Personnel must be trained about additional precautions, decontamination with appropriate disinfectants, hand hygiene, use of personal protective equipment (PPE), or other physical barriers, biomedical waste handling to reduce the risk of exposure.
- 2.13.4 Every effort should be made to limit contact with patients at triage, cohort of patients with COVID-19, limit the numbers of staff providing care.
- 2.13.5 Ensure that active screening of all staff at the hospitals is done daily and implement cleaning and disinfection protocol.
- 2.13.6 Telemedicine can be used for research when possible. Patient consent is necessary for any telemedicine consultation for research.

3. Ethical Review Procedures

3.1 Categories of Research:

- 3.1.1 There are 3 categories of research during COVID that may require ethics review.
 - New research directly related to COVID-19
 - Ongoing non-COVID research
 - New non-COVID research
- 3.1.2 EC must prioritize research review based on urgency and take needful steps to facilitate the review of new research and conduct ongoing research with needful amendments as per need in the view of social distancing norms.

3.2 Ethics Committee (EC):

- 3.2.1 EC to ensure a thorough scientific and ethical review of research as per national guidelines and regulations to safeguard the dignity, rights, safety and well-being of research participants.
- 3.2.2 EC to be registered with appropriate agencies – DHR for biomedical and health research and CDSCO for regulatory clinical trials as per New Drug and Clinical Trial Rules, 2019.
- 3.2.3 EC to ensure that all COVID-19 related research (all clinical trials as well as biomedical and health research) be registered on Clinical Trial Registry of India (CTRI) and seek approvals as per relevant guidelines and applicable regulations.
- 3.2.4 Member Secretary to categorise proposals into exempt/expedited/ or full review category as per National Ethical Guidelines and plan next steps for fast track review.
- 3.2.5 Research during emergencies can be reviewed through expedited review/unscheduled full committee meetings on a case-to-case basis depending on the urgency and need. If an expedited review is done, full ethical review can follow whenever next possible.
- 3.2.6 Quorum for decision-making should have a minimum of five members, including both medical/non-medical or technical/non-technical members with one non-affiliated member.

- 3.2.7 Measures such as virtual or tele/web conferences should be attempted and face-to-face meetings can be avoided to observe social distancing norms.
- 3.2.8 In exceptional and emergency situations, preliminary research procedures including but not restricted to data/ biological sample collection that are likely to rapidly deteriorate or perish may be allowed while the ethics review process is still underway.
- 3.2.9 Available protocol templates could be reviewed to expedite the process and interim review/ re-review can be done if the emergency situation changes.
- 3.2.10 In situations where members of local ECs are unavailable, the review may be conducted by any other EC within India for initiating the study, until the local EC is able to convene its meeting.
- 3.2.11 ECs should develop procedures to ensure timely review and monitoring of the approved research. On a case-by-case basis, may require re-review with time and circumstances.

Table 2: Ethical issues related to reviewing a protocol

Social values	Scientific design and conduct of study	Review of informed consent process
Benefit–risk assessment	Selection and recruitment of participants	Qualification & adequacy of study sites
Payment for participation	Disclosure of conflict of interest	Plans for medical management and compensation for study related injury
Community considerations	Protection of privacy and confidentiality	

3.3 Special Situations:

- 3.3.1 Institutions can have multiple ECs as per need or may utilize services of another institution with mutual agreement and agree to be overseen by it.
- 3.3.2 Registered Independent ECs (Ind EC) can review protocols of researchers who have no institutional attachments or of institutions without their own ethics committees.
- 3.3.3 Institutions could have subcommittees such as SAE subcommittee or expedited review committee which report to the main EC. These comprise Chairperson/ Member Secretary and one to two designated members of the main EC as defined in the SOPs.

3.4 Ethics Review:

- 3.4.1 Researchers should submit research proposals in the ICMR Common Forms for Ethics Review as soft or hard copies enclosing required documents.
(http://ethics.ncdirindia.org/Common_forms_for_Ethics_Committee.aspx)
- 3.4.2 The EC should adopt/ include an SOP for Emergency Research review.
- 3.4.3 Submission of e-copy of research protocol and relevant documents followed by their screening by Secretariat for completeness and categorization as exempt/ expedited review/ emergency full committee review depending on the urgency and need.
- 3.4.4 Electronic documents may be accepted for review and timelines shortened for accelerated procedures.
- 3.4.5 Virtual or Tele/Video conferences should be attempted to ensure social distancing as face-to face meetings may not be suitable. Use suitable virtual software platform, preferably a video conference to enable face to face discussion or teleconference if connectivity is an issue.
- 3.4.6 Agenda of virtual meetings should be kept short, however, EC may meet more frequently for fast track review within in 24-48 hrs.
- 3.4.7 The EC may plan a prior review by subject experts/obtain clarifications from researchers before the meeting or/ invite independent consultants (non-voting) or representative from a

specific patient group as special invitee. The special invitees invited for the web-meeting may be asked to leave the meeting before final decision making.

- 3.4.8 During the review process, the Ethics Committees should consider the following:
- If written consent is not possible (e.g., physical isolation/severe COVID-19 patients), consent could be given orally/ use electronic methods to document and record.
 - Due to inability of the participant to attend the site (for e.g., social distancing), the contact/communication can be made via phone, to enquire and identify adverse events, serious adverse events and ensure medical care and oversight with documentation.
 - In an ongoing study, if the designated principal investigator (PI) is indisposed for a period, she/he may need delegate parts of her/his duties temporarily to others/ co-investigator and the same should be documented and reported to EC at the earliest.
- 3.4.9 Withholding information in Public Health emergencies may be a threat to national security, and therefore the right balance must be maintained to protect individual privacy and confidentiality, and relevant disclosure to public health authorities.
- 3.4.10 Suggest steps to protect participants of researchers from possible stigma or discrimination.
- 3.4.11 EC members present during the virtual meeting should decide through consensus or cast online vote expressing their decision. Any disagreement to be recorded with reasons.
- 3.4.12 Meeting could be digitally recorded (audio/video) with permission of members and secretariat is responsible to note the attendance/ participation in the online meeting.

3.5 Review of Multicentre Research:

- 3.5.1 Common review of multicentre research in India can be carried out by one main designated EC for fast track decision making.
- 3.5.2 The local ECs are free to accept the decision of designated committee or to do an expedited or full committee review expeditiously. They must ensure ethics review of local site specific issues or concerns, informed consent translations, local study implementation and monitoring.
- 3.5.3 Common review is generally carried out for research involving low or minimal risk, survey or multicentric studies using anonymized samples or data or those that are public health research studies determined to have low or minimal risk.
- 3.5.4 However, in an emergency situation like the current one, for all types of research including high risk studies or those involving vulnerable population can be taken up for fast track common review while ensuring strict monitoring and oversight by registered local ethics committees.

3.6 Continuing Review & Monitoring:

- 3.6.1 The EC should continually evaluate progress of ongoing proposals, monitor approved study site for compliance, review SAE reports, protocol deviations/violations/ non-compliance/ DSMB reports/ any new information/assess final reports.
- 3.6.2 For protocol deviations/violations the EC should examine the corrective actions. If the violations are serious the EC may halt the study.
- 3.6.3 Compensation must be given for research-related injuries if applicable, as determined by the EC and as per regulatory requirement (if applicable).

3.7 Decisions Regarding Ongoing Studies:

- 3.7.1 The impact of COVID-19 on ongoing and existing studies, ongoing recruitment and continued involvement of participants needs to be considered.

- 3.7.2 Secretariat in consultation with Chairperson, must carefully evaluate need for other non COVID-19 research studies that are ongoing/ near term/ have direct benefit(s) and if stopped, may pose risk to participants. These may be continued/suggest mechanisms for continuation.
- 3.7.3 Following measures can be taken in consideration such as, extension of study duration; temporary halt of study at some/all sites; Suspension/ Postponement of study or activation of sites that have not yet been initiated without compromising safety and well-being of patients; Continuation of study with limited parameters; conversion of physical visits into phone or video visits, postponement or complete cancellation of visits to ensure that only strictly necessary visits are performed at sites; ongoing study may need to take re-consent of already enrolled participants to implement urgent changes; it can be done via phone or video-calls and obtaining oral consents supplemented with email confirmation.
- 3.7.4 Further, travel restrictions, confinement of study participants and staff to perform visits should be taken into account.

3.8 Review of new non-COVID Research:

- 3.8.1 If priority for ethics review in a defined timeframe is given to COVID-19 related research, non-COVID research must not suffer due to ‘*covidisation*’. Studies evaluating treatments for chronic conditions or other communicable diseases or injuries or others may also be considered for review by EC as these may also be important.
- 3.8.2 EC should review and assess if a planned study may have a negative impact on participants’ safety or increase risk to participants (as a result of the ongoing COVID-19 pandemic), and make a decision to allow or not allow it so. It may also make relevant suggestions for additional safeguards for conducting research in such emergency.
- 3.8.3 The review of these studies may be done through virtual EC meeting ensuring appropriate scientific and ethical review and fulfilling the quorum requirements.

4. Informed Consent

4.1 Informed Consent Process:

- 4.1.1 Obtaining valid informed consent in humanitarian emergencies such as COVID-19 is a challenge due to practical difficulties in reaching out to a patient, who may be in a COVID ward, isolation or quarantine facility. In addition, the decisional capacity of the hospitalised patient with moderate or critical disease condition would be very low and it may not be possible to differentiate between reliefs offered and research components.
- 4.1.2 Informed consent is a continuous process involving three main components – providing relevant information, ensuring competence, ensuring comprehension and voluntariness.

Table 3: Elements of an ICD

Elements of an ICD	Additional elements (optional)
1. Statement mentioning that it is research	1. Alternative procedures or treatment
2. Purpose of research and methods	2. Insurance coverage
3. Duration, frequency, methods	3. Possible stigmatizing condition
4. Benefits to participant, community or others	4. Biological material and data, including
5. Foreseeable risks, discomfort or inconvenience	i. Current and future uses
6. Confidentiality of records	ii. Period of storage, secondary use, sharing
7. Payment/reimbursement for participation	iii. Right to prevent use of biological sample
8. Treatment and/or compensation for injury	iv. Provisions to safeguard confidentiality
9. Freedom to participate/withdraw	v. Post-research plan/benefit sharing
10. Identity of research team and contact persons	vi. Publication plan/photographs/pedigrees

- 4.1.3 Needful procedure be followed as discussed in National ethical guidelines for involving children (assent) or legally authorized representative (LAR) in case a participant is incompetent (medically or legally), illiterate participant/LAR should be witnessed by an impartial literate witness.
- 4.1.4 Broad consent with an individual informed opt-out option may be used for research on residual clinical samples.
- 4.1.5 The Informed Consent Document (ICD) has two parts – patient/participant information sheet (PIS) and the informed consent form (ICF) and can be prepared preferably utilizing electronic formats or plan methods to obtain consent maintaining adequate social distancing.

4.2 Electronic Consent:

- 4.2.1 In light of COVID-19 infection control measures, the alternative procedures to avoid direct interaction with the patient in isolation must be explored.
- 4.2.2 Technology should be utilized to prepare interactive formats and using electronic tools such as text, graphics, audio, video, podcasts, interactive website, platforms to explain information related to a study and to electronically document informed assent/consent the same.
- 4.2.3 Electronic methods (e.g. digital signature) must be reviewed and approved by the EC a priori.
- 4.2.4 Process can be documented through audio or video recording (if required).

4.3 Waiver of Consent:

- 4.3.1 For seeking waiver of consent, the researchers should give the rationale justifying the waiver which EC can approve a waiver after careful discussion in the following situations:
 - research cannot practically be carried out without the waiver and the waiver is scientifically justified like, cluster randomization trials.
 - retrospective studies, where the participants are de-identified or cannot be contacted
 - research on anonymized biological samples/data
 - certain types of public health studies/surveillance programs/program evaluation studies
 - research on data available in the public domain; or
 - research during humanitarian emergencies and disasters, when the participant may not be in a position to give consent.
 - When consent of the participant/LAR/assent is not possible due to the emergency situation, informed consent can be administered at a later stage, when the situation allows for it, and if it is so envisaged, prior permission must be obtained from the EC.

5. Vulnerability

- 5.1 **Vulnerable Persons** are individuals/ belonging to certain groups of persons who are relatively or absolutely incapable of protecting their own interests such as:
 - 5.1.1 COVID-19 patients may be additionally vulnerable of being stigmatized due to the contagious nature of the disease. Also at risk are health care workers in COVID-19 hospitals including doctors, nurses, ward staff, sanitation workers, security personnel, food suppliers, or others.
 - 5.1.2 Socially, economically or politically disadvantaged individuals such as the stranded migrant workers who are susceptible to being exploited;
 - 5.1.3 Incapable of making a voluntary informed decision or whose autonomy is compromised temporarily or permanently;
 - 5.1.4 Able to give consent, but voluntariness/understanding compromised due to their situation;

- 5.1.5 Unduly influenced either by the expectation of benefits or fear of retaliation in case of refusal to participate which may lead them to give consent
 - 5.1.6 Terminally ill patients ready to consent in search of new interventions.
- 5.2 Additional Safeguards:** Participants may be under duress and traumatized, therefore, additional safeguards are required for participants and it should be ensured that,
- 5.2.1 Research to address the needs of participants and justify inclusion of vulnerable persons.
 - 5.2.2 Benefits and risks carefully determined and the risk minimization strategies are examined.
 - 5.2.3 There is no coercion, force, undue influence, threat or misrepresentation or incentives.
 - 5.2.4 Informed consent process is conducted in a respectful manner.
 - 5.2.5 Efforts to set up support systems to deal with associated medical and social problems.
 - 5.2.6 Protection of their privacy, confidentiality and rights is required at all times.
 - 5.2.7 Whenever possible, ancillary care may be provided.
- 5.3 Safety of Health Care Workers (HCW) involved in research:**
- 5.3.1 In wake of the pandemic, safety of researchers must get due attention as transmission of infection to one member in a lab or clinical setting could jeopardize the entire program.
 - 5.3.2 Ensuring safety is the responsibility of the institution, sponsors and local authorities, since research team may be subjected to disturbing instances (trauma, humiliation and threats of violence) while conducting research.
 - 5.3.3 Additional precautions such as; Prioritize research and schedules to prevent overcrowding, adequate training, appropriate biosafety precautions, expose minimum number of researchers, communication using electronic platforms, due protection gear/PPE and facilities to undertake research, safety against any assault from public or others, insurance cover etc.
- 5.4 Psychological needs and mental health:**
- 5.4.1 Persons tested positive for COVID-19, their families, health workers who get in contact with COVID positive cases must be provided due psychosocial support wherever possible.
 - 5.4.2 There is need to show respect, empathy and compassion and not subject them to any kind of stigma or discrimination.
 - 5.4.3 Persons in isolation or quarantine may face enormous stress and anxiety. Managing the mental health and psychosocial well-being is important.
 - 5.4.4 The institutions must ensure access to psychosocial and emotional support, good communication, flexible working hours, and ways to ensure physical as well as psychological well-being and mental health of those going through the crisis.

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Annexure I: SOP Template for Ethics Review of Biomedical and Health Research during COVID-19 Pandemic

Institute Logo	SOP for Review of Review of Biomedical and Health Research during COVID-19 Pandemic	SOP No: __/ V01 Effective Date: dd/mm/yyyy
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1. Purpose:

The purpose of this Standard Operating Procedure (SOP) is to describe how the EC will function and conduct ethics review in an emergency situation with restrictions as imposed by social distancing requirements during the COVID-19 outbreak.

2. Procedures & Responsibilities:

SN	Procedure	Responsibility
Submission and initial review		
a.	Submit research proposal (electronically)	Researchers
b.	Receive, record, verify completeness and allot reference no.	Secretariat/ Member Secretary
c.	Categorize depending on risk (Exempt/ Expedited, Full committee), identify need for review by experts/ independent consultants/ patient /others, designate reviewers	Member Secretary in consultation with Chairperson
d.	Perform Initial review of documents as described in <i>Table 4.3 of ICMR National Ethical Guidelines</i> , fill study evaluation form	Primary/ secondary Reviewers
e.	Schedule virtual Meeting, Prepare Agenda, invite members (<i>Independent Consultants/Subject Experts/ PI/ Member secretary of local EC/ in consultation with Chairperson</i>).	Secretariat / Member Secretary
Virtual EC meeting		
f.	Open the meeting, determine quorum (<i>Section 4.8.4 of ICMR National Ethical Guidelines</i>), COI declaration, Summaries Agenda	Chairperson
g.	Brief presentation and/or address queries on the research proposal and leave meeting prior to decision	Researchers/ subject experts (optional)
h.	Present observations on item reviewed	Primary/ secondary Reviewers
i.	Discuss further on the item and reach consensus	EC members
j.	Record Decision and rejoin member who had declared COI before moving on to subsequent item on agenda	Secretariat / Member Secretary
k.	Record minutes of meeting, ratify approved decisions of exemption/expedited review before closing meeting	Member Secretary/ Chairperson
Post meeting activities		
l.	Communication of decision and maintaining records.	Secretariat/ Member Secretary
m.	Follow up/monitoring/ analysis of SAE/ handling of issues related to non-compliance, violation, complaints etc.	Member Secretary in consultation with Chairperson

3. Detailed Instructions:

- The Research Proposal should be submitted electronically in ICMR Common Forms for Ethics Review (http://ethics.ncdirindia.org/Common_forms_for_Ethics_Committee.aspx) with supporting documents (Informed Consent, Brief CV of PI/ Co PIs, Questionnaire/ Case report form, Approval/ Comments of scientific committee, CTRI/ CDSCO/ HMSC/ MTA/ MoU/ insurance coverage) as applicable.
- Once received, the secretariat will verify protocol for completeness (if not ask PI) and number.
- Member Secretary to categorise research into full review, expedited review or exemption from review.
- Member Secretary (in consultation with Chairperson) will identify need for review by subject experts, independent consultants, special invitees, patient representatives, others for prior review or to present views during the meeting.
- The project for full review will be included in agenda of virtual full-committee meeting to be scheduled at the earliest (48 hrs) by the Member Secretary in consultation with the Chairperson.
- The members will be briefed about the technological requirements and virtual platform used for the conduct of the meeting.
- Quorum requirements for review will be applicable as per Section 4.8.4 ICMR National Ethical Guidelines, 2017.
- Review procedures as per ICMR National Ethical Guidelines will also hold good for the virtual web ethics meeting.

4. Annexures: if any

5. References: ICMR National Ethical Guidelines for Biomedical and Health Research involving Human Participants

Prepared by	Reviewed by	Page 11 of 17	Approved by	Accepted by
Signature with date	Signature with date		Signature with date	Signature with date



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Guidance for appropriate recording of COVID-19 related deaths in India



Impacting NCD Public Health Actions and Policies
Collaborate Innovate Inspire

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1. Introduction

1.1 What is Cause of Death?

The cause of death (COD) is defined as “all those diseases, morbid conditions or abnormalities, injuries which either resulted in or contributed to death and the circumstances of the accident or violence which produced any such injuries.”(1)

1.2 How to record Cause of Death?

Medical Certificate of Cause of Death (MCCD) is the certificate issued by the attending medical practitioner who had treated the person during admission in a medical institution or in the last illness (prior to death) while taking treatment from a physician outside of a medical institution. Medical certification of cause of death is the process of recording and reporting death using standard Form 4 (institutional deaths) and Form 4A (non-institutional deaths) as per the rules of the Registration of Births and Death Act, 1969. The MCCD form contains Part 1 to record the immediate and antecedent causes, and Part 2 to record the significant conditions that contributed to the death but were not part of the sequence of events leading to death.

Image 1: Cause of Death section of Form 4/4A

<u>CAUSE OF DEATH</u>		Interval between onset and death approx
I Immediate cause State the disease, injury or complication which caused death, not the mode of dying such as heart failure, asthenia, etc	a) due to (or as a consequence of)
Antecedent cause Morbid conditions, if any, giving rise to the above cause stating underlying conditions last.	b) due to (or as a consequence of)
II Other significant conditions contributing to the death but not related to the disease or condition causing it	c)

1.3 What is Underlying COD?

Death often results from the combined effect of two or more independent or related conditions, that is, one condition may lead to another, which in turn leads to a third condition and so on. Where there is a sequence, the disease or injury which initiated the sequence of events, called the **underlying cause of death** is recorded and reported. It is:

- (a) The disease or injury which initiated the train of morbid events leading directly to death;
- Or
- (b) The circumstances of the accident or violence which produced the fatal injury.

All the morbid conditions or injuries consequent to the underlying cause relating to death are termed as antecedent and immediate cause.

The medical part of the certificate consists of two parts-

I. Sequence of events leading to death -

First line is the immediate cause of death – the condition / disease that directly led to death / that preceded death.

The cause of death antecedent to immediate cause should be entered in line (b), and a cause further antecedent to this should be entered in line (c).

Underlying cause of death is on the lowest line of part I – It is the disease or condition that started the sequence of events between normal health to immediate cause of death. Conditions if any, as a consequence thereof will be entered above it in ascending causal order of sequence.

How many cause of death can be entered in Part I?

Only one cause is to be entered on each line of Part I. There may be many morbid events that happened, but the sequence of events that caused death should be sorted out, and one cause should be written on each line of Part 1 so that there is a **logical sequence of events leading to death**.

What if there is only one condition?

The disease, injury or complication that immediately preceded death can be the only entry in the MCCD FORM if only one condition is present at death.

What if there is only one condition antecedent to the immediate cause?

The condition antecedent to the immediate cause should be entered in line (b). Line (c) should be kept blank.

How to record time interval from onset of disease to death?

The time interval between the presumed onset of the condition, not the diagnosis, and death should be reported. It is acceptable to approximate the intervals or use general terms, such as hours, days, weeks, or years.

II. Other significant conditions that contributed to the death

All other diseases or conditions believed to have unfavourably influenced the course of the disease leading to death, but were not related to the disease or condition directly causing death.

What should be entered in Part II - Other significant conditions?

Any disease, abnormality, injury or late effects of poisoning, believed to have adversely affected the deceased should be reported such as chronic conditions, and also information such as:

<ul style="list-style-type: none">• Chronic Bronchitis /COPD/Asthma/ Tuberculosis• Cancer –Primary / Metastatic cancer / On cancer directed treatment /Old cancer - cured or treated• Cardiovascular disease- Hypertension / IHD/Coronary Heart Disease / heart failure• Stroke / Neurological conditions like epilepsy, Parkinson’s disease, dementia, Alzheimer’s disease• Rheumatoid arthritis / Immune related conditions	<ul style="list-style-type: none">• Use of alcohol and/or other substances.• Tobacco use (smoking / smokeless)• Recent pregnancy, if believed to have contributed to the death.• Environmental factors-exposure to toxic fumes, history of working in specific industry, professional exposure to toxins, specific animals• Late effects of injury, including head injury sequelae• Any iatrogenic underlying cause• Surgical information, if applicable
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1.4 Public health significance of Cause of Death data

Stating the sequence of morbid conditions in order, allows selection of the cause of death that is considered as “underlying” cause. It is the underlying cause of death that is coded with ICD -10 codes and is counted for statistical purposes.

Robust cause of death information in a population is useful for understanding disease burden estimations, and explains trends in the health of populations. It is useful for evaluation and planning of health services and programmes. Good cause of mortality statistics also aids in identifying research questions of public health significance.

2 COVID-19

2.1 COVID-19 pandemic and need for cause of death

COVID-19 is the infectious disease caused by the most recently discovered coronavirus (SARS- CoV- 2) from Wuhan, China, in December 2019. The COVID-19 disease outbreak was declared a Public Health Emergency of International Concern (PHEIC) on 30 January 2020 by the World Health Organization, and later on 11 March 2020 as a Global Pandemic. During such situations, mortality surveillance becomes a very important public health tool to assess the impact of the viral infection.

2.2 COVID-19 as Underlying Cause of Death (UCOD)

COVID-19 is reported to cause pneumonia / acute respiratory distress syndrome (ARDS) / cardiac injury / disseminated intravascular coagulation and so on. These may lead to death and may be recorded in line ‘a’ or ‘b’. It is likely that COVID-19 is the underlying cause of death (UCOD) that lead to ARDS or Pneumonia in most of the deaths due to COVID-19 (test positive and symptoms positive). In these cases COVID-19 must be captured in the last line / lowest line of Part 1 of MCCD form 4/4 A. Acute respiratory failure is a mode of dying and it is prudent not to record it in line a/b/c.

Patients may present with other pre-existing comorbid conditions such as chronic obstructive pulmonary disease (COPD) or asthma, chronic bronchitis, ischemic heart disease, cancer and diabetes mellitus. These conditions increase the risk of developing respiratory infections, and may lead to complications and severe disease in a COVID-19 positive individual. These conditions are not considered as UCOD as they have directly not caused death due to COVID-19. Also a patient may have many co-morbid conditions, but only those that have contributed to death should be recorded in Part 2.

2.3 ICD-10 Codes for COVID-19 provided by World Health Organization

Emergency ICD-10 Code	Usage conditions
U07.1	COVID-19,virus identified
U07.2	COVID-19, virus not identified, Clinically-epidemiologically diagnosed COVID-19 Probable COVID-19 Suspected COVID-19

2.4 Public health significance of recording cause of death in COVID-19 pandemic

COVID-19 is a new disease and is a pandemic affecting all communities and countries. It's clinical presentation ranges from mild to severe, and fatality depends on the severity of the illness, associated co-morbid conditions and age of patients. Patterns of disease and patterns of death can come from only standardised recording of clinical disease history and cause of death, and therefore epidemiological surveillance of disease and death are important. Robust data is needed from every district and state in India to measure the public health impact of COVID 19 and to plan for timely health interventions and protect communities. At the same time, other health conditions affecting populations need to be also monitored so that the health system is prepared for responding to the needs of the population.

3 Completing Medical Certification of Cause of Death (MCCD) in COVID-19

3.1 Mortality coding of COVID-19 with ICD-10 codes

The ICD-10 codes presently recommended by WHO for mortality coding are:

Test	Symptoms of COVID-19	Diagnosis	Code
+ve	None	Confirmed COVID-19	U07.1
+ve	Present	Confirmed COVID-19 documented as UCOD	U07.1
+ve	Present with comorbid conditions like heart disease, asthma, COPD, Type 2 diabetes	Confirmed COVID-19 documented as UCOD	U07.1
Test Negative	Present	Clinically –Epidemiologically diagnosed COVID -19	U07.2
Test awaited	Present	Suspected COVID-19	
Test inconclusive	Present	Probable COVID-19	

3.2 Examples of underlying cause of death in COVID-19

Some examples are provided to help physicians' record cause of death in COVID-19

Example 1 : 40 year old male diagnosed with COVID-19			
CAUSE OF DEATH			
Part I		Interval between onset and death approx	For statistical use
Immediate Cause State the disease, injury or complication which caused death, not the mode of dying such as heart failure, asthenia, etc	a) Respiratory acidosis	2 days	

Antecedent cause Morbid conditions, if any, giving rise to the above cause stating underlying conditions last.	b) Acute respiratory distress syndrome (ARDS) c) COVID-19	3 days 7 days	U07.1
Part II Other significant conditions contributing to the death but not related to the disease or condition causing it.		

Example 2 : 60 year old male, father of COVID-19 patient and a known diabetes individual presented with Influenza like illness (ILI) and died, test for COVID-19 not available			
CAUSE OF DEATH			
Part I		Interval between onset and death approx	For statistical use
Immediate Cause State the disease, injury or complication which caused death, not the mode of dying such as heart failure, asthenia, etc	a) Acute respiratory distress syndrome (ARDS)	1 day	
Antecedent cause Morbid conditions, if any, giving rise to the above cause stating underlying conditions last.	b) Influenza like illness c) COVID-19 suspect	4 days 4 days	U07.2
Part II Other significant conditions contributing to the death but not related to the disease or condition causing it.	Diabetes 	15 years	

Example 3 : 50 year old female completed chemotherapy for Breast cancer admitted with breathlessness and developed shock and died			
CAUSE OF DEATH			
Part I		Interval between onset and death approx	For statistical use
Immediate Cause State the disease, injury or complication which caused death, not the mode of dying such as heart failure, asthenia, etc	a) Disseminated Intravascular Coagulation (DIC)	2 days	

Antecedent cause Morbid conditions, if any, giving rise to the above cause stating underlying conditions last.	b) Pneumonia	5 days	U07.1
	c) COVID-19	5 days	
Part II Other significant conditions contributing to the death but not related to the disease or condition causing it.	Breast Cancer	6 months	

Example 4 76 year old male with Ischemic heart disease developed fever and breathlessness two days ago, and was admitted and died in 24 hours, first test was inconclusive

CAUSE OF DEATH			
Part I		Interval between onset and death approx	For statistical use
Immediate Cause State the disease, injury or complication which caused death, not the mode of dying such as heart failure, asthenia, etc	a) Acute cardiac injury	1 day	
Antecedent cause Morbid conditions, if any, giving rise to the above cause stating underlying conditions last.	b) Probable COVID-19	2 days	U07.2
Part II Other significant conditions contributing to the death but not related to the disease or condition causing it.	Ischemic heart disease		

3.3 What to avoid as Cause of Death?

- Avoid Mode of Dying as Cause of Death – Mode of dying merely tells you that death has occurred and is not specifically related to the disease process.

Mode of dying		
Respiratory Arrest	Emaciation	Vasovagal attack
Asphyxia	Exhaustion	Cardiac arrest
Asthenia	Heart Failure	Heart attack
Brain failure	Hepatic/Liver failure	Hepatic failure
Cachexia	Hepatorenal failure	Liver Failure
Cardiac Arrest/Heart Attack	Kidney failure/Renal failure	Cardio respiratory failure
		Multiorgan/System failure

Cardio Respiratory Arrest Coma Debility	Respiratory arrest/Failure Shock Syncope Uraemia Vagal inhibition	Respiratory Failure Cardio Pulmonary failure
---	---	---

- Avoid abbreviations and short forms like ARDS, COPD, SARI.

Incorrect	Correct
ARDS	Acute respiratory distress syndrome
COPD	Chronic obstructive pulmonary disease
SARS	Severe Acute Respiratory illness
CRF	CRF could be Cardio respiratory failure or Chronic Renal failure
MI	Myocardial Infarction / Mitral Incompetence
AD	Acute Diarrhoea / Alzheimer`s Dementia
MS	Mitral Stenosis / Multiple Sclerosis
RTI	Respiratory Tract Infection / Reproductive Tract Infection

- Though COVID-19 (Corona virus disease -19) is an abbreviation, it has been specified by the WHO and is an acceptable term to be used as UCOD.

- Avoid vague terms or ambiguity –

Sometimes it is difficult to provide a simple description of cause of death when there are no medical records or a doctor is seeing the patient in a critical condition for the first time or the doctor is not the treating physician.

Incorrect	Correct
Irrelevant talking and feverishness	Delirium due to fever
Very poor nourishment	Severe Malnutrition
Less healthy at birth	Low birth weight / Congenital Anomaly

- Avoid short forms / incomplete description –

Incorrect	Correct
Ca Br	Cancer Breast / Cancer Brain
Ac. Infarct	Acute Myocardial Infarction / Acute Cerebral Infarction
Sev Mal	Severe Malaria / Severe Malnutrition

- Avoid symptoms / signs

Incorrect	Correct
Jaundice	Hepatitis
Fever	Infection
Chest pain	Angina

- Avoid terms such as senescence, old age, senility, infirmity, and advanced age.

These terms cannot be the immediate cause of death. There may be 1 or 2 conditions that have been due to old age and thus the etiological sequence should be specified. If old age was a contributory factor, it should be entered in Part II.

Part I	Incorrect	Correct
la	Bed ridden	Aspiration Pneumonia
lb	Old Age	Stroke
lc	Hypertension	
Part II		
I		Old Age
		Hypertension

3.4 Other considerations in recording MCCD for COVID -19

- i. Provide specific medical terms as cause of death. COVID-19 is a 'viral infection' and presentations include 'influenza like illness' (ILI) or "Severe acute respiratory illness (SARI). These are not specific and can be used in the sequence of the events and the specific virus / bacteria / agent that caused the disease should be recorded as UCOD, for example COVID-19.
- ii. Record the logical sequence of events in Part 1. There may be many medical conditions in a person. Based on the most logical events that caused death, only these conditions are mentioned in Part 1 of the MCCD form.
- iii. **Manner of death:** It refers to the circumstances under which death has occurred.
 - Manner of death due to COVID-19 infection will mostly be 'natural', as it is the disease that led to the death.
 - In case of suicide by an individual tested +ve for COVID-19, the manner of death may be captured as suicide / pending investigation if the medical autopsy is awaited.
- iv. **Place of death:** Most of the deaths due to COVID-19 occur in a hospital and in such cases the place of death should be captured as 'Hospital'. In case an individual is discharged from hospital and the death occurs in his/her residence, the place of death must be captured as 'House'.

4. Use of ICMR-NCDIR e-Mortality (e-Mor) software for recording cause of death

The ICMR-NCDIR e-Mortality (e-Mor) software application aids in recording and reporting cause of deaths as per national standards of death reporting laid down by the Office of Registrar General of India (ORGI) under its Civil Registration System (CRS). This software can be implemented by hospitals and district local registrar offices in a district (to record deaths occurring in residence). Institutions should register with ICMR-NCDIR or State authority for provision of authorized login credentials. This will allow access to the software with its technical training on MCCD), ICD-10 coding for cause of death and use of software for recording and reporting deaths. The application data entry form is designed to record all details of Form 2 (Death Report) and Form 4 / 4A (MCCD Forms).

NCDIR e-Mor software features include:

- a. Record details of death of all institution and non-institution based deaths with guide to prevent errors in cause of death
- b. Guide in recording the sequence of death events and underlying cause of death

- c. Guide in ICD-10 coding as per the National list of the ORGI and codes for COVID-19 announced by the World Health Organization.
- d. Quality check modules to reduce errors in recording like date check, missing field check and search and export features
- e. Exporting data to maintain mortality register of the institutional deaths and generate statistical tables for data analytics to establish mortality audit systems in hospitals.
- f. On completion of accurate data entry, Form 2 and Form 4 can be printed, signed by appropriate authority for further submission to the Local Registrar for Death registration under CRS.
- g. District Registrar and Chief Registrar Office at the state level can monitor data coverage, MCCD coverage, and generate statistical tables on leading causes of death district and state wise.

Role of NCDIR: NCDIR e-Mor software is accessible online through dedicated secure webserver that hosts the software and shall support the online data transmission and standard data encryption. Offline access to the software may also be facilitated.

As coordinating unit, NCDIR team shall provide technical resources in implementation and monitoring of data quality. As per the NCDIR policy of data processing and disclosure, all necessary safeguards for data confidentiality and data security will be maintained. NCDIR shall develop data analytics for reporting all-cause mortality statistics and deaths related to COVID-19 as per guidelines. NCDIR will assist state/UT governments in strengthening MCCD through technical assistance.

5. Additional Guides

1. ICMR-NCDIR e-Mor : <http://ncdirindia.org/e-mor/>

[This software is available free of cost for use by any hospital/health facility/private practitioner/administrative unit concerned with recording cause of death]

2. World Health Organization. COVID-19 coding in ICD-10. Available from: <https://www.who.int/classifications/icd/COVID-19-coding-icd10.pdf?ua=1>
3. National Center for Health Statistics. Guidance for certifying deaths due to COVID–19. Hyattsville, MD. 2020.
4. Physicians Manual on Medical Certification of Cause of Death by ORGI, India.

Dated 15th May, 2020

Ministry of Health & Family Welfare
Directorate General of Health Services
(EMR Division)

Advisory for managing Health care workers working in COVID and Non-COVID areas of the hospital

1. Background

The health care personnel working in hospitals are at increased risk of acquiring the COVID-19 disease, if there is a breach in the personal protection while managing patients.

The health-work force is a valuable and scarce resource. Large number of COVID-19 affected health personnel getting isolated for treatment and their close contacts undergoing quarantine affects the health/hospital service delivery.

2. Purpose of the document

The purpose of the document is to provide guidance on preventive measures, isolation and quarantine of health care functionaries.

3. Institutional Mechanism for preventing and responding to Healthcare Associated Infections (HAIs) among HCWs

Hospitals shall activate its Hospital Infection Control Committee (HICC). The HICC in the health facility is responsible for implementing the Infection Prevention and Control (IPC) activities and organizing regular trainings on IPC for HCWs.

A Nodal Officer (Infection Control Officer) shall be identified by each hospital to address all matters related to Healthcare Associated Infections (HAIs). With reference to preventing such infection among healthcare workers, he/she will ensure that:

- i. Healthcare workers in different settings of hospitals shall use PPEs appropriate to their risk profile as detailed in the guidelines issued by this Ministry (available at: <https://www.mohfw.gov.in/pdf/GuidelinesonrationaluseofPersonalProtectiveEquipment.pdf> and <https://www.mohfw.gov.in/pdf/UpdatedAdditionalguidelinesonrationaluseofPersonalProtectiveEquipmentsettingapproachforHealthfunctionariesworkinginnonCOVID19areas.pdf>)
- ii. All healthcare workers have undergone training on Infection Prevention and Control and they are aware of common signs and symptoms, need for self-health monitoring and need for prompt reporting of such symptoms.
- iii. Provisions have been made for regular (thermal) screening of all hospital staff.
- iv. All healthcare workers managing COVID-19 cases are being provided with chemo-prophylaxis under medical supervision.
- v. Provisions have been made for prompt reporting of breach of PPE by the hospital staff and follow up action

4. Action for Healthcare Workers

- i. Ensure that all preventive measures like frequent washing of hands/use of alcohol based hand sanitizer, respiratory etiquettes (using tissue/handkerchief while coughing or sneezing), etc. are followed at all times.
- ii. He/she shall use appropriate PPE at all times while on duty.
- iii. A buddy system* to be followed to ensure that there is no breach in infection prevention control practices.
- iv. Any breach in PPE and exposure is immediately informed to the nodal officer/HoD of the department
- v. HCWs after leaving the patient care units (wards/OPDs/ICUs) at the doctor's duty rooms/hostels/canteen or outside the HCF must follow social distancing and masking to prevent transmission to/acquiring infection from other HCWs who may be positive.
- vi. Pregnant/lactating mothers and immuno-compromised healthcare workers shall inform their medical condition to the hospital authorities for them to get posted only in non-Covid areas

*Buddy system: Under this approach, two or more-person team is formed amongst the deployed hospital staff who share responsibilities for his/her partner's safety and well-being in the context of (i) Appropriately donning and doffing of PPEs, (ii) maintaining hand hygiene and (iii) taking requisite steps on observing breach of PPEs.

5. SOP for health work force deployment during COVID-19

5.1 SOP to be followed in case HCW reports exposure/breach of PPE

All the Healthcare workers must report every exposure to COVID-19 to the concerned nodal officer and HoD of the concerned department immediately

The Nodal officer will get the exact details of exposure to ascertain whether the exposure constitutes a high risk or low risk exposure as described below:

- **High risk exposure:**
 - HCW or other person providing care to a COVID-19 case or lab worker handling respiratory specimens from COVID-19 cases without recommended PPE or with possible breach of PPE
 - Performed aerosol generating procedures without appropriate PPE.
 - HCWs without mask/face-shield/goggles:
 - having face to face contact with COVID-19 case within 1 metre for more than 15 minutes
 - having accidental exposure to body fluids
- **Low risk exposure:**
 - Contacts who do not meet criteria of high risk exposure

The Nodal Officer/Head of the Department will form a sub-committee to assess the level of exposure and the risk as per assessment format at Annexure I. As per their assessment:

- High risk contacts will be quarantined for 14 days, tested as per ICMR testing protocol, actively monitored for development of symptoms and managed as per laid down protocol.
 - If they test positive but remain asymptomatic they will follow protocol for very mild/mild/pre-symptomatic cases as described in para 5.2.1 (a) below.

- If they test negative and remain asymptomatic, complete 14 day quarantine and return to work.
- Should symptoms develop, follow the guidance para 5.2.
- Low risk contacts shall continue to work. They will self-monitor their health for development of symptoms. In case symptoms develop, the guidance under para 5.2 would be followed.

5.2 SOP to be followed in case HCW reports symptoms suggestive of COVID-19

5.2.1 If any healthcare worker who is manifesting signs and symptoms suggestive of COVID-19, he/she will be isolated immediately and the following procedure will follow:

- a. In case of mild/very mild/pre-symptomatic case, he/she will have an option of home isolation, subject to the conditions stipulated in the revised guidelines for home isolation of very mild/pre-symptomatic COVID-19 cases (available at: <https://www.mohfw.gov.in/pdf/RevisedguidelinesforHomeIsolationofverymildpresymptomaticCOVID19cases10May2020.pdf>). Such cases would end their home isolation as per timeline provided in the said guidelines.
- b. In cases where home isolation is not feasible, such mild/very mild/pre-symptomatic cases will be admitted to a COVID Care Center[#].
- c. Moderate cases that require oxygen therapy shall be managed at a Dedicated COVID Health Center[#]
- d. Severe cases will be managed in a Dedicated COVID Hospital[#].

For cases admitted COVID Health facilities, their discharge will be governed guidelines available at: <https://www.mohfw.gov.in/pdf/ReviseddischargePolicyforCOVID19.pdf>

The details of categorization of health facilities as COVID Care center, Dedicated COVID Health Center and Dedicated COVID Hospitals along with categorization of patients (mild/moderate/severe) is available at:

<https://www.mohfw.gov.in/pdf/FinalGuidanceonMangaementofCovidcasesversion2.pdf>.

5.2.2 Those who test negative, will be managed as in non-COVID area as per their clinical diagnosis. Their resuming work will be based on the clinical diagnosis and the medical certification by the treating doctor.

5.2.3 For HCWs (with low risk exposure), who continue to work and develop symptoms:

- And test positive, further management would be based on their clinical presentation and as described in para 5.2 (1) (a) above
- Those who test negative, will return to work subject to medical certification for ailment

5.2.4 Discharge of COVID-19 positive HCWs will be in accordance with the discharge policy (available at: <https://www.mohfw.gov.in/pdf/ReviseddischargePolicyforCOVID19.pdf>).

5.3 Regular quarantine of healthcare workers after performing duty in COVID-19 areas

Quarantine of healthcare workers, other than what is stipulated above is not warranted.

COVID-19 Virus Exposure Risk Assessment Form for Health Care Workers (HCW)

1. Health Care Worker Information	
A. Name :	B. Department
C. Phone number	D. Age (in completed years) E. Gender
F. Current place of stay (Complete address)	
G. Type of HCW (specify), & Designation (Doctor, Nurse, Technician, others)	
2. HCW interactions/ activities performed on COVID-19 patient information	
A. Date of exposure to confirmed COVID-19 patient	
B. Place of Exposure:	
C. COVID-19 Patient details Patient symptomatic since (Date) Test Sample sent on (Date)	
D. Source control (Source/Patient wearing a cloth face covering or facemask)	Yes/ No
E. Approximate min. distance from the patient (in meters)	
F. Duration of contact (minutes)	
G. Aerosol-generating procedure was performed on the patient?	Performed Present/ Not Present
G2. If yes, what type of procedure	1. Intubation/2.Nebulisation 3.Airway suctioning, 4. Tracheostomy 5. Collection of sputum, 6. Bronchoscopy, 7. CPR 8. Other:
H. Accidental exposure to body fluids	Yes/ No
I. Did you have direct contact with the environment where the confirmed COVID-19 patient was cared for? E.g. bed, linen, medical equipment, bathroom etc.	Yes/ No/ Unknown
J. During the health care interaction with a COVID-19 patient, did you wear PPE	Yes/ No
J 2. If yes, which of the below items of Protection used:	
1. Surgical triple layer mask	Yes/ No
2. N95 mask,	Yes/ No
3. Single use gloves	Yes/ No
4. Disposable gown	Yes/ No
5. Face shield or goggles/ protective glasses	Yes/ No
K. Did you perform hand hygiene after touching the patient's surroundings (bed, door, handle etc.), regardless of whether you were wearing gloves?	Yes/ No/ NA

Ministry of Health and Family Welfare
 Directorate General of Health Services
 [Emergency Medical Relief]
(Updated on 15th May 2020)

Novel Coronavirus Disease 2019 (COVID-19): Additional guidelines on rational use of Personal Protective Equipment (setting approach for Health functionaries working in non-COVID areas)

1. About this guideline

This guideline is for health care workers and others working in Non COVID hospitals and Non-COVID treatment areas of a hospital which has a COVID block. These guidelines are in continuation of guidelines issued previously on ‘Rational use of Personal Protective Equipment’ (<https://www.mohfw.gov.in/pdf/GuidelinesonrationaluseofPersonalProtectiveEquipment.pdf>). This guideline uses “settings” approach to guide on the type of personal protective equipment to be used in different settings.

2. Rational use of PPE for Non COVID hospitals and Non-COVID treatment areas of a hospital which has a COVID block

The PPEs are to be used based on the risk profile of the health care worker. The document describes the PPEs to be used in different settings.

2.1.Out Patient Department

S.No.	Setting	Activity	Risk	Recommended PPE	Remarks
1	Help desk/ Registration counter	Provide information to patients	Mild risk	<input type="checkbox"/> Triple layer medical mask <input type="checkbox"/> Latex examination gloves	Physical distancing to be followed at all times
2	Doctors chamber	Clinical management	Mild risk	<input type="checkbox"/> Triple layer medical mask <input type="checkbox"/> Latex examination gloves	No aerosol generating procedures should be allowed.
3	Chamber of Dental/ENT doctors/ Ophthalmology doctors	Clinical management	Moderate risk	<input type="checkbox"/> N-95 mask <input type="checkbox"/> Goggles <input type="checkbox"/> Latex examination gloves + face shield	Aerosol generating procedures anticipated. Face shield, when a splash of body fluid is expected
4	Pre- anesthetic check-up clinic	Pre-anesthetic check-up	Moderate risk	<input type="checkbox"/> N-95 mask <input type="checkbox"/> Goggles* <input type="checkbox"/> Latex examination gloves	* Only recommended when close examination of oral cavity/dentures is to be done
5	Pharmacy counter	Distribution of drugs	Mild risk	<input type="checkbox"/> Triple layer medical mask <input type="checkbox"/> Latex examination gloves	Frequent use of hand sanitizer is advised over gloves.

6	Sanitary staff	Cleaning frequently touched surfaces/ Floor	Mild risk	<input type="checkbox"/> Triple layer medical mask <input type="checkbox"/> Latex examination gloves	
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#All hospitals should identify a separate triage and holding area for patients with Influenza like illness so that suspect COVID cases are triaged and managed away from the main out-patient department.

2.2.In-patient Department (Non-COVID Hospital &Non-COVID treatment areas of a hospital which has a COVID block)

S.No.	Setting	Activity	Risk	Recommended PPE	Remarks
1	Ward/individual rooms	Clinical management	Mild risk	<input type="checkbox"/> Triple layer medical mask <input type="checkbox"/> Latex examination gloves	Patients stable. No aerosol generating activity.
2	ICU/ Critical care	Critical care management	Moderate risk	<input type="checkbox"/> N-95 mask <input type="checkbox"/> Goggles <input type="checkbox"/> Nitrile examination gloves +Face shield	Aerosol generating activities performed. Face shield, when a splash of body fluid is expected
3	Ward/ICU /critical care	Dead body packing	Low Risk	<input type="checkbox"/> Triple Layer medical mask <input type="checkbox"/> Latex examination gloves	
4	Ward/ICU/ Critical care (Non-COVID)	Dead body transport to mortuary	Low Risk	<input type="checkbox"/> Triple Layer medical mask <input type="checkbox"/> Latex examination gloves	
5	Labor room	Intra-partum care	Moderate Risk	<input type="checkbox"/> Triple Layer medical mask <input type="checkbox"/> Face shield <input type="checkbox"/> Sterile latex gloves <input type="checkbox"/> Coverall N-95 mask*	Patient to be masked in the Labor room, if possible. *If the pregnant woman is a resident
6	Operation Theater	Performing surgery, administering general anaesthesia	Moderate Risk	<input type="checkbox"/> Triple Layer medical mask <input type="checkbox"/> Face shield (- wherever feasible) <input type="checkbox"/> Sterile latex gloves + Goggles	Already OT staff shall be wearing For personnel involved in aerosol generating procedures

				N-95 mask*	*If the person being operated upon is a resident of containment zone
7	Sanitation	Cleaning frequently touched surfaces/ floor/ changing linen	Low Risk	<input type="checkbox"/> Triple Layer medical mask <input type="checkbox"/> Latex examination gloves	

2.3. Emergency Department (Non-COVID)

S.No.	Setting	Activity	Risk	Recommended PPE	Remarks
1	Emergency	Attending emergency cases	Mild risk	<input type="checkbox"/> Triple Layer medical mask <input type="checkbox"/> Latex examination gloves	No aerosol generating procedures are allowed
2		Attending to severely ill patients while performing aerosol generating procedure	High risk	<input type="checkbox"/> Full complement of PPE (N-95 mask, coverall, goggle, Nitrile examination gloves, shoe cover)	

2.4. Other Supportive/ Ancillary Services

S.No.	Setting	Activity	Risk	Recommended PPE	Remarks
1.	Routine Laboratory	Sample collection and transportation and testing of routine (non-respiratory) samples	Mild risk	<input type="checkbox"/> Triple layer medical mask <input type="checkbox"/> Latex examination gloves	
		Respiratory samples	Moderate risk	<input type="checkbox"/> N-95 mask <input type="checkbox"/> Latex examination gloves	
2	Radio-diagnosis, Blood bank, etc.	Imaging services, blood bank services etc.	Mild risk	<input type="checkbox"/> Triple layer medical mask <input type="checkbox"/> Latex examination gloves	
3	CSSD/Laundry	Handling linen	Mild risk	<input type="checkbox"/> Triple layer medical mask <input type="checkbox"/> Latex examination	

				gloves	
4	Other supportive services incl. Kitchen	Administrative Financial Engineering** and dietary** services,etc.	Low risk	<input type="checkbox"/> Face cover	** Engineering and dietary service personnel visiting treatment areas will wear personal protective gears appropriate to that area

2.5.Pre-hospital (Ambulance) Services

S.No.	Setting	Activity	Risk	Recommended PPE	Remarks
1	Ambulance Transfer to designated hospital	Transporting patients not on any assisted ventilation	Low risk	<input type="checkbox"/> Triple layer medical mask <input type="checkbox"/> Latex examination gloves	
		Management of SARI patient	High risk	<input type="checkbox"/> Full complement of PPE (N-95 mask, coverall, goggle, latex examination gloves, shoe cover)	While performing aerosol generating procedure
		Driving the ambulance	Low risk	<input type="checkbox"/> Triple layer medical mask <input type="checkbox"/> Latex examination gloves	Driver helps in shifting patients to the emergency

Points to remember while using PPE

1. Standard precaution to be followed at all times
2. PPEs are not alternative to basic preventive public health measures such as hand hygiene, respiratory etiquettes which must be followed at all times.
3. Always follow the laid down protocol for disposing off PPEs as detailed in infection prevention and control guideline available on website of MoHFW.

In addition, patients and their attendants to be encouraged to put on face cover.

In case a COVID-19 patient is detected in such Non-COVID Health facility, the MoHFW guidelines for the same has to be followed (Available at: <https://www.mohfw.gov.in/pdf/GuidelinestobefollowedondetectionofsuspectorconfirmedCOVID19case.pdf>)

STANDARD GUIDELINES FOR MEDICO-LEGAL AUTOPSY IN COVID-19 DEATHS IN INDIA 2020



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INDIAN COUNCIL OF
MEDICAL RESEARCH

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**STANDARD GUIDELINES FOR MEDICO-LEGAL AUTOPSY IN
COVID-19 DEATHS IN INDIA**

2020



New Delhi, India

ICMR, New Delhi

Standard guidelines for Medico-legal autopsy in COVID-19 deaths in India

1st edition.

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Indian Council of Medical Research

Division of ECD, Ansari Nagar, New Delhi, India

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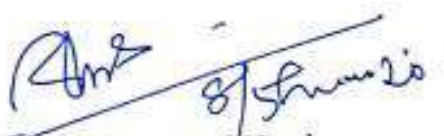
SCOPE

This brief guidance document has been drafted by Indian Council of Medical Research in consultation with stakeholders in healthcare who are following the outbreak of the COVID-19 infection in the country. It has been specifically produced to aid Forensic experts, Pathologists, Microbiologist, Doctors who are conducting legal autopsy, Mortuary staff, Forensic Laboratory scientist/officers, Social workers investigating Police officers, Morgue van transporters, and Crematoriums dealing with a confirmed or suspected COVID-19 death deceased body. It is an advisory for all of them on the possible health risks associated with such a case and the reduction of these risks health hazards, further spread of disease and Dignified cremation of deceased Body.

The objectives of the document are to:

1. To provide Standard operating procedure for Medico-legal autopsy in COVID-19 cases.
2. To recommend standard Bio-safety precautions for Forensic Pathologists, Health care workers, Mortuary technicians/staffs, relatives, crematorium/burial staff handling COVID-19 dead bodies.
3. To provide guidelines for Safe and Dignified management of COVID-19 dead bodies encompassing preservation, transportation and disposal.
4. Disinfection & sterilization of Mortuary.
5. To provide further deliberations on Bio-safety guidelines/required resources for Safe medical autopsy and research in COVID -19 death cases.

These guidelines have been specifically prepared from the viewpoint of conducting safe Medico-legal Autopsy with no invasive surgery in COVID-19 deaths. The facilities and resources differ between different Healthcare institutes, Hospital and Autopsy centre and between different clinical departments of same Institute. Hence, each Healthcare institute and each clinical department must customize their respective guideline accordingly, using Indian Council of Medical Research guideline as rational format.


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**STANDARD GUIDELINES FOR MEDICO-LEGAL
AUTOPSY IN COVID-19 DEATHS IN INDIA**

Section I: Introduction

The Corona virus Disease-2019¹ caused by the novel corona virus, COVID-19 was first reported in late 2019 at Wuhan city, China. World Health Organization on 30th January 2020 declared the outbreak of COVID-19 as a Public Health Emergency of International concern. There are currently over four million cases reported worldwide and three lakh deaths. On 30th January 2020 India reported its first case of COVID-19 in Kerala and since then over 90,000 laboratory confirmed cases and over 2900 deaths due to COVID-19 in India have been reported. The Doctors, Mortuary Technicians and other Mortuary Staffs in mortuary performing autopsy are exposed to potentially high and dangerous health risks due to coming in direct contact with infected organs, fluids and secretions, even after taking the highest precautions. **Hence, Non Invasive Autopsy Technique should be adopted for Forensic Autopsy. Death in hospital or under medical care due to COVID-19 is a Non-Medicolegal case and doesn't require a medico-legal autopsy and the required certification of death has to be done by treating doctors.** During this pandemic, many of the dead bodies will be of COVID-19 suspected people, which can be alleged suicides, accidents, homicides or brought dead cases to hospitals. These cases will be labeled by emergency doctors as medicolegal case and subsequently police will be informed, which may necessitate a Forensic Autopsy.

As per 174 (3)(IV) CrPC *“there is any doubt regarding the cause of death”*; or As per 174 (3)(V) CrPC *“the police officer for any other reason considers it expedient so to do, he shall subject to such rules as the State Government may prescribe in this behalf, forward the body, with a view to its being examined, to the nearest Civil Surgeon, or other qualified medical man appointed in this behalf by the State Government, if the state of the weather and the distance admit of its being so forwarded without risk of such putrefaction on the road as would render such examination useless.”* After the inquest procedure, if any crime is not suspected or in cases where there is no doubt regarding the cause of death, police have the authority (as per section 174 CrPC) to waive off conduction of autopsy, even though it has been labeled as medicolegal case. The investigating Police officer must proactively take steps to waive off unnecessary autopsies during this pandemic situation. This provision needs to be used prudently based on Police officer's investigation findings and Forensic Doctor's advice. These guidelines are based on the current understanding about modes of transmission of

COVID-19, sensitivity of the diagnostic tests, international autopsy guidelines and knowledge about infrastructure and logistic strength of common mortuaries in India.

Section II: Case categorization of COVID-19 dead bodies

Categorization according to case risk assessment and dealing with cases accordingly is the key to minimize possibility of spread of infection. According to COVID-19 infective status, dead bodies brought for medico-legal autopsy can be categorized as below:

- a) **Confirmed Case:** Cases with Nucleic acid positive by RT-PCR technique for COVID-19 infection (OR) High homology for COVID-19 infection by viral gene sequencing.
- b) **Suspected Case:** Cases having at least one of the epidemiological history features and two clinical features OR three clinical features of COVID-19.

Epidemiological history: 14 days prior to the onset of symptoms:

- Travel history or residence in areas declared COVID-19 hotspots.
- Contact with COVID-19 cases.
- Exposure to patients with fever or respiratory symptoms in COVID-19 hotspots.
- Evidence of clustering.

Clinical features:

- Fever with or without respiratory symptoms
- Initially, total WBC count can be normal or decreased, or lymphocyte count decreased
- Imaging characteristics of COVID-19 as small patchy shadows and interstitial changes, especially in lateral lung
- Ground glass opacities and infiltrates were seen subsequently in bilateral lungs
- Lung consolidation in severe cases.

Asymptomatic infected people and patients in incubation period may not meet the diagnostic criteria for suspected cases but if they have possible epidemiological history, all dead bodies without reliable clinical/ epidemiological history and all unidentified dead bodies should be treated as suspected COVID 19 deaths. Cases with negative swab results also should be treated as suspected COVID-19 deaths as false negative result is not uncommon.

Section III: Safety and Precautions in packing of dead body in Hospital ward/ICU/ Emergency Ward and transport of the dead body toMortuary

All Designated COVID-19 Hospitals should have dedicated Mortuary Services or an earmarked Mortuary with dedicated transport facility.

A) Packaging of Dead Body in Hospital ward/ICU/ Emergency Ward:

- It is advisable to collect Nasopharyngeal swab at the emergency department/casualty/ward/ICU and should be sent for COVID-19 RT-PCR test in all Suspected cases before moving the body to mortuary for preservation if the same was not sent in due hospital course.
- Death report mentioning the Cause of death along with body handover slip should be prepared by treating doctor.
- The body should be shifted after making proper entry in the nursing log books.
- The Nursing Officer with assistance from hospital attendant will pack the dead body in double packing in a leak proof zipped body bag.
- A transparent body bag is preferable, so that the body can be identified by relatives/police/administration. If transparent bag is not available, the packing should be done in such a manner that the face can be shown to the relatives/police/administration with minimum movement of the bag and body.
- All dead bodies should be properly labeled indicating: Name, Registration Number, date, time and place of packing. The label should be preferably water resistant.
- All tubes, drains and catheters on the dead body should be removed.
- Any puncture holes or wounds (resulting from removal of catheters, drains, tubes, or otherwise) should be disinfected with 1% Sodium hypochlorite and dressed with adhesive impermeable material.
- Apply caution while removing and handling sharp devices attached to the body. They should be disposed into designated containers for sharp hospital wastes.
- Plug oral, nasal orifices of the dead body to prevent leakage of body fluids.
- The exterior of the body bag should be decontaminated with 1% Sodium hypochlorite.
- The dead body shall be kept inside leak-proof plastic body bag wrapped in a plastic bag or sheet.

B) Transport of Dead Body to Mortuary:

- The status of COVID-19 infection should be clearly mentioned on the exterior of Body packing.
- The trolley, on which the body is to be shifted, must be disinfected before it is taken out from the ICU/ward/emergency.
- If death occurs in ICU/hospital ward/emergency, the Health Care Worker (HCW) working in the respective areas should hand over the trolley carrying the dead body to the designated staff outside of the respective area. **Under no circumstances should the HCW working in the COVID ward/area carry the dead body to the mortuary or any other place.**
- The HCW who shifts the body to the mortuary should be wearing mask, coverall and gloves at all times. Complete PPE kit is not required for transport of dead bodies, if they are packed properly.
- The body should be shifted to Mortuary earmarked for preservation.
- All mortuary staffs involved in transfer of the dead body from trolley to cold chamber and vice versa, as well as shifting of the dead body to the autopsy hall need to wear prescribed PPE for handling these dead bodies' i.e. N95 masks, coverall, goggles, head cover and shoe cover. This is because shifting in mortuary requires direct handling and lifting of the body by the staff.
- To minimize the number of people involved in handling of the dead body, the mortuary staff who is entrusted with the duty of shifting the dead body to the autopsy hall should be the one who assists during the autopsy.
- The vehicle/trolley after the transfer of the body to mortuary shall be decontaminated with 1% Sodium Hypochlorite.

C) Preservation in cold chamber:

- The existing mortuary facility for body storage should be strictly divided into area for COVID-19 bodies and area for Non COVID-19 bodies and should be labeled.
- A proper log book should be maintained for receiving and preserving the body in Mortuary, clearly recording the COVID-19 infection status.
- If feasible, separate cold chamber/cabinets shall be allotted collectively for COVID-19 positive and suspected cases.

- At places where allotting separate cold chamber is not possible due to lack of adequate facilities, the existing cold storage should have dedicated storage chambers/bays/trays for COVID-19 bodies.
- The COVID-19 positive bodies should preferably be preserved in lower chambers, to prevent spillage of body fluids or other material while lifting and tilting the body.
- Dead bodies should be stored in dedicated cold chambers/cabinets maintained at approximately 4-8°C.
- The cold chamber must be kept clean. All surfaces, instruments, door knobs and transport trolleys should be properly disinfected with 1% Sodium hypochlorite solution after handling each body.

D) Precautions at Mortuary before handing over the body:

- Handling staff or morgue attendant should take standard precautions including wearing gloves, water resistant gown/ plastic apron over water repellent gown, and surgical mask.
- Any COVID-19 confirmed or suspected body that is received in the mortuary should be properly packed and sealed as mentioned before. In case the body is received directly to the mortuary, it should be packed and sealed as mentioned earlier. The procedure for packing and sealing is same, whether it is done in ICU/ward/ emergency or at the mortuary.

Section IV: Forensic autopsy in confirmed & suspected COVID-19 deaths in India

- **Death due to COVID-19 is a non-medicolegal case.** The death in hospital or under medical care due to COVID-19 is a non-medicolegal case and no medicolegal Autopsy shall be conducted. The certification of death and issuance of Medical Certificate of Cause of Death (MCCD) shall be done by the treating doctor.
- **Dead bodies of suspected COVID-19 patients** which are brought dead to hospital may be labeled as medico legal cases by the Doctor in Emergency/ Casualty duty. In this situation the body will be sent to Mortuary as a medicolegal case and police will be informed, which may necessitate a Medicolegal Autopsy for clarity in the cause of death. The Forensic Autopsy in these cases may be waived off.
- In some homicidal, accidental or suicidal death cases, the deceased may be COVID-19 confirmed or suspected. If the patient dies in the hospital, the clinical records and all other relevant documents may be sent along with the body for Forensic Autopsy.
- **The procedure of conducting Forensic Autopsy:** Medicolegal Autopsy is an inquest based medical examination vide sec 174 CrPC and 176 CrPC and inquest itself contains panchnama, statements from witnesses and all other allied circumstantial evidence details. On the basis of same, along with examination of clothing, external examination, multiple photographs, utilizing the concept of verbal autopsy (as described by WHO) and criteria of elimination and exclusion, the medicolegal autopsy shall be conducted strictly avoiding any invasive surgical procedures and avoiding contact with body fluids for mortuary staffs, body handlers and doctors conducting post mortem examination.

Photography:

- While performing autopsy, photography must be done in every case. The following views must be taken
- Full body front and back with clothes (the back view can be taken by merely tilting the body, or can be completely avoided unless mandated by the presence of injuries on the back)
- Full body front and back without clothes
- Close up of face, clearly depicting the facial features (used for identification)

- Panoramic and close up view of all injuries present on the body
- Any other photograph that might be useful in a particular case.
- The photographs later on can be submitted with the autopsy report or can be preserved as part of Medicolegal records, to be produced whenever required by the Court of Law or the Investigating Officer.
- If available, X-ray imaging may be performed of the entire body in case of suspected bony injuries/ any other relevant cases in concept of Virtual Autopsy.

Examination of clothing:

- Clothes are an important part of examination and can many times provide important evidence regarding the case. However, it must be remembered that the clothes can have the deceased's body fluids and secretions attached to them. In every case, handling of clothes should be done assuming that they have the deceased's secretions and are highly infectious.
- The clothes should be removed by cutting them, taking care not to damage any part which may be having any cuts, marks or any biological fluid on them, which could be important evidences.
- The clothes should be examined after air drying them and then carefully laying them on the ground.
- The packing and handing over of the clothes should be done after ensuring that there are no wet patches or fresh stains of any kind on the clothes.
- The packing should be done in a paper envelope, which should be then sealed in a thick plastic envelope which needs to be sanitised by 1% sodium hypochlorite solution from outside before despatching.
- **External examination of body:** A detailed external examination should be done after examination of the clothing. During this procedure, the autopsy surgeon has to look for all possible external injuries and manifestations which could be present over the body in circumstances as alleged. Following should be mandatorily examined: Any abnormal discolouration, icterus/pallor/pigmentation, condition of all natural orifices, all visible injuries of any age all over the body, hidden injuries in concealed parts of the body like injuries inside oral cavity, behind ears, axilla, scrotum, digital webs etc., any deformity or disfiguration of any part of body, other external manifestations of clinical conditions like ascites/oedema/ surgical emphysema etc.

Sample preservation:

- Biological samples are highly contagious and dangerous to be sampled and preserved. In India till date, no Forensic Science Laboratory or Virology laboratory has been earmarked for biosafety level for examination of such contagious samples. Hence, it is advisable that no tissue or biological samples be preserved in such cases.
- In case of unidentified and unknown dead bodies, the facial and multiple body photographs, finger prints of both hands, bunch of scalp hair with the root by extraction by forceps including the hair bulb for DNA analysis; should be preserved for later identification.
- In case of post mortem which are conducted in small post mortem centers by non-forensic doctors, where he has confusion, he should consult the forensic doctors posted in dedicated nearby COVID-19 hospital mortuary and if needed, police officials can be directed to shift the body to the COVID-19- hospital mortuary.
- An appropriate log book of who is entering the autopsy room (HCW or any other staff) should be maintained as it is easier for tracing in case if required later.
- **Ethical Aspect for Medicolegal Autopsy:** Medicolegal Autopsy is a legal procedure conducted on request of police officers for the Justice delivery system. The body is in the custody of Police and no consent is required from relatives for conducting autopsy. All the ethical, legal and confidentiality aspects are already in place while conducting autopsy and same should be followed. While handing over the body the relatives may be counseled by the doctor regarding any apprehensions about the cremation/ burial of body.

Section V: Pathological Autopsy for research

Though these guidelines do not cover the aspect of Pathological Autopsy, the ethical concerns involved in Pathological Autopsy for research with COVID-19 samples that may be involved are as follows:

- Any research study should be conducted after the proper ethical clearance from respective Institute and as per the established Research guidelines of ICMR and other Health Authorities. The informed consent and other ethical aspects like confidentiality, religious sentiments etc. should be addressed as per the specific objectives and methodology of the study.
- The Doctors, Mortuary Technician and other Mortuary Staff in Mortuary performing autopsy are exposed to potentially high and dangerous health risks to organs fluid and secretions, even after taking the highest precautions. Hence, the pathological Autopsy requires a detailed deliberation, since in literature some special techniques have been devised for doing this autopsy.
- Institutional Research and Ethical Committee clearance should be obtained for the research work as per current National Ethical Guidelines for Biomedical and Health Research involving Human Participant (2017).
- Proper informed written consent should be obtained from the next of kin or the legal guardian of the decedent as per current National Ethical Guidelines for Biomedical and Health Research involving Human Participant (2017).
- The autopsy proceedings under such circumstances should be done by Pathologists in collaboration with treating doctor.
- Facilities of Department of Forensic Medicine/ Hospital Mortuary can be utilized for obtaining specimens of internal organs as per the interdepartmental working protocols in practice at the Institute.
- All the prescribed infection control measures for dealing with a dead body with COVID-19 infection should be followed.
- Tissue processing and storage facilities of different departments should be identified which can strictly adhere with safety guidelines for preventing the spread of COVID-19 infection control practices and as per the interdepartmental working protocols in practice at the Institute.

- Autopsy dissection procedure should be strictly limited to the scope of consent obtained and which is absolutely necessary for the research work concerned.
- For collection and storage of any biological material for research, adequate safeguards related to informed consent from Legally Authorized Representatives, ensuring protection of privacy and confidentiality; other cultural or religious sentiments should be taken care off. There should be clarity on the purpose and duration of sample storage and if the sample would be anonymized or linked to identified information.

Limited studies have been conducted on postmortem samples of patients who died due to COVID-19. The studies have indicated that lung tissue manifest significant pathology which includes alveolar exudative and interstitial inflammation, proliferation of alveolar epithelium and formation of hyaline membrane. Most of the pathological studies are in consensus with the clinical features and clinical course of the disease in general. But the disease also gives pathological damages to organs like heart, liver, kidney, brain, blood vessels and other organs. A dedicated core research group should be created comprising of specialists from Pathology, Microbiology, Biomedical research, Anatomy, Forensic Medicine and other interested clinical departments to assess the resources, feasibility, infrastructure assessment, identifying the research objectives, establishing the Biosafety laboratories and Ethical aspect.

Section VI: Embalming

Embalming of all the COVID-19 confirmed or suspected bodies should not be performed to avoid the risk of infections and relatives should be counseled to cremate/bury the body at the place of death itself. If embalming has to be done for unavoidable reasons, it should be done with minimal invasive techniques.

Section VII: Disinfection & sterilization of mortuary

The human Corona virus can remain on various surfaces for varying period of time, which can be as high as nine days. In experimental conditions, this virus has been found on various surfaces even beyond 72 hours. The following methods should be employed for the cleaning of the mortuary:

- The mortuary must be kept clean and properly ventilated at all times.
- Perform autopsies in an adequately ventilated room.
- Lighting must be adequate.
- Surfaces and instruments should be made of materials that can be easily disinfected and maintained between autopsies.
- Autopsy table, instruments, equipment and other materials used during autopsy must be disinfected using 1% Sodium Hypochlorite or 70% ethanol. Wherever possible, the surfaces should be washed first with soap and water before being cleaned with bleach or ethanol.
- The mortuary floor and surroundings should be disinfected by using 1% Sodium Hypochlorite solution; allow a contact time of 30 minutes, and then allow it to air dry. The solution should be freshly prepared and discarded after every four hours.
- Personnel who are doing the cleaning must be in complete PPE kit, without which the cleaning should not be undertaken.
- All the waste that is generated during autopsy, both biological as well as other (e.g. PPE kits) must be disposed of as per the hospital's waste disposal policy.
- **Procedure with 10% Sod. Hypochlorite solution:**
 - a. Take 1-part Sodium hypochlorite (10%) solution
 - b. Take 19 parts of tap water
- **Procedure with 4% Sod. Hypochlorite solution:**
 - a. Take 1-part Sodium hypochlorite (4%) solution
 - b. Take 7 parts of tap water

Ultraviolet ray disinfection lamps can further be used if available for 1 hour for irradiation disinfection after vacating the room.

Section VIII: Safe transportation of dead body of COVID-19 death

A. Transportation by road:

By road transportation is done through hearse vans having portable cold chamber where the temperature of the chamber is maintained at 4 to 8 degree Celsius. The duration of transport without embalming is safe up to 72 hours.

Body packing during transportation:

- The body should be tightly wrapped in plastic sheet and then packed in leak proof double body bag.
- The body bag should not be opened and no religious rituals should be performed in between or at the burial ground/ crematorium.
- The body handlers should wear complete PPE like coverall, N95 masks, gloves, shoe cover and head cover while loading and unloading the dead body.

B. Air transport of COVID-19 dead body:

In unavoidable circumstances, the Government may ask for safe embalming by higher Medical Centre.

C. Importation of COVID-19 dead body ¹⁰:

For transportation of dead body by air or in case of death of a person on-board, the standard operating protocol as described in the Standard Operating Protocol for Airport Health Officer can be followed.

Section IX: Handing over of Confirmed or Suspected COVID-19 dead bodies to the relatives

COVID-19 is a highly infectious disease. Its high infectivity and absence of any cure at present makes it a deadly disease. When all the legal formalities have been completed, the question that comes is whom and how to hand over the dead body. Due to its highly infective nature, it has been observed that many times the relatives of the deceased are in isolation/quarantine. So, getting them to receive the dead body and to perform the last rites can put them and other people at risk of acquiring the infection.

Death is a highly emotional event. The loss of near and dear ones is a highly stressful event for the family members. In such times, it becomes difficult to manage how the deceased's relatives will behave on receiving the dead body. At most of the places, there is legal limit to the number of people who can be present either in the mortuary or in the burial/cremation grounds. Keeping these situations in mind, the following guidelines have been prepared to ensure proper and dignified disposal of the dead.

- **If the COVID-19 test report is awaited, the dead body must not be released from the mortuary until the final report is received.**
- The dead body must be handed over to the district administration.
- The Medical Superintendent of the hospital must coordinate with CMO/District Collector for formation of task force that can oversee the whole process without causing undue delay.
- As soon as a patient is sick in the ward/ICU/emergency, or the autopsy is going to be started, the local administration should actively involve, so that if and when the need arises, the administration is ready with vehicles to transport the body, as well as having relatives of the deceased available nearby.
- At no time, more than two relatives must be present near the body and they must maintain a distance of at least 1 meter from the body.
- The dead body must be identified by the relatives through the plastic bag, without opening the bag, and it must be done in the presence of law enforcing agencies.
- The dead body must be taken to the burial/cremation ground in presence of law enforcing agencies, where not more than five relatives of the deceased should be allowed.

Section X: Legal responsibility of Unclaimed/Unknown dead bodies or if family members are not in position to collect the dead bodies of COVID-19 confirmed or suspected Deaths

Due to social stigma related to COVID-19 death, ill health or quarantining, the relatives may not be able to come forward to claim the body and receive the same for cremation. In many cases relatives may not be able to be present in person at the hospital due to their health condition, geographical or transportation barrier. Under such circumstances, dead body could be disposed off by the hospital authority in consultation with Police/ local administrative authorities after informing and taking consent from the relatives of the deceased. In case of unclaimed/ unknown dead bodies this can be done by the hospital authority in consultation with Police/ local administrative authorities.

Section XI: Precautions to be taken at crematorium / burial ground

- In case of large number of deaths, both incineration and burial are recommended methods for safe disposal of dead bodies. However, the Government's decision of incineration or burial may be taken in the best interest of public health at large.
- In case of burial upper surface should be cemented and earmarked.
- The body must be cremated in an electric crematorium, wherever possible, so that the movement and handling of the body are minimized.
- While handing over the body, relatives should be sensitized that the deceased was COVID-19 Confirmed or Suspected so that they can adhere to the safety precautions like wearing gloves, masks, gowns and cremate/ bury the body along with the zipped body bag, perform hand hygiene before and after handling the dead body.
- Viewing of the dead body may be done through the body bag itself. If the body bag is opaque, then the viewing can be done by unzipping the face end, ensuring that a minimum of one-meter distance is maintained between the deceased and the viewer.
- The relatives should also be counseled regarding avoidance of large gatherings at the crematorium/ burial ground as the number of people coming in contact with an

infected body should be limited in order to decrease more people getting direct contact.

- Religious rituals which requires touching the bodies should be avoided including acts such as bathing, kissing and hugging of the dead bodies.
- Religious rituals such as reading from religious scripts, sprinkling holy water and any other last rites that do not require touching of the body can be allowed.
- The ash does not pose any risk and can be collected to perform the last rites.
- The crematorium/burial staff should adhere to the safety precautions like wearing gloves, masks, gowns and health precautions like hand washing.

Section XII: Psychosocial support to family members in dealing with the COVID-19 death

Death is almost always associated with emotional turmoil, whether it is expected or sudden. Those who are bereaved, goes through a series of grief reactions, which according to Kubler-Ross (1969), follows five stages: denial, grief, anger, depression, and acceptance. Although these reactions are natural and help in the mourning process, it must be sensitively handled. Doctors managing patients with COVID-19 battling for life, are one of the most immediate witnesses of deaths. Especially, those from Forensic Medicine, are closely involved in management of dead bodies and the bereaving family members. Informing the family members or relatives about death of patient with COVID-19 and the management of their emotional reactions throughout the process, is often the prime responsibilities of the doctors and is often perceived to be a stressful experience. An understanding of the appropriate ways of handling the situation sensitively helps in performing the task effectively.

For simplification, the role and responsibilities performed by doctors in Forensic Medicine can be subdivided into two major categories where first is to be practiced while interacting with the family member of deceased COVID-19 patient and the second one is for the doctor himself.

1. Facilitating Grief Reactions:

It is essential to understand that many traumatic stress reactions are expressed through bodily gestures and emotions. For any doctor, witnessing a bereaving family member is the most

critical part of the management. It demands a need for a sensitized approach for which many professionals may feel unprepared or challenging. Some of the important ways of facilitating adaptive grief reactions are as follows:

- a. **Allow free flow of emotions:** It is crucial for the doctor to know that it is normal to experience emotional turmoil (example- feeling of sadness, anger, abandonment, anxiety, stress) in response to losing anyone, especially compounded due to the complications associated with COVID -19. Though witnessing a bereaved human can naturally incline an individual towards providing any form of support within reach. However, it is professionally advisable to refrain from doing so (without appropriately knowing the family context, their ways of responding to trauma or the severity of trauma). Maintain the psychological presence with the family. Allowing the uninterrupted expression of emotion is in itself an intervention, or a part of the human process to adjust to the new reality in life. Encourage them to talk about the patient's illness, and if they open up, try to explain the efforts taken to save him/her and the inevitable outcome. Moreover, the doctor can further reduce the need for initiating active intervention by explaining themselves that mourning to the grief is a gradual process and may take a lot of time and efforts for the family members. Letting an individual to actively engage in expression of trauma marks, the beginning of the mourning process and they must go on till a person gathers strength and courage to engage in the cremation process.

As a cautionary note, it may happen many times, that during an emotional upsurge, the family member can argue or blame the doctor or the treatment team. It is important to understand that it is a manifestation of the acute emotional turmoil they are going through currently and there is absolutely no need to provide any explanation for the same or engage in any further argumentation.

- b. **Facilitating acceptance of the reality:** As discussed in the previous point, its significant to process trauma, and denial or disbelief can block this process of adjustment. Thus, to facilitate acceptance of the death, doctor can arrange for viewing the body bag till face and let family members spend some time with it to sink in reality. Spending time with the body of a loved one who has died helps mourners truly and fully acknowledges the reality of death with all necessary and prescribed safety and precautions. It also provides a precious last chance to say goodbye “in person.”

The doctor should explain to family members about all the safety precautions while maintaining the full dignity of the deceased. The doctors need to emphasize that all religious rituals which requires touching of the dead bodies should be avoided including acts such as bathing, kissing and hugging.

- c. **Appoint a supportive family member to facilitate the recovery:** To facilitate recovery, doctor can designate a support person of the family (the one who appears to be most composed during the crisis) to provide necessary help and assistance to the family members throughout grief process. Further, grieving process usually involves holding funerals which is one of the most culturally acceptable ways of coping with grief. Since COVID-19 pandemic may deprive bereaved of this critical step, support person, or anyone more familiar with the technology can be suggested to hold tele-funerals such that family members feels a sense of comfort in virtual social connections.

As an immediate next step, the appropriate hospital staff should assist the relatives in completing the formalities like filling the forms or other details of deceased to obtain a death certificate. Precautionary steps which must be followed throughout the cremation process may be re-explained clearly. Furthermore, ensure smooth and timely handing over the body of deceased along with valuables and personal belongings.

2. Practicing Self-Care:

It is crucial for the clinician or staff especially in the event of COVID-19 related death, to be aware of the concept of vicarious trauma in professionals. Vicarious trauma refers to the experience of a clinician who develops a traumatic reaction, secondary to the client's traumatic experience. It can be manifested in multiple ways such as feelings of helplessness, lack of trust in others, social withdrawal, becoming easily emotionally upset, vague feelings towards people and events, loss of connectedness to others and the self, hyper vigilance and difficulty to experience joy and happiness. Also called as spillover effect, the experiences often build within the context of compassion fatigue created by the trauma of helping others in distress, which leads to a reduced capacity for empathy toward suffering in the future. Since, it has deleterious impact on the mental health of the doctor as well as their clinical practice, it is essential to deal with it by regularly engaging in self-care which includes:

- a. **Nourishing physical health:** engaging in activities which helps doctors to remain healthy and fuels them with enough energy to get through the day. This includes eating healthy at regular intervals, maintain sleep hygiene and going for walk.

- b.** Nourishing emotional health: As it is significant to maintain physical hygiene, so it is crucial to nourishing one's emotional health. This can be done by engaging in frequent ventilation of emotions with loved one/ trusted support person which includes addressing emotional pain and receiving support for the same. Engaging frequently in pleasurable activities which add richness and meaning to life further helps in ensuring emotional well-being.
- c.** Nourishing social health: Everyone has a need for connectedness and building meaningful social relationships. Finding some quality time for loved ones and people who are significant in one's life, nourishes the need for nurturance and belongingness.
- d.** Enhancing coping mechanisms: Doctors can actively invest in employing adaptive coping to stressful situations in their lives. Adaptive coping mechanisms involve confronting problems directly. For example, making reasonably realistic appraisals of problems, recognizing and changing unhealthy emotional reactions, employing problem-solving and positive reinterpretation strategies.

Section XIII: Conclusion

The Doctors, Mortuary Technicians and other Mortuary Staff in Mortuary performing autopsy are exposed to potentially high and dangerous health risks to organs fluid and secretions, even after taking the highest precautions. Hence the postmortem examination of Medicolegal cases should be conducted using Non invasive technique as described above which meet all the legal requirements for investigation of the case. It will prevent the spread of infection to Doctors, Mortuary staff, Police persons and all the people in chain of dead body disposal. Further, all the personnel associated with the care of the dead, from doctors to mortuary staff, to hearse van drivers and crematorium/burial ground staff should follow the precautions so that everyone can do their duty in good health.

Section XIV: Frequently Asked Questions

The draft of the Guidelines was put up for comments and suggestion on ICMR website for a period of one week. The suggestions received are included in main draft under the relevant heading. Some of the doubts are being clarified in the form of frequently asked questions as under:

1. What is to be done if zipped body bag is not available?

Ans: If zipped body bags as described are not available, the dead body can be wrapped in minimum of two layers of thick, leak-proof plastic sheets, secured with adhesive tapes.

2. What to be done when there is shortage of man power in shifting the dead body from ward to mortuary?

Ans: This is more of an administrative issue to be handled locally at the hospital administration level. There should be dedicated hospital staff (Multipurpose worker, Nursing Orderly etc.) for transfer of such bodies. In shortage of staff in Mortuary additional staff should be deputed for transportation of the body by hospital authorities. The help of NGO's and Social welfare department may also be taken to address such kind of manpower issue.

3. Is there any risk of infection to body handlers if COVID-19 and non-COVID bodies are kept in separate racks of same cold chamber having the same compressor?

Ans: The chances of contacting the infection is negligible if the proper precautions are taken like double bagging of body, handling the body with proper PPE, disinfection of the exterior of the bag and personal hygiene measures are properly followed.

4. How many days is the infectivity period of COVID-19 from a dead body?

Ans: The COVID-19 infection is a respiratory infection and mainly spread through aerosols. As per the available scientific literature till now, the survival of virus gradually decreases with time in a dead body but there is no specific time limit after to declare the body non infective. So, it is advisable to adopt the necessary precautions while handling the body and non-invasive autopsy technique.

5. What is waving-off of a medicolegal autopsy?

Ans: The waiving-off of medicolegal autopsy is more of a term which is used in day to day practice when the police hand over the body of a medicolegal case without autopsy to the relatives. Section 174 CrPC clearly states that the autopsy needs to be conducted if there is doubt after inquest regarding the cause of death. In cases where there is no such doubt, autopsy is not required. However, this discretion lies with the investigating officer, depending on his inquest findings. This provision of law can be used and it can be discussed with the investigating officer regarding the requirement of autopsy in a particular case. In case it is not essential and all the requirements of the autopsy are already fulfilled (e.g. patient of road traffic accident who was admitted in hospital and died during treatment, with complete hospital records), the investigating officer can hand over the body to relatives/administration (as the case may be) without getting the autopsy done.

6. What is the procedure of waving- off of a Medicolegal Autopsy and who is the competent authority?

Ans: The investigating officer can decide whether a medicolegal Medicolegal Autopsy has to be done or not on a dead body and is himself empowered to take a decision in this regard. But Law and order is state subject in Indian federal system. The exact procedure in practice and competent authority may be variable in different States and UTs. The concerned autopsy surgeon should be aware of the practice followed at state/district level and in case of any doubt may coordinate with senior police officers. The autopsy surgeon should take a proactive role in guiding and coordinating with police officers to reach a decision regarding handing over the body without autopsy.

7. If a COVID 19 confirmed/suspected case dies to any unnatural cause like poisoning, accident, burns, drowning etc., what procedure should be adopted? Whether internal dissection is required or not?

Ans: In such cases, the certification of death and issuance of Medical Certificate of Cause of Death (MCCD) should be done in coordination with police personnel and the body should be handed to relatives without internal dissection. In treated cases, hospital case records like lab investigation reports, report of other diagnostic tests

including imaging studies, treatment given etc. will give an additional documentary background for correlating with the investigation and to reach a reasonable conclusion about the cause of death and other related queries. Non-invasive autopsy technique as described in guidelines should be used, if at all required to prevent the risk of spreading the infection to Mortuary Staff, Police personnel and contamination of Mortuary surfaces.

If Autopsy surgeon feels that he will not be able to conclude cause of death or any other related issue without dissection, then he can proceed with minimal invasive / limited internal dissection. However, the dissection has to be performed keeping in mind that the conduction of autopsy is a high risk procedure which is potentially as hazardous as any other procedure performed on the body of a COVID-19 patient. Therefore, the following precautions must be taken while conducting the autopsy by adopting proper infection control measures as described below:

- All the staff who enters the autopsy hall, including the doctor and other mortuary staff, should be wearing the complete PPE set, including the N-95 mask, face shield, goggles, overall etc. Under no circumstances should autopsy be performed in the absence of proper and complete PPE
- The mortuary must have a separate donning and doffing area for the PPE.
- Sharp, pointed scissors should be avoided. Instead, round tipped scissors should be used.
- The organ dissection should be carried out in situ. Only those organs or organ systems should be removed from the bodies which need to be examined in detail to determine the cause of death.
- The respiratory tract (upper as well as lower) must not be removed from the body unless necessary. If they need to be removed, all efforts must be made to use minimum force for their removal and spillage of body fluid must be tried to be minimized.
- Skull should be opened using hand-saw/ chisel and hammer/ any other such equipment that is not going to generate aerosols. The oscillating bone saw should not be used.
- After the procedure, all wounds should be stitched and orifices must be plugged with cotton dipped in 1% Sodium Hypochlorite to prevent and discharges.

- Viscera or any other sample that are removed at the time of autopsy should be considered as infectious as the body from which they are removed. Hence, minimum amount of sample should be removed from the body.

8. How can cause of death be opined in suspected poisoning cases which are brought dead without preserving viscera?

Ans: The cause of death can be opined based on circumstantial evidences like scene of crime photos, presence of suspicious containers/packets, statements of witnesses and police officials along with external examination of the body showing suggestive features of poisoning. The Autopsy surgeons, Investigating Officers and the supervising senior police officers must have a very clear concept that investigation and legal course of death due to poisoning is not solely based in a positive viscera report. A negative viscera report also does not rule out death due to poisoning as the viscera tests has a lot of limitations and restricted to very few common poisons. As per judgments of Honorable Supreme court and the cause of death can be concluded as due to poisoning depending Medical records, circumstantial evidences and after ruling out other cause/manner of death .¹⁶

9. Is there any dedicated Forensic Science Laboratory for handling samples from COVID-19 cases?

Ans: No CFSL/FSL at National or State level has been specifically designated to handle samples from COVID-19 cases. Few State FSLs have issued SOP's at regional level to handling and submission of these samples.

10. If the Investigating Officer insists on preservation of viscera for Chemical analysis, what is to be done?

Ans: If Chemical analysis is mandatory for the fulfillment of investigation, the autopsy surgeon can go for percutaneous collection of femoral blood, urine and Vitreous samples (if indicated). COVID 19 infective status should be labeled over the Specimen. Still if viscera preservation is still required it may be conducted using the precautions mentioned at point no 7.

11. What precautions should be taken while handling/packing/handling over the biological samples?

Ans: The primary container containing sample should be placed into a larger secondary container. Both containers should be having leak proof, air tight caps. The secondary container should then be placed into a re-sealable plastic bag. The plastic bag should then be placed into a biological specimen bag with absorbent material, after which it can be transferred outside of the autopsy room for handing over to the IO. During the entire procedure, the doctor and helping staff should wear PPE.

12. In a Non Invasive Autopsy, how to opine about time since death?

Ans: Estimation of Postmortem Interval (PI) or Time since Death (TSD) is mostly given on the basis of various external post-mortem changes along with circumstantial evidences like hospital records, time of last seen alive, CCTV footages and statement of eye witness after confirming their reliability. The same procedure can still be followed.

13. How to determine and opine the cause of death in sudden death/brought dead cases by Non Invasive Autopsy?

Ans: With a detailed external examination, considering all circumstantial evidences furnished by Police after their preliminary investigation, statements of relatives, perusal of available medical records, the doctor can rule out involvement of any unnatural elements like suicide, homicide or accident in vast majority of cases. Instead of opining the exact cause of death which may not be possible in every case, the concept of exclusion diagnosis should be applied.

A suggested model opinion in cases:

“Considering the Autopsy findings, police investigation findings, statements of relatives, other circumstantial evidences and ruling out of external injuries, I am of the considered opinion that death in this case could be due to a natural cause. A subsequent opinion may be obtained by the IO if needed in view of further investigative/circumstantial findings.”

14. What is the protocol to do autopsy in a COVID-19 suspected dead body with Negative RT-PCR result?

Ans: Considering the relatively high rate of false negative results of COVID-19 RT-PCR, every case still has to be considered as a possible COVID-19 case. Thus, it is advisable to follow Non-Invasive Autopsy in these cases throughout the duration of pandemic.

15. Can Invasive autopsy be performed after disinfecting the body surface using 1% hypochlorite or 70% alcohol solution?

Ans: Source of infection from a COVID-19 Confirmed case is mainly from aerosol generating procedure from internal body fluids and visceral organs. Even mucosal surfaces, such as those in nasal and oral cavities, gases or fluids expelled through natural orifices as a result of compression of cavities which can occur during transport, can be sources of disease transmission. Hence, surface disinfection does not provide protection against COVID-19 during autopsy.

16. What is the advisable procedure for conducting an autopsy in which foreign body is suspected to be inside the body (like a firearm bullet)?

Ans: Pre-autopsy radiological evaluation of the body should be conducted in these cases to locate the foreign body. After discussion with the IO if actual extraction is not needed for investigation, the extraction may be avoided and the same should be recorded in the Autopsy report. If the legal issue behind the case strongly warrants extraction, the foreign body should be retrieved with minimum possible exposure by using limited dissection techniques confined to affected body region/cavity and with all prescribed personal protection measures mentioned at point no 7.

17. Is Non Invasive approach and limited dissection justifiable where the medico-legal issues related to the case require a mandatory internal examination?

Ans: Yes. In Indian legal scenario, there is no pre-defined legal description/notion on the extent of dissection required for a medicolegal autopsy. It is up to the discretion of the autopsy surgeon for satisfying the fulfillment of investigation. All infection control measures should be strictly followed during and after the procedure.

18. What procedure should be adopted regarding identity of an Unidentified/Unknown dead body in non-invasive Autopsy technique?

Ans: Details of clothing and other belongings should be properly recorded and article may be handed over to IO for identification purpose. The facial and multiple body photographs and finger prints of both hands may be taken. A bunch of scalp hairs including hair bulb by combing or by extraction by forceps should be taken and preserved for DNA analysis. If X-ray facility is available, whole body X-ray can be taken and looked for characteristics of age, sex and stature and specific unique individual characteristics.

19. What additional precautions can be taken in the Mortuary during COVID-19 pandemic?

Ans:

A) For Police Personnel

- All the police persons coming to the mortuary should be advised to wear mask strictly follow social distancing
- No more than one relative should accompany them inside the mortuary.
- The IOs of different cases should avoid clustering while doing the paperwork inside the mortuary premises.
- As far as possible only one Police person should remain inside the mortuary at a time.

B) For General Public

- All General public coming to the mortuary should be allowed only after wearing the masks and strictly follow social distancing (to maintain 1 meter distance between each other) while inside the mortuary premises.
- Entry of large groups while accompanying the dead body of a relative and clustering inside the mortuary premises to be prevented.
- Only one person should enter for any enquiry or accompany the police personnel.

C) For Departmental Staff

- All the Staff members working in Mortuary are strictly directed to wear masks and strictly follow social distancing.
- They should not cluster in their free times and maintain the basic hygiene for prevention of spread of infection.

- Any Staff member not feeling well and having the symptoms of COVID-19 should not attend the duty and report to concerned screening area in Hospital.

D) Infrastructure

- The exhaust from these autopsy rooms should be directed outdoors, away from windows, doors, areas of human interaction or gathering spaces, and from other building's air intake systems.
- PPE should be available for the doctor and mortuary attendants.
- Multiple portable air recirculation unit/ air purifiers may be placed for reduction in aerosols.
- Minimum staff should enter the autopsy hall.

20. How to utilize the concept of verbal autopsy in a medico-legal case?

Ans: The detailed questionnaire furnished by WHO for verbal autopsy can be utilized for taking history from relatives or friends as a check list for evaluating history related to the most probable causes of death. The questionnaire can be modified as per the requirement of the case concerned.

21. How the concept of virtual autopsy can be incorporated with medicolegal autopsies in the current pandemic?

Ans: Virtual autopsy concept is based on utilization of postmortem cross sectional imaging like Computed Tomography to evaluate the internal findings in a dead body to avoid unnecessary dissections. The non-invasive technique as described in guidelines is part of virtual autopsy procedure adopted in International Scenario. Postmortem X ray examination can be done if possible cases to obtain further evidentiary internal findings which may help in formulating a more focused opinion as to the cause of death. The virtual autopsy concept is the need of the hour in current scenario.

22. How to dispose biological waste generated at mortuaries?

Ans: The waste disposal can be done in adherence with the standards prescribed for COVID-19 isolation wards in guidelines for handling, treatment and disposal of biomedical waste generated during treatment, diagnosis or quarantine for COVID-19

patients published by Central Pollution Control Board. The waste disposal should be coordinated with sanitation department of Hospital.

23. What is the ideal depth of burial of dead body?

Ans; As per available literature and reports, the burial is being done at a depth of Six to Eight feet.

24. If a Medical Officer/Forensic Medicine specialist at a remote or peripheral setup is in doubt regarding handling /Autopsy of COVID-19 Confirmed/ Suspected body?

Ans: One nearby District Hospital/Medical College/ higher center having the Department of Forensic Medicine should be designated for all medicolegal consultations regarding handling/Autopsy/Transportation/disposal of COVID-19 Confirmed/ Suspected bodies. These issues can be discussed online or by telephonic conversation and the body shifting should be avoided.

25. How to comment on pattern and age of injuries during Non-invasive autopsy?

Ans: In most of the case, pattern and age of injuries can be determined by external examination itself. Treatment records and other ancillary investigations/ imaging reports can also be utilized. Postmortem X ray examination can be conducted if useful. If the merit of the case warrants further exploration of injury, the same may be done strictly following the measures mentioned in point.7.

26.Regarding preservation of dead bodies due to COVID 19 which changes can be implemented in the current practices with no separate storage facility?

Ans: Using separate cold chambers/ cabinets for COVID 19 confirmed or suspected cases are advisable. At places where this is not possible due to lack of adequate facilities, the existing cold storage should be demarcated with separate storage chambers/bays/trays for COVID-19 bodies. Immediate procurement of cold chambers or cabinets on emergency basis should be tried.

27. During autopsy or while handling the dead body, what should be done if anyone get accidental occupational exposure with body fluids/ tissues of a COVID 19 patient?

Ans: Immediately after coming in contact with any such potential infective material, the entire exposed area should be washed with soap and water with minimum contact time of 20 seconds. This should be followed by application of 70% alcohol based disinfectant. The exposed clothes/ articles should be disposed off according to the established practices. The matter should be reported to the hospital administration to evaluate the necessary steps accordingly.

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Suggested by:

The Research Group on Operational research under The National Task force on COVID-19

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Guidelines for Dental Professionals in Covid-19 pandemic situation

Issued on 19/05/2020

Prelude/ Background

In the current COVID 19 pandemic, Dentists, auxiliaries as well as patients undergoing dental procedures are at high risk of cross-infection. Most dental procedures require close contact with the patient's oral cavity, saliva, blood, and respiratory tract secretions. Saliva is rich in COVID 19 viral load. Many patients who are asymptomatic may be carriers. For this reason, it is suggested that all patients visiting a dental office must be treated with due precautions.

Several guidelines have been issued earlier by DCI, IDA and other organizations and hence there is a need to issue unified guidelines .

These guidelines address dental services in the country, and cover :

- Health care workers who are required to attend dental ailments in remote locations in the government sector.
- Dental Surgeons working in PHC/ small towns and different locations.
- Dental Surgeons working in government and private hospitals set up.
- Dental surgeons working in cities with solo or multi-speciality practices.

Zones and Dental Clinics

1. The dental clinics will remain closed in the **CONTAINMENT ZONE**; however, they can continue to provide tele triage. Patients in this zone can seek ambulance services to travel to the nearby COVID Dental Facility.
2. In the **RED ZONE**, Emergency dental procedures can be performed.
3. The dental clinics in **ORANGE AND GREEN ZONE** will function to provide dental consults. Dental operations should be restricted to **Emergency** and **Urgent** treatment procedures only.
4. All routine and elective dental procedures should be deferred for a later review until new policy/guidelines are issued.
5. Due to the high risk associated with the examination of the oral cavity, oral cancer screening under National Cancer Screening program should be deferred until new policy/guidelines are issued.

List of Emergency and Urgent Dental Procedures

The clinical conditions of dental origin, which require priority care but do not increase the patient's death risk are categorised as URGENT and which increase the patient's death risk are categorised as EMERGENCY (Table 1).

Table 1: Dental Procedures for asymptomatic for COVID

	Clinical condition/ Procedures	Risk Level	
Emergency Dental Procedures	Fast spreading infections of facial spaces/Ludwig Angina/Acute cellulitis of dental origin/Acute Trismus. Should connect with hospital settings emergency settings immediately.	Very high	
	Uncontrolled bleeding of dental origin. Should connect with hospital settings emergency settings to rule out other causes.	Very high	
	Severe uncontrolled dental pain, not responding to routine measures.	High	
	Trauma involving the face or facial bones.	Very High	
	Radiographs like PNS, OPG, CBCT in facial trauma and in medico-legal situations	High	
	Children and adolescents		
Urgent / Procedures	Acute Pulpitis	High	
	Dental abscess	Very High	
	Dentoalveolar trauma	High	
	Pain of cavitation needing temporisation	High	
	Unavoidable Dental Extractions	Very High	
	Orthodontic procedures (see the section on adults)	Moderate	
		Adults and Geriatric	
	Dental pain of pulpal origin not controlled by Advice, Analgesics, Antibiotics (AAA)	High	
	Acute dental abscess of pulpal / periodontal/ endo-perio origin/ Vertical split of teeth	High	
	Completion of ongoing root canal treatment (RCT)	High	
	Temporization of cavitation in teeth which are approximating pulp but do not need pulp therapy	High	
	Broken restoration/ fixed prosthesis causing sensitivity of vital teeth/ endangering to pulpitis /significant difficulty in mastication	High	
	Unavoidable Dental Extractions / Post extraction complications	Very High	
	Already prepared teeth/ implant abutments to receive crowns	High	
	Peri-implant infections endangering stability	High	
	Pericoronitis / Operculectomy	High/Moderate	
	Oral mucosal lesions requiring biopsy	High	
	Long-standing cysts and tumours of the jaw with abrupt changes	High	
	Sharp teeth /Trigeminal neuralgia	Moderate	
Orthodontic wire or appliances, piercing or impinging on the oral mucosa.	Moderate		
Orthodontic treatment causing iatrogenic effects	Moderate		
Delivery of clear aligners	Moderate		
Patients on skeletal anchorage	Moderate		

	Repair of Broken complete dentures	High
	Implant prosthesis related issues	High
	Oral mucosal infections such as candidiasis	High
	Oral mucosal lesions showing sudden changes or suspicion of causing severe problems,/ oral cancer requiring biopsy	High
	Patients with medical conditions	
	Diabetes patients requiring treatment for periodontal conditions	High
	Dental treatment for patients requiring cardiac surgery	Very high
	Hospitalised patients requiring dental care for acute problems	Very high
	Patients requiring dental treatment for radiotherapy /oragn transplantation	Very high

Urgent procedures should be undertaken only after teleconsultation, tele-triage, consent, and through pre-fixed appointment only

Also, see suggested modifications required for a clinic set up

Modifications required for a dental Clinic setup

The dental operatories should gear themselves for readiness- Preparatory Phase(I), Implementation Phase(II) and Follow up (III)

Phase I:Preparatory phase for a dental clinic

Doctor and health care prophylaxis against COVID 19.

Testing for the Covid-19 before resuming work in the clinics:

Health care workers who are asymptomatic and do not fall under the category of being exposed to corona virus infection are not required to undergo a test before resuming to work in the

clinics.https://www.icmr.gov.in/pdf/covid/strategy/Strategy_for_COVID19_Test_v4_09042020.pdf

Hydroxychloroquine Prophylaxis

As per the advisory given by the MOHFW dated 22.03.2020, all asymptomatic healthcare workers involved in the care of suspected or confirmed cases of COVID-19 are advised to take HCQ prophylaxis after medical consultation. For further details:-

<https://www.mohfw.gov.in/pdf/AdvisoryontheuseofHydroxychloroquinasprophylaxisforSARSCoV2infection.pdf>,https://www.icmr.gov.in/pdf/covid/techdoc/HCO_Recommendation_22March_final_MM_V2.pdf, You may also like to watch video on the same subject on [Covid.aaiims.edu](https://www.aaiims.edu)

Dental Clinic

Ventilation and air quality management in stand-alone dental clinics

- I. Maintain air circulation with natural air through a frequent opening of windows and using an independent exhaust blower to extract the room air into the atmosphere.
- II. Avoid the use of a ceiling fan while performing procedure.
- III. Place a table fan behind the operator and let the airflow towards the patient. A strong exhaust fan to be so located to create a unidirectional flow of air away from the patient.
- IV. The window air condition system/ split AC should be frequently serviced, and filters cleaned.
- V. Use of indoor portable air cleaning system equipped with HEPA filter and UV light may be used.

In central AC buildings, on-recirculatory system: Blocking off the return air vents in the patient area will temporarily stop air circulation provided AHU will have provision to receive adequate outdoor air supply. Allow fresh air into rooms by opening of windows or doors slightly.

(https://mes.gov.in/sites/default/files/COVID%2019%20GUIDELINES%20FOR%20OPERATION%20OF%20AIR%20CONDITIONING%20VENTILATION%20SYSTEM%20DT%2028%20APR%202020_1.pdf)

Clinic entrance, reception and waiting

Display visual alerts at the entrance of the facility and in strategic areas (e.g., waiting areas or elevators) about respiratory hygiene, cough etiquette, social distancing and disposal of contaminated items in trash cans.

Install glass or plastic barrier at the reception desk, preferably with a two-way speaker system.

Ensure availability of sufficient three-layer masks and sanitisers and paper tissue at the registration desk, as well as nearby hand hygiene stations.

Distant waiting chairs, preferably a meter apart.

All areas to be free of all fomite such as magazines, toys, TV remotes or similar articles.

Cashless/contactless payment methods are preferred.

A bin with lid should be available at triage where patients can discard used paper tissues.

Changing Room

Changing room to be available for staff and all workers to wear surgical top and pyjama and clinic shoes

Dedicated area for donning and doffing of PPE.

Dedicated area for sterilisation

A dedicated and trained person should be available to undertake Transport, Cleaning, Drying, Packing, Sterilisation, Storage and Testing the quality of sterilisation as per the standard guidelines and manufacturer's instructions.

Sufficient and dedicated space for storage of additional items of PPE and sterilisation and disinfection instruments and chemicals must be ensured.

Washrooms

[Sensor taps or taps with elbow handles](#)

[Do not use towels, Paper towels are preferred](#)

Equipment and instrumentation

- I. Fumigation systems
- II. High volume extra oral suction
- III. The indoor air cleaning system
- IV. The dental chair water lines should be equipped with ant retraction valves n valves
- V. Used hand pieces with anti-retraction valves only
- VI. Chemicals required for disinfection
- VII. Appropriate PPE and ensure it is accessible to HCW.

VIII. Maintain a supply of all consumables related to PPE, Sterilisation and Disinfection

Training of Healthcare Workers (HCWs)

- I. Train administrative personnel working in the reception of patients on hand hygiene, social distancing, use of facemask, for them and incoming patients.
- II. Educate all HCW on proper selection and use of PPE. They may require psychological support and morale-boosting to maintain their level of confidence and strict adherence of guidelines.
- III. Staff should rotate more frequently, preferably, should avoid long working hours, should ensure proper nutrition and sleep.
- IV. All staff and dentist must use surgical attire in the dental office, and all personal clothing should be avoided.

(<https://www.cdc.gov/oralhealth/infectioncontrol/summary-infection-prevention-practices/standard-precautions.html>)

Hand hygiene:

As per the WHO guidelines :

https://www.who.int/gpsc/5may/Hand_Hygiene_Why_How_and_When_Brochure.pdf

Donning and Doffing of PPE:

- a. <https://www.cdc.gov/coronavirus/2019-ncov/hcp/using-ppe.html>
- b. <https://covid.aiims.edu/personal-protective-equipment-covid-19-preparedness/>

Use of N -95 masks/Guidelines for extended use link:

- a. <https://www.cdc.gov/niosh/topics/hcwcontrols/recommendedguidanceextuse.html>
- b. <https://covid.aiims.edu/using-personal-protection-n95-masks-given-to-health-care-workers-at-aiims/>

Standard Precautions:<https://www.cdc.gov/oralhealth/infectioncontrol/summary-infection-prevention-practices/standard-precautions.html>

Disinfection of Dental Clinic

COVID-19 virus can potentially survive in the environment for several hours/days. Premises and areas potentially contaminated with the virus to be cleaned before their re-use. Remove the majority of bioburden, and disinfect equipment and environmental surfaces.

Environment and Surface Disinfection:

Floors: 2 Step Cleaning Procedure (Detergent and freshly prepared 1% sodium hypochlorite with a contact time of 10 minutes. Mop the floor starting at the far corner of the room and work towards the door. Frequency: after any patient/ major splash or two hourly.

Rest of the surfaces: Freshly prepared 1% sodium hypochlorite (Contact Time: 10 minutes). Damp dusting should be done in straight lines that overlap one another. Frequency: before starting daily work, after every procedure and after finishing daily work.

Delicate Electronic equipment Should be wiped with alcohol-based rub/spirit (60-90% alcohol) swab before each patient contact.

Phase II Implementation Phase

Tele-consult Tele-screening

- I. Telephone screening is encouraged as the first point of contact between the patient and the dentist or reception office is encouraged.
- II. Current medical history and past history particularly pertaining to symptoms of Severe Acute Respiratory Illness (fever AND cough and/or shortness of breath) or All symptomatic ILI (fever, cough, sore throat, runny nose) must be analysed .
- III. Any positive responses to either of the questions should raise concern, and care should be postponed for 3weeks except in dental emergencies.
- IV. Encourage all to download the Arogya Setu App.

Dental history and remote TRIAGE

- I. Obtain m Oral Health(Mobile Phone-based Oral Health) screening about dental history and try to manage problems with advice and analgesics and local measures.
- II. Clinics can evolve a web-based form which can also include a consent form.
- III. Comprehend dental treatment according to the urgency of the required treatment and the risk and benefit associated with each treatment.
- IV. Only pre-appointed patients should be entertained in the clinic whose history, problems and procedures are already identified to some extent through previous telephone and remote electronic or web-based systems.

What can patients do before arrival at a dental clinic?

- I. Minimise or eliminate wearing a wrist watch, hand and body jewellery and carrying of additional accessories bags etc .
- II. Use their own wash rooms at home to avoid the need of using toilets at the dental facility.
- III. Have a mouth wash rinse with 10 ml of the 0.5% solution of PVP-I solution (standard aqueous PVP-I antiseptic solution based mouthwash diluted 1 :20 with water) . Distribute throughout the oral cavity for 30 seconds and then gently gargle at the back of the throat for another 30 seconds before spitting out.
- IV. Wear a facemask during transport and before entering the premises.
- V. Have the body temperature checked and use a sanitiser on the entrance.
- VI. Patients consent and declaration to be obtained in a physical print out or electronic system.
- VII. Maintain social distance.

Protocols of patient handling in the clinic area

For appointments that do not result in aerosols, and need examination only wear a triple layer surgical mask and protective eyewear/face shield and gloves.

Wear N95 face masks, protective eyewear/face shields and gloves along with coverall for High Risk and very high-risk procedures. To increase the shelf life of N95 masks, you may cover them with a surgical mask and discard only the surgical mask after use.

When examining patients with moderate risks the treating doctor will require all PPE as high risk except that the coveralls can be substituted with surgical gowns.

Practice non-aerosol generating procedures.

Use of rubber dam is encouraged.

The 4-handed technique is beneficial for controlling the infection.

Patient discharge protocol

- I. The patient drape will be removed by the assistant, and the patient is asked to perform hand wash and guided out of the clinic towards reception and handed back his foot wears and belongings.
- II. The procedures and prescription is recorded only after doffing the PPE.
- III. Patient to perform hand hygiene and to be provided with review /follow up instructions.

Patient turn around and disinfection protocol

- I. After the patient leaves the treatment room, the Assistant will collect all hand instruments immediately, rinse them in running water to remove organic matter and as per standard sterilisation protocol.
- II. All 3 in 1 syringe, water outlets, hand piece water pipelines, etc. should be flushed with the disinfectant solution for 30-40 seconds.
- III. Remove water containers and wash them thoroughly and disinfect with 1% sodium hypochlorite using clean cotton/ gauge piece and then fill with fresh 0.01% sodium hypochlorite solution and attach back to the dental chair.
- IV. Then, disinfect the Dental Chair along with all the auxiliary parts within 3 feet of distance using 1% sodium hypochlorite and clean and sterilised cotton/gauge piece using inner to outer surface approach and leave for drying. New cotton/ gauge piece should be used for every surface. The areas include:
 - a. Patient sitting area and armrests
 - b. Dental chair extensions including water outlets, suction pipe, hand piece connector, 3 in 1 syringe, etc.
 - c. Dental light and handle
 - d. Hand washing area – slab and tap nozzle
 - e. Clinic walls around the dental chair and switchboards
 - f. Hand washing area – slab and tap nozzle
- V. Hand pieces should be cleaned using a hand piece cleaning solution to remove debris, followed by packing in the autoclave pouches for autoclaving. Record to be maintained for the same.
- VI. IMPRESSIONS will be thoroughly disinfected before pouring or sending to the laboratory using an appropriate disinfectant.

- VII.** Remove visible pollutants completely before disinfection. Mop the floor with 1% sodium hypochlorite solution through separate mops for the clinical area following unidirectional mopping technique from inner to outer area. Wash and disinfect the mop with clean water and 1% sodium hypochlorite and leave it for sun-drying.

Biomedical waste management

Biomedical waste management area is to be equipped with required bins as per Government of India guidelines. (<https://www.cpcb.nic.in/uploads/Projects/Bio-Medical-Waste/BMW-GUIDELINES-COVID.pdf>)

Protocol for clinic closure

Fogging: It is used as '**No-touch surface disinfection**' and **not for disinfection of air** after a large area has been contaminated. The commercially available hydrogen peroxide is 11% (w/v) solution which is stabilized by 0.01% of silver nitrate. A 20% working solution should be prepared. The volume of working solution required for fogging is approximately 1000ml per 1000 cubic feet. After the procedure has been completed in the operatory (in case of no negative pressure), exit the room and close the operatory for half hour for the aerosols/droplets to settle down. Perform the 2 Step surface cleaning followed by fogging. The fogging time is usually 45min followed by contact time/dwell time of one hour. After that the room can be opened, fans can be switched on for aeration. Wet surfaces can be dried/cleaned by using a sterile cloth or clean cloth (other surfaces).

Protocol for health care workers on reaching home

On the way back home, follow all precautions and on return, follow the removal of shoes, change of clothes, having a wash and disinfect your mobile wristwatch etc.

Phase III Patient follow-up and Review

The patient should be contacted telephonically 24 hrs and in a week' time to know if he has developed any symptoms that should warn the dental Staff to undertake appropriate actions. He should be advised to inform back to the dental clinic should there be any adverse symptoms.

Health care workers who are required to attend dental ailments in remote locations in the government sector should provide advice and analgesics and refer the patient to dental surgeon for further management.

These are dynamic guidelines and will be updated from time to time, as required .

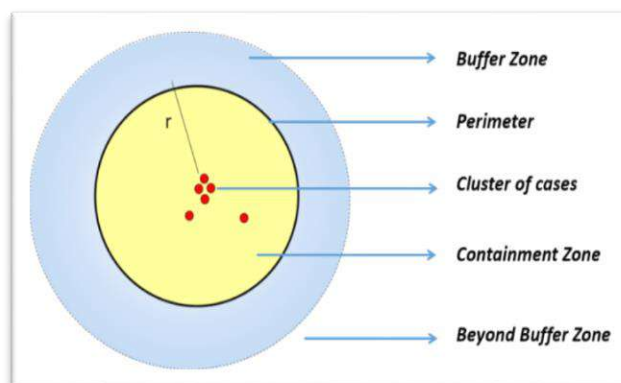
Immunization Services during and post COVID-19 Outbreak

Immunization is an essential component of health services and needs to be continued to protect children and pregnant mothers from Vaccine Preventable Diseases (VPDs).

Current Situation and Guidelines

India is currently undergoing extended lockdown phase; however as per **MHA order dated 15th April 2020**¹, all health services are deemed essential and need to be functional across the country.

- Based on the existing COVID-19 situation, District/Sub-Division/Municipal Corporation/Ward/any other appropriate administrative unit is categorized into Red, Orange zones with active COVID-19 cases and Green zones with no active COVID-19 cases and the list is revised on a weekly basis or earlier.
- Areas where COVID-19 cases are reported and surrounding areas with risk of COVID-19 spread are classified as 'Containment Zone' and 'Buffer Zone' respectively while area outside the buffer zone is identified as 'Area beyond Buffer Zone'
- The categorization of 'Containment Zone' and 'Buffer Zone' is a dynamic process updated on a weekly basis or earlier.



MoHFW (vide letter dated 14th April 2020) also issued a 'Guidance Note'² on continuation of essential services including immunization.

Immunization Services in different Zones

In alignment with the area categorization, immunization services will be classified under two heads:

1. **Immunization in Containment & Buffer zone**
2. **Immunization in areas Beyond Buffer Zone and Green Zone**

As a standard practice, Immunization services are delivered through the following modes:

1. **Birth dose vaccination:** Birth dose vaccinations at delivery points in health facilities.
2. **Health Facility based sessions:** Immunization sessions at fixed health facilities like DH, CHC, PHC, SC etc.

¹https://www.mha.gov.in/sites/default/files/MHA%20order%20dt%2015.04.2020%2C%20with%20Revised%20Consolidated%20Guidelines_compressed%20%283%29.pdf

²<https://www.mohfw.gov.in/pdf/EssentialservicesduringCOVID19updated0411201.pdf>

3. Outreach sessions: As part of Urban/Village Health Sanitation and Nutrition Days (UHSND/VHSND) services.

In the context of COVID-19 outbreak, delivery of immunizations services for different zones will follow three key principles irrespective of zone:

1. Guidelines from MHA and MoHFW pertaining to COVID-19 and related updates will be the primary reference points and no state should violate any COVID-19 guidance.
2. Practices of social distancing, hand washing, and respiratory hygiene need to be maintained at all immunization sessions irrespective of zones/district categorization by all (i.e. beneficiaries and service providers) in all sessions.
3. **Birth dose vaccination at health facilities would continue irrespective of zones.**

The following strategy will be adopted for immunization as per various zones

Immunization services	Containment & Buffer zone	Areas Beyond Buffer Zone and Green Zone
Health Facility based session	X*	✓
Outreach session	X	✓**

* Immunization services only on demand to walk-in beneficiaries in facility.

**Modified outreach (VHND and UHSND) in areas beyond buffer zone.

1. Immunization Services in Containment & Buffer zone

Containment & Buffer zone		
Birth Dose	Health Facility based Session	Outreach Session
Continued	No*	No

* Immunization services only on demand to walk-in beneficiaries in facility

- No active mobilization to the health facility be carried out.
- Every opportunity is to be utilized for vaccinating beneficiaries if they have already reported at the facilities.
- Ensure social distancing and hand washing etc as outlined in the annexure, to be adopted at health facility level for vaccinating the pregnant women and children who have reported to these facilities.

The list of areas under 'Containment zone' and 'Buffer zone' in a district is updated on weekly basis. Any area exiting a 'containment/ buffer zone' can start facility based and outreach immunization activities as in areas 'beyond buffer zone' **after a minimum gap of 14 days**

following delisting of that area as Containment/Buffer zone. However, the State and District administration should make a local assessment of COVID-19 risk before starting the outreach or health facility-based immunization with mobilization of beneficiaries. Similarly, an area enlisted as a ‘containment/ buffer zone’ should stop health facility-based sessions and outreach sessions.

2. Areas Beyond Buffer Zone and Green Zone

- All areas Beyond Buffer Zone and in Green Zone follow the same guidelines

Areas Beyond Buffer Zone and Green Zone		
Birth Dose	Health Facility based Session	Outreach Session
Continued	Yes	Yes*

*Modified outreach (VHND and UHSND) in areas beyond buffer zone.

Modified Outreach Session

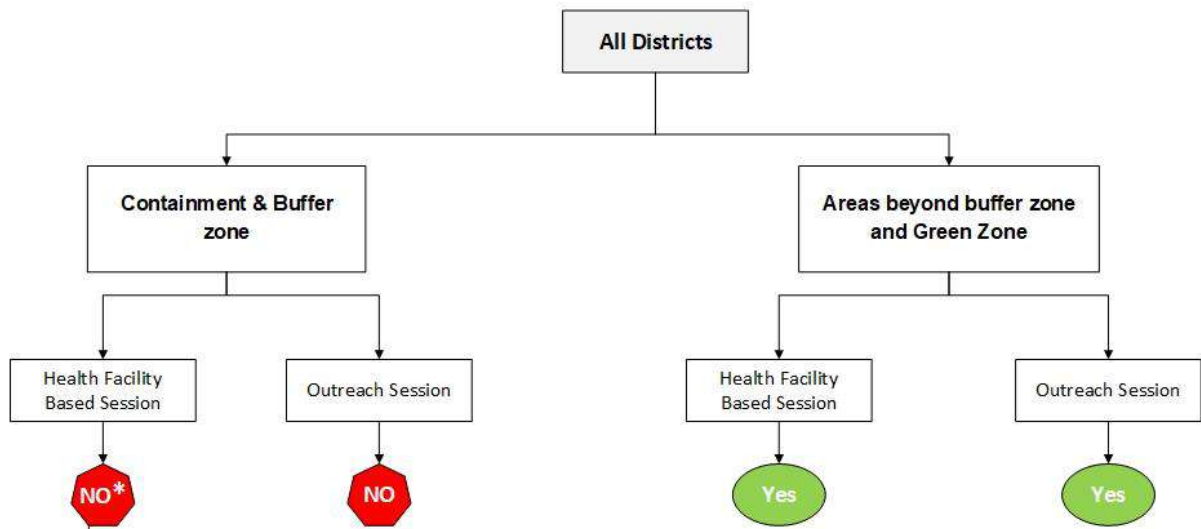
- One outreach session will be planned for <500 population to limit the total beneficiaries to 10 to 15/session. A staggered approach will be followed for each session to avoid crowding.
- At any a given time during session, not more than 5 persons should be present at a session site with at least 1-meter distance between each.
- The organization of such session will be at the discretion of district administration with clear planning for social distancing and handwashing at session site.
- Various approaches outlined in the annexure need to be adopted while organizing a session for the prevention and control of COVID-19.

Standard Guidelines for all Outreach Sessions irrespective of zones

- Universal prevention and control principles for COVID-19 to be followed for each session
- All outreach sessions to follow staggered approach as outlined in the annexure and community mobilization strategy to be adapted accordingly to prevent overcrowding at session site.
- Pre-identification of session site with adequate seating space for beneficiaries and caregivers while maintaining social distancing (at least 1-meter gap) with clear area of demarcation for incoming beneficiaries, post vaccination waiting area and a reserve zone if gathering increases

- Support from Panchayat/Urban Local Body to be sought for identification of appropriate session site with adequate space to practice social distancing (at least 1 meter).
- Various 'session' approaches in line with the flow diagram outlined below is to be adopted in all districts for immunization services.

Immunization Services during and post COVID-19 Outbreak



* However, every opportunity is to be utilized for vaccinating beneficiaries if they have already reported at facilities

Birth dose vaccination at health facilities continues across the country irrespective of district category

Annexure

Immunization at Health Facilities and organizing a VHSND/UHSND/outreach RI session

A. Immunization services at Birth (at Labor room or Post-natal ward):

- Birth dose vaccination should be continued at all health facilities with delivery points after ensuring due cold chain.

B. Immunization services at Health Facility

A health facility should continue immunization services with below mentioned prerequisite arrangements:

- Pre-identification of a well-ventilated seating area with demarcated seating location 1 meter apart.
- An adequate number of pre-identified, fixed vaccination staff depending on the injection load and the required documentation.
- Staff conducting vaccination should wear a three-layered surgical mask and gloves and sanitize their hands after vaccinating every child.
- Support staff to manage seating arrangement, queue management etc. for the pregnant women and care givers.
- Ensure hand sanitizer or hand washing units with chlorinated water are available for public use at the entrance to the health facility.
- Disinfect the seating space after completion of the immunization session.
- Adequate availability of MCP card and due updating of records.
- Adequate availability of vaccines and logistics for the uninterrupted immunization session
- Display visual alerts in clinics, such as posters, with information about COVID-19 disease and reminders on individual prevention strategies.

C. VHSNDs/UHSNDs/ Outreach Immunization:

Plan for multiple small sessions in missed areas through a catch-up approach and initiate VHSND/UHSND/RI sessions as per micro-plan

1) Session Organization

A. Staggered Approach: To avoid crowding at immunization session/VHND, a staggered approach needs to be practiced.

- For each session, divide all children and pregnant mothers in due list into hourly slots so that 4-5 beneficiaries are allocated per hour.

- In a village with 1000 population, there will be average 25-30 beneficiaries due for various services of VHSND every month. The same can be covered in 6 hours of staggered approach.
- The number of beneficiaries to be mobilized for each hour will be dependent on the space available at the session site along with seating arrangement and other provisions to maintain social distancing of at least 1-meter distance between two beneficiaries
- Additional doses of reconstituted vaccines to be supplied for staggered sessions
- **Alternate Session Sites:** Site other than Anganwadi center may need to be identified in case of space constraints to maintain social/physical distancing and lack of adequate provision for hand washing with soap and water. Schools, Panchayat Ghars, community centers etc. may be explored as alternate sites.

B. Break-up Session

- One village session is divided into two sessions to reduce crowding if staggered approach does not suffice
- **Additional session can be conducted by Hired Vaccinator (retired ANM, Staff Nurse etc can be hired) or trained Male Health Worker at SC/LHV/Male Health Assistant at PHC**

C. Immunization services through mobile teams:

- Identified HRAs and hard to reach areas can be considered for mobile team approach.

D. Urban Areas:

- Alternate site identification to ensure social distancing needs to be undertaken immediately. Buildings and areas like community center, marriage hall, school (during non-operating hours), private hospitals/clinics can be explored in collaboration with MAS.
- Urban Local Bodies (ULB) to support in planning and implementation of outreach services including collaboration with other departments/organizations in session planning, crowd management, seating and water arrangement etc.
- Multiple sessions need to be planned in each urban area and MAS to coordinate limited mobilization and staggered access to UHSND services at each session.
- Additional sessions to be organized with support of hired vaccinators as above
- Private sector engagement strategies to be explored as appropriate for vaccination, awareness creation and identification of missed children.

2) Beneficiary Mobilization:

- Based on the agreed hourly slot, ASHA should mobilize the beneficiaries/family of beneficiaries by phone at least one day prior to the session. On session day, ASHA and AWW to mobilize beneficiaries as per hourly plan while taking due precautions of

social distancing and handwashing/sanitization, respiratory hygiene and using homemade cloth mask during house visit.

- Request for only one caregiver to accompany with the beneficiary to avoid overcrowding and maintain effective social distancing.
- Any child, caregiver and/or pregnant woman suffering from flu like symptoms (fever, cough or shortness of breath) should be asked **not to come** to the session site and seek services as per existing guidelines related to COVID-19.

3) Session Site:

- ANM should practice standard hygiene practices and should wash hands with soap and water for at least 20 seconds before start of session and sanitize hands with an alcohol-based sanitizer before and after vaccinating every beneficiary
- ANM should wear a triple layered surgical mask and gloves.
- All care givers should be advised to use homemade cloth mask during their visit to the session site.
- There should be health workers (ASHA, AWW) /community members from Panchayat/SHG available to manage seating arrangement for the pregnant women and care givers.
- The staff must be trained on screening of beneficiary for flu like symptoms
- Adequate arrangement for soap and water and other necessary equipment
- Additional doses of reconstituted vaccines to be supplied
- Ensure adequate availability and appropriate distribution of ORS, Zinc, IFA and calcium, MCP card and other items as per VHSND guidelines
- Equipment such as weighing scale, thermometer, infant-meter, stadiometer etc., should be adequately sanitized immediately after use, with prescribed disinfectants.
- While conducting tests (pregnancy, Urstix etc.) involving body fluids, necessary infection prevention measures should be undertaken.

4) Waiting Area, Group Counselling and COVID-19 Related Awareness Generation

- Ensure that beneficiaries and caregivers maintain the social distancing during the 30-minute waiting period. This 30-minute waiting period to be used for group counselling and avoid individual counselling. Provide key preventive messages related to COVID-19, (handwashing technique, nutrition of pregnant women, breastfeeding etc.)
- COVID-19 related IEC material can be made available for caregivers in the waiting area.

5) After the session:

- After all the beneficiaries are gone, the site should be sanitized properly (tables, chairs, weighing machine and other equipment used during the session) and Gloves and masks should be properly disposed as per the guideline of COVID-19. All the vaccine and logistic along with biomedical wastes should be taken back by AVD.
- All vaccination data to be entered in HMIS and RCH portal as usual.

6) Capacity building of front-line health workers: Instead of In-person trainings, existing digital health platforms may be leveraged for training and capacity building.

7) Vaccine and logistics availability:

- Vaccine stocks to be reviewed at all locations using eVIN and adequate refiling and mobilization as per programme need.
- Availability of adrenaline and other components of anaphylaxis kit should be reviewed and made available as per requirement.
- Review of near expiry stock and priority utilization.
- Additional doses of reconstituted vaccines to be supplied for staggered sessions
- Currently air transportation of vaccines is not operational as COVID related material is being prioritized- Vaccines to be added to COVID priority list
- Alternate arrangement for dry supplies like vaccine syringes and droppers.

8) Vaccine preventable disease surveillance:

- Surveillance systems should continue to enable early detection and management of VPDs.
- Many VPD network laboratories are becoming involved in testing for the virus that causes COVID-19, drawing laboratory resources away from VPD testing. When laboratory testing is not possible, specimens should be stored appropriately for confirmation when laboratory capacity allows.

9) Supportive Supervision

- States need to strengthen the supportive supervisory mechanism for VHSND/immunization sessions and to include monitoring of practices associated with social distancing and other guidelines.
- Data from SS should be used for local action and monitoring progress

**Revised advisory on the use of Hydroxychloroquine (HCQ) as prophylaxis for COVID-19 infection
(in supersession of previous advisory dated 23rd March, 2020)**

1. Background

The Joint Monitoring Group under the Chairmanship of DGHS and including representatives from AIIMS, ICMR, NCDC, NDMA, WHO and experts drawn from Central Government hospitals reviewed the prophylactic use of Hydroxychloroquine (HCQ) in the context of expanding it to healthcare and other front line workers deployed in non-COVID and COVID areas, respectively.

The National Task force (NTF) for COVID-19 constituted by Indian Council of Medical Research also reviewed the use of HCQ for prophylaxis of SARS-CoV-2 infection for high risk population based on the emerging evidence on its safety and efficacy. The NTF reviewed the data on in-vitro testing of HCQ for antiviral efficacy against SARS-CoV-2, safety profile of HCQ reported to the pharmacovigilance program of India, and data on the use of HCQ for the prophylaxis of SARS-CoV-2 infection among health care workers (HCWs) and reported its findings as detailed below:

1.1 In-vitro study

At NIV, Pune, the report of the in-vitro testing of HCQ for antiviral efficacy showed reduction of infectivity /log reduction in viral RNA copy of SARS-CoV2.

1.2 Safety Profile of HCQ

The data on assessment of HCQ prophylaxis among 1323 HCWs indicated mild adverse effects such as nausea (8.9%), abdominal pain (7.3%), vomiting (1.5%), hypoglycemia (1.7%) and cardio-vascular effects (1.9%). However, as per the data from the Pharmacovigilance program of India, there have been 214 reported instances of adverse drug reactions associated with prophylactic HCQ use. Of these, 7 were serious individual case safety reports with prolongation of QT interval on ECG in 3 cases.

1.3 Studies on prophylaxis of SARS-CoV-2 infection

- A retrospective case-control analysis at ICMR has found that there is a significant dose-response relationship between the number of prophylactic doses taken and frequency of occurrence of SARS-CoV-2 infection in symptomatic healthcare workers who were tested for SARS-CoV-2 infection.
- Another investigation from 3 central government hospitals in New Delhi indicates that amongst healthcare workers involved in COVID-19 care, those on HCQ prophylaxis were less likely to develop SARS-CoV-2 infection, compared to those who were not on it. The benefit was less pronounced in healthcare workers caring for a general patient population.
- An observational prospective study of 334 healthcare workers at AIIMS, out of which 248 took HCQ prophylaxis (median 6 weeks of follow up) in New Delhi also showed that those taking HCQ prophylaxis had lower incidence of SARS-CoV-2 infection than those not taking it.

2. Eligibility criteria for HCQ prophylaxis

The Advisory earlier issued (dated 23rd March, 2020; available at: <https://www.mohfw.gov.in/pdf/AdvisoryontheuseofHydroxychloroquinasprophylaxisforSARSCoV2infection.pdf>), provided placing the high risk population (asymptomatic Healthcare Workers involved in the care of suspected or confirmed cases of COVID-19 and asymptomatic household contacts of laboratory confirmed cases of COVID-19) under chemoprophylaxis with HCQ.

In light of all of the above, the Joint Monitoring Group and NTF have now recommended the prophylactic use of HCQ in the following categories:

1. All asymptomatic healthcare workers involved in containment and treatment of COVID19 and asymptomatic healthcare workers working in non-COVID hospitals/non-COVID areas of COVID hospitals/blocks
2. Asymptomatic frontline workers, such as surveillance workers deployed in containment zones and paramilitary/police personnel involved in COVID-19 related activities.
3. Asymptomatic household contacts of laboratory confirmed cases.

3. Exclusion/contraindications

- The drug is contraindicated in persons with known case of:
 1. Retinopathy,
 2. Hypersensitivity to HCQ or 4-aminoquinoline compounds
 3. G6PD deficiency
 4. Pre-existing cardiomyopathy and cardiac rhythm disorders

- The drug is not recommended for prophylaxis in children under 15 years of age and in pregnancy and lactation.

Rarely the drug causes cardiovascular side effects such as cardiomyopathy and rhythm (heart rate) disorders. In that situation the drug needs to be discontinued. The drug can rarely cause visual disturbance including blurring of vision which is usually self- limiting and improves on discontinuation of the drug. For the above cited reasons the drug has to be given under strict medical supervision with an informed consent.

4. Dosage

S. No.	Category of personnel	Dosage
1	<ul style="list-style-type: none"> • Asymptomatic household contacts of laboratory confirmed cases 	400 mg twice a day on Day 1, followed by 400 mg once weekly for next 3 weeks; to be taken with meals
2	<ul style="list-style-type: none"> • All asymptomatic healthcare workers involved in containment and treatment of COVID-19 and asymptomatic healthcare workers working in non-COVID hospitals/non-COVID areas of COVID hospitals/blocks • Asymptomatic frontline workers, such as surveillance workers deployed in containment zones and paramilitary/police personnel involved in COVID-19 related activities 	400 mg twice a day on Day 1, followed by 400 mg once weekly for next 7 weeks; to be taken with meals

5. Use of HCQ prophylaxis beyond 8 weeks [in categories 4 (2) above]

In clinical practice HCQ is commonly prescribed in a daily dose of 200mg to 400mg for treatment of diseases such as Rheumatoid Arthritis and Systemic Lupus Erythematosus for prolonged treatment periods with good tolerance. With available evidence for its safety and beneficial effect as a prophylactic drug against SARS-COV-2 during the earlier recommended 8 weeks period, the experts further recommended for its use beyond 8 weeks on weekly dosage with strict monitoring of clinical and ECG parameters which would also ensure that the therapy is given under supervision.

Based on the available evidence, it has been opined that HCQ is relatively safe, when certain contraindications are avoided, and has some beneficial effect as a prophylactic option.

6. Monitoring

- An ECG (with estimation of QT interval) may be done before prescribing HCQ prophylaxis.
- An ECG should be done in case any new cardiovascular symptoms occurs (e.g., palpitations, chest pain syncope) during the course of prophylaxis.
- An ECG (with estimation of QT interval) may be done in those who are already on HCQ prophylaxis before continuing it beyond 8 weeks.
- One ECG should be done anytime during the course of prophylaxis.

7. Key considerations

While following above recommendations, it should be noted that:

- 1) The drug has to be given under strict medical supervision with an informed consent.
- 2) The drug has to be given only on the prescription of a registered medical practitioner.
- 3) Advised to consult with a physician for any adverse event or potential drug interaction before initiation of medication. The contraindications mentioned in the recommendations should strictly be followed.
- 4) Health care workers and other frontline workers on HCQ should be advised to use PPE. Front line workers should use PPEs in accordance with the guidelines issued by this Ministry (available at: <https://www.mohfw.gov.in/pdf/GuidelinesonrationaluseofPersonalProtectiveEquipment.pdf> and <https://www.mohfw.gov.in/pdf/UpdatedAdditionalguidelinesonrationaluseofPersonalProtectiveEquipmentsettingapproachforHealthfunctionariesworkinginnonCOVID19areas.pdf>) or by their respective organization.
- 5) They should be advised to consult their physician (within their hospital/surveillance team/security organization) for any adverse event or potential drug interaction before initiation of medication. The prophylactic use of HCQ to be coupled with the pharmacovigilance for adverse drug reactions through self-reporting using the Pharmacovigilance Program of India (PvPI) helpline/app. (available at: https://play.google.com/store/apps/details?id=com.vinfotech.suspectedadversedrugreaction&hl=en_IN)
- 6) If anyone becomes symptomatic while on prophylaxis, he/she should immediately contact the health facility, get tested as per national guidelines and follow the standard treatment protocol. Apart from the symptoms of COVID-19 (fever, cough, breathing difficulty), if the person on chemoprophylaxis develops any other symptoms, he should immediately seek medical treatment from the prescribing medical practitioner.
- 7) All asymptomatic contacts of laboratory confirmed cases should remain in home quarantine as per the National guidelines, even if they are on prophylactic therapy.
- 8) Simultaneously, proof of concept and pharmacokinetics studies should be continued/ taken up expeditiously. Findings from these studies and other new evidence will guide any change further in the recommendation.
- 9) They should follow all prescribed public health measures such as frequent washing of hands, respiratory etiquettes, keeping a distance of minimum 1meter and use of Personal protective gear (wherever applicable).

Note: It is reiterated that the intake of above medicine should not instil a sense of false security.

Guidance Note on Provision of Reproductive, Maternal, Newborn, Child, Adolescent Health Plus Nutrition (RMNCAH+N) services during & post COVID-19 Pandemic

Introduction

In India, with the second largest global population, the growing epidemic of Coronavirus requires that special efforts have to be made to continue the essential routine RMNCAH+N services. With more than 2.5 crore pregnancies each year in the country, it is important to ensure the availability of services during this period as any denial of services can have an impact on maternal and newborn mortalities, morbidities as well as the health care costs. Also unwanted pregnancies have negative impact on maternal and new born health. Regulating fertility is thus a necessity. There is need to enhance provision of safe abortion services besides post-partum and post abortion contraception.

India also has the largest adolescent and youth population. Therefore, in addition to the current priority for COVID 19 for the health facilities and health workers, it is also vital that essential health services for vulnerable population like this segment are continued during the pandemic.

MoHFW released the guidelines on “*Enabling Delivery of Essential Health Services during the COVID 19 Outbreak*” dated 14th April 2020¹ for provision of essential services

The guidelines outlined the following services as essential:

- ✓ Services related to pregnancy care and management
- ✓ New-born care and childhood illness management
- ✓ Immunization Services
- ✓ Management of SAM children
- ✓ Family Planning Services
- ✓ Comprehensive Abortion Care Services
- ✓ Adolescent Health services

The guidelines also mentioned the health system approach for delivery of these essential services including facility mapping and planning, alternate service delivery mechanisms (Telehealth, modified outreach, home visits), Triage, Management of human resources, ensuring supplies of medicines and diagnostics, program management (including monitoring), finances and accountability systems.

The following Guidance Note on Provision of Reproductive, Maternal, Newborn, Child, Adolescent Health Plus Nutrition (RMNCAH+N) services during & post COVID-19 pandemic elaborates the various RMNCAH+N services to be provided at different levels in accordance with the zonal categorization of Containment Zones & Buffer Zones and beyond these zones.

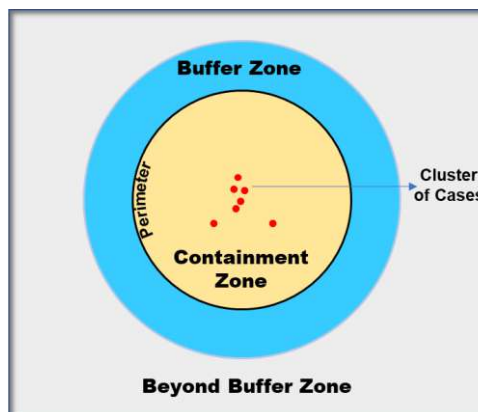
¹(<https://www.mohfw.gov.in/pdf/EssentialservicesduringCOVID19updated0411201.pdf>)

Zonal Categorization (based on COVID 19 Risk Assessment):

Districts/Sub-Division/Municipal Corporation/Ward or any other appropriate administrative units are categorized into:

- **Green Zone:** No active COVID-19 cases
- **Red & Orange Zone:** Active COVID-19 cases

Areas where COVID-19 cases are reported have been classified as **Containment zone** and surrounding areas with risk for COVID-19 spread are termed as **buffer zone**.



For RMNCAH+N purposes, services have been bifurcated into:

1. **Containment & Buffer Zone and**
2. **Areas beyond Buffer Zone & Green Zone**

RMNCAH+N Guidelines

All RMNCAH+N activities will follow certain guiding principles (these are general principles and needs to be followed for all the RMNCAH+N activities).

General Guiding Principles:

- Guidelines and updates from MHA and MoHFW will override any other guidelines.
- Any area exiting a 'containment/ buffer zone' can start RMNCAH+N activities as listed in 'areas beyond buffer zone' after a minimum gap of 14 days following delisting.
- Similarly, an area entering a 'containment/buffer zone' should restrict RMNCAH+N activities immediately as outlined in 'Containment/Buffer Zone'.
- Not for Profit/private sector hospitals can be involved in provision of non COVID essential services, wherever public sector capacity needs to be supported.
- Practices of physical distancing, hand washing, and respiratory hygiene need to be maintained at all service areas by all beneficiaries and service providers.
- Facilities should follow a staggered approach, wherein adequate seating space for beneficiaries and caregivers with physical distancing is ensured.
- In case the number of beneficiaries is more, then additional sessions/clinics could be organized
- Community based activities should have limited participation (5-10) at a time.
- The procedure site and all equipment should be sanitized properly before and after the clinics/sessions.
- The health care providers and Front-Line Workers (FLWs) to use appropriate Personal Protective Equipment (PPEs) as per guidelines and monitored regularly for adherence.
<https://www.mohfw.gov.in/pdf/UpdatedAdditionalguidelinesonrationaluseofPersonalProtectiveEquipmentsettingapproachforHealthfunctionariesworkinginnonCOVID19areas.pdf/>
<https://www.mohfw.gov.in/pdf/GuidelinesonrationaluseofPersonalProtectiveEquipment.pdf>

Specific Guiding Principles for provision of RMNCAH+N services:

- All COVID suspect and positive cases should preferably be provided services at dedicated COVID facility.
- COVID testing is not mandatory for RMNCAH+N service. ICMR testing guidelines need to be followed.
- Teleconsultation services to be promoted at all levels to prevent overcrowding and reduce cross infection.
- Drugs, commodities needed for continuing RMNCAH+N services, should be treated as essential commodities.
- Home deliveries of essential medicines like IFA, Calcium, ORS, Zinc, contraceptives etc. can be organized in containment zone.
- Capacity building of all healthcare providers, review meetings etc. should preferably be carried out using digital health platforms.
- **Campaign mode services:**

Following campaign mode services can be provided on an alternative mechanism like through home delivery of essential services & commodities etc. based on local situation:

 - Mass vitamin A prophylaxis
 - Campaigns for Intensified Diarrhea Control Fortnight (IDCF)
 - National Deworming Day (NDD)
 - Test treat and Talk (T3) camps for Anemia.

Note:

- **Critical services for women, children and adolescent should be provided irrespective of their COVID status.**
- **Under no circumstances should there be a denial of essential services.**

Maternal Health

Program activities	Containment & Buffer Zone	Beyond Buffer Zone & Green Zone
Antenatal Services	<ul style="list-style-type: none"> • VHSND/UHSND should not be organized • PMSMA should be deferred • ANC services should be limited for walk-in beneficiaries in facilities. • Line listing of High Risk Pregnancies should be maintained and follow up should be through teleconsultation. beneficiary visit should be organized to the hospital located outside Containment Zone • House to house visit conducted by Health Workers/COVID warriors for COVID purpose should be utilized to enquire about services required for pregnant women and linkages to the required service should be provided. • COVID warriors may be trained in these services, if required 	<ul style="list-style-type: none"> • Uninterrupted ANC services • PMSMA to be continued • Modified VHSND/UHSND
Delivery Services	<ul style="list-style-type: none"> • All health facilities should continue providing delivery services • Birth companion should be avoided during delivery 	<ul style="list-style-type: none"> • All health facilities should continue providing delivery services • Birth companion should be avoided during delivery in areas beyond buffer zone and no restriction in green zone
Postnatal Care	<ul style="list-style-type: none"> • Postnatal care through teleconsultation. • House to house visit conducted by Health Workers/COVID warriors for COVID purpose should be utilized to enquire about services required for postnatal mothers and linkages to the required service should be provided. • COVID warriors may be trained in these services, if required 	<ul style="list-style-type: none"> • Uninterrupted PNC services at all health facilities and house visits by ASHAs should be continued.

Specific guidance for Maternal Health Services: Every pregnant woman is to be linked with the appropriate nearby health facility for delivery and ambulance services to be tied up in advance for timely transport.

Newborn & Child Health

Programmatic activities	Containment & Buffer Zone	Beyond Buffer Zone & Green Zone
Care of sick newborn, Follow up of SNCU discharges and Family Participatory Care	<ul style="list-style-type: none"> • Services to sick new born (irrespective of COVID status) should be provided in the nearest SNCU/NBSU. Also proper referral arrangement should be ensured • Routine SNCU follow-up through teleconsultation, however, sick newborn showing danger signs to be referred to nearest SNCU with proper referral arrangement • Family Participatory Care in SNCU should be suspended. • House to house visit conducted by Health Workers/COVID warriors for COVID purpose should be utilized to enquire about services required for children and linkages to the required service should be provided. • COVID warriors may be trained, if required 	<ul style="list-style-type: none"> • All services should be continued as per guidelines
HBNC and Home Based Young Child Care (HBYC)	<ul style="list-style-type: none"> • HBNC/HBYC services should be provided through teleconsultation. • House to house visit conducted by Health Workers/COVID warriors for COVID purpose should be utilized to enquire about services required for children and linkages to the required service should be provided. • COVID warriors may be trained, if required. 	<ul style="list-style-type: none"> • HBNC/HBYC visits should be continued as per guidelines.
RBSK	<ul style="list-style-type: none"> • Newborn screening should be done at all health facilities where deliveries have taken place • Screening of children through Mobile Health Teams should be deferred • DEIC services should be provided on demand to walk-in beneficiaries in facility. 	<ul style="list-style-type: none"> • Screening of children through Mobile Health Teams should be deferred till schools and AWCs reopen. • DEIC should continue supporting children for management of 4Ds.

Programmatic activities	Containment & Buffer Zone	Beyond Buffer Zone & Green Zone
	<ul style="list-style-type: none"> Treatment of children with 4Ds should be continued in all the designated hospitals. 	
Management of SAM children with complications at NRC	<ul style="list-style-type: none"> Services to sick SAM should be provided in the nearest NRC Proper referral arrangement should be ensured Routine follow-up through teleconsultation should be provided House to house visit conducted by Health Workers/COVID warriors for COVID purpose should be utilized to enquire about services required for children and linkages to the required service should be provided. COVID warriors may be trained, if required. 	<ul style="list-style-type: none"> Management of sick SAM children should be continued as per existing guidelines.

Specific guidance for Newborn and Child Health Services: Mother and baby to be nursed together as far as possible and breastfeeding to be initiated within 1 hour of delivery, irrespective of COVID status. However, she should put on a facemask and practice hand hygiene before each feeding.

Immunization

Programmatic activities	Containment & Buffer Zone	Beyond Buffer Zone & Green Zone
Birth dose vaccination	To be continued at all health facilities as the beneficiaries are already in the facility	
Immunization	<ul style="list-style-type: none"> Immunization services on demand to walk-in beneficiaries in facility No outreach session (VHSND/UHSND) No active mobilization 	<ul style="list-style-type: none"> Both facility based and outreach sessions to be conducted with modified VHSND/UHSND

Adolescent Health

Programmatic activities	Containment & Buffer Zone	Beyond Buffer Zone & Green Zone
Adolescent Friendly Health Clinics (AFHCs) and Adolescent Health Days (AHDs)	<ul style="list-style-type: none"> AFHCs to conduct teleconsultation of adolescents and provide services on demand to walk-in beneficiaries 	<ul style="list-style-type: none"> AFHC to remain operational AHD-modified services should be provided to avoid crowding as per in guiding principles Community distribution of IFA tablets and Sanitary Napkins to be carried out

Specific guidance for Adolescent Health Services: To address anxiety and psycho-social issues among adolescents, peer-based counselling/teleconsultation/helpline to be initiated by involving AFHC Counsellors.

Reproductive Health

Programmatic activities	Containment & Buffer Zone	Beyond Buffer Zone & Green Zone
Family Planning		
Sterilization services (FDS and static services)	<ul style="list-style-type: none"> Static services should be provided on demand to walk-in beneficiaries in facility Fixed Day services (FDS) should be provided by ensuring ≤ 10 clients per day in designated facilities 	<ul style="list-style-type: none"> All services should be provided as per guideline avoiding overcrowding and maintaining physical distancing Fixed Day services (FDS) should be provided by ensuring ≤ 10 clients per day More sessions be organized, if needed
Post-partum sterilization/ Post abortion sterilization	<ul style="list-style-type: none"> Postpartum services should be provided to beneficiaries who are already in facility 	
IUCD	<ul style="list-style-type: none"> IUCD Should be provided on demand to walk-in beneficiaries in facility 	
PPIUCD	<ul style="list-style-type: none"> PPIUCD should be provided concurrent with delivery 	
PAIUCD	<ul style="list-style-type: none"> PAIUCD should be provided concurrent with surgical abortion 	

Programmatic activities	Containment & Buffer Zone	Beyond Buffer Zone & Green Zone
Injectable MPA	<ul style="list-style-type: none"> Injectable MPA Should be provided on demand to walk-in beneficiaries in facility. 	
Comprehensive Abortion Care (CAC)		
CAC	<ul style="list-style-type: none"> To be provided on demand to walk-in beneficiaries in facility as per MTP Act 	<ul style="list-style-type: none"> All services (induced and spontaneous abortions) in designated CAC facilities

Specific guidance for Reproductive Health Services:

- Extra packets (at least 2 months' supply) of condoms and OCPs can be handed to the clients to avoid repeated visits/repeated contact and continuous supply should be ensured.
- All designated facilities should continue providing Comprehensive Abortion care as per MTP Act.

Key RMNCAH+N service modalities:

Facility Based Services: States/UTs may follow the programmatic guidelines as mentioned above. The routine technical protocols to be followed as per GoI guidelines.

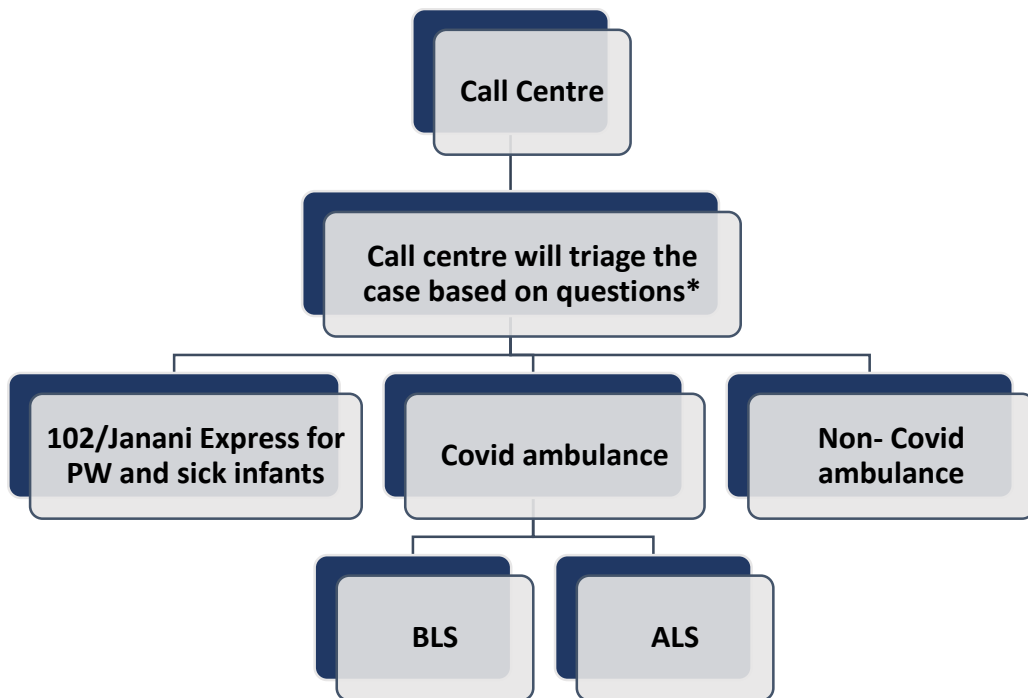
Modified VHSND/UHSND/Outreach:

To maintain physical distancing and reduce waiting time, VHSND/UHSND/Outreach session should be modified so as the number beneficiaries attending sessions are limited.

Session Organization

- A. Staggered Approach:** To avoid crowding at VHSND/UHSND/Outreach, a staggered approach needs to be practiced.
 - For each session, divide all beneficiaries into hourly slots so that 5-10 beneficiaries are allocated per hour.
 - Alternate Session Sites may be identified in case of space constraints to maintain social distancing.
- B. Break-up Session**
 - One village session is divided into two sessions to reduce crowding if staggered approach does not suffice

Ambulance Services:



***On receiving the call, the call centre needs to enquire following details:**

- a) Demographic details of the patient i.e. name, age, gender etc.
- b) Ascertain whether the patient is suspect case of COVID-19
- c) Clinical condition of patient to be transported: whether stable or critical

More details are available at <https://www.mohfw.gov.in/pdf/StandardOperatingProcedureSOPfortransportingasuspectorconfirmedcaseofCOVID19.pdf>

Advisory on re-processing and re-use of eye-protection – Goggles

Background:

Goggles are crucial components of Personal Protective Equipment (PPE) Kits. After use of PPE Kit all its components are discarded, as bio-medical waste. However, the goggles conforming to prescribed EN/BIS specifications can be reused after proper disinfection

Purpose of the documents

The purpose of this document is to enable individuals to reuse goggles used by them thus allowing an extended use without risk of contracting infection.

Standard Operating Procedure

Reuse

1. The kitting of the PPEs with goggles will be done away with.
2. All goggles that conform to prescribed EN/BIS specifications will be re-used after disinfection.
3. Reprocessing and reuse of goggles must be done only when it is dedicated to each individual (write name over the band)
4. Reprocessing must be done after every use before using it again.
5. Adhere to manufacturer's instructions for cleaning and disinfection of goggles, wherever available.
6. If such instruction are not available, clean and disinfect the goggles as follows:
 - While wearing gloves, clean goggles with soap/detergent and water and then immerse in 1% freshly prepared sodium hypochlorite for 10 minutes. Wash/wipe the inside and outside of goggles with clean water to remove residue.
 - Air dry completely on a clean flat surface or by hanging in clean place, or use clean tissue papers/gauge to dry it.
 - Store it in a paper bag/in a clean area to avoid recontamination.
 - Remove gloves and perform hand hygiene.
7. Eye protection must be discarded if damaged/rendered optically non-clear on repeated usage.

Ratio:

Goggles may be issued to each health care worker, who will decontaminate them after every use. Goggles to be disinfected by users and re-used at least five times each, whereby one pair of goggles will suffice for 6 days. They may use them rationally till their transparency decreases or they get damaged. The ratio of issue of goggles to coverall is recommended at 1:6.

Guidelines for safe ENT practice in COVID 19

Introduction

1. Ear, Nose, Throat (ENT) is a high-risk speciality. These guidelines are aimed to minimise the spread of COVID-19 infection among ENT doctors, nursing staff, support staff, patients and their attendants.
2. These comprise:
 - A. Protocols and SOPs for ENT OPD
 - B. Protocol for ENT and Head & Neck Surgery Ward
 - C. Guidelines for Operation Theatre for ENT surgeries

A. PROTOCOLS AND SOP FOR ENT OPD

1) Teleconsultation:

- Teleconsultation will be preferable
- Prior teleconsultation can be done to identify patients requiring physical examination in clinic

2) Appointment system (time-based appointment to limited numbers)

- One patient at a time in examination room, if possible, without attendant
- Sufficient time should be given for patient evaluation and for time in-between patients
- Walk-in patients without appointment should be discouraged

3) Screening of patients at OPD entry:

- All patients entering ENT OPD should be screened using screening proforma(Annexure I) and thermal screening. The objective of screening is to minimize exposure to staff and to patients. Screening is to be done to pre-screen all patients before entry and to minimize entry to the OPD premises. Patients having symptoms suggestive of Covid 19 (Whether ENT Symptoms or Respiratory Symptoms) should be seen in a separate "Covid-19 screening Clinic" and not in the ENT OPD. This

is so that other patients in the ENTOPD are safe. Also, personnel manning the Covid-19 Screening Clinic will have a different level of PPE.

4) At entry point of OPD:

- Regulate entry of patients and ensure use of mask, hand hygiene and social distancing, as per the standard protocols advocated by M/o Health & Family Welfare

5) Within OPD room:

- ENT OPD room should be well-ventilated.
- ENT doctors should wear Level I PPE kit (N95 mask, gown, gloves, goggles/ face shield) in OPD chamber.
- Avoid performing endoscopy (Nasal endoscopy, 90 rigid or flexible endoscopy for larynx) in routine OPD.
- If endoscopy has to be performed, it should preferably be performed in a separate demarcated area with Level II PPE kit (Cover-all gown, N-95 mask, gloves and goggles).
- Doctor should change gloves if they get soiled and refrain from eating/drinking during OPD timings.
- Doctor should encourage patients and their attendant to follow-up with tele-consultation based upon his/her assessment.

6) Endoscopy and biopsy SOP

- Because of risk of aerosol generation during biopsies and endoscopies, all HCP (doctor, nursing staff and technical assistant) need to wear Level II kit (Cover-all gown, N-95 mask, gloves and goggles) during these procedures.
- It is preferable to have separate donning and doffing area with a supervisor for both procedures
- SOPs for endoscopy and biopsy SOP are at **Annexure II**

B. PROTOCOL FOR ENT AND HEAD & NECK SURGERY WARD

1. GENERAL POINTS FOR ENT AND HEAD & NECK SURGERY WARD

- ENT AND HEAD & NECK SURGERY WARD is supposed to be COVID free and the aim of guidelines is to maintain it as a COVID free ward as possible.

- COVID 19 suspect patients should be treated in a separate ward for COVID 19 patients, and should be shifted to ENT ward only after confirmation of COVID negative status¹.
- Ensure that suspected and confirmed cases of COVID–19 patients are kept separately.
- Patients should be screened for COVID 19 before admission (refer to Annexure I)
- Only one patient’s care-taker should be allowed at a time who is also screened like above. They should comply to strict precaution for COVID 19 like wearing of mask, frequent hand washing and social distancing.
- Ensure that appropriate hand washing facilities and hand-hygiene supplies are available.
- Hand sanitization and social distancing posters must be displayed in multiple areas of ward.
- Keep the patient’s personal belongings to a minimum.
- Examination instruments should be properly sterilized as per standard sterilisation protocol after every use .
- Ward should be with minimum furniture for proper cleaning and disinfection.
- Visitors should not be allowed.
- Corridors and rooms should be well-ventilated.

2. Scheme for the ENT AND HEAD & NECK SURGERY WARD

1. Distancing of at least 2 meters in between patient beds is mandatory. Additional distance if feasible is desirable as care taker may also be accompanying patients.
2. Ward should be demarcated into separate areas for patients with high aerosol generating potential (e.g. Tracheostomized patients) and for patients with ENT patients
3. If possible, patients in the ward can be segregated depending on the time from admission.

3. SOME COMMON AEROSOL-GENERATING PROCEDURES IN ENT AND HEAD & NECK SURGERY WARD

1. Major bulk of Aerosol-Generating Patients in ENT are tracheostomized patients
Encourage use of HME (heat and moisture exchanger), T piece to prevent contamination of room.
2. Tracheostomy tube suctioning/ change
3. Nasogastric tube insertion
4. Procedures in Nasal and Oral cavity such as examination, cleaning, suctioning, nasal packing, foreign bodies’ removal etc.

4. RATIONAL USE OF PERSONAL PROTECTIVE EQUIPMENT^{1,5,6}

Health care personnel	1- Guard- N 95 mask 2- Health care worker - level I PPE kit (N 95 mask and gown)
Patients and care taker	Gown & triple layer mask
Examination of patients/ Tracheostomy/ Tube change/ suctioning of tracheostomy tube/ cleaning the ward (aerosol generating)	HCP should level II PPE (cover all gown, N 95 mask, gloves, goggle and face shield)

(i) For rational use of PPEs, the following guidelines issued by the Ministry may be referred :

<https://www.mohfw.gov.in/pdf/GuidelinesonrationaluseofPersonalProtectiveEquipment.pdf> and

(ii) Additional guidelines on rational use of Personal Protective Equipment:

<https://www.mohfw.gov.in/pdf/UpdatedAdditionalguidelinesonrationaluseofPersonalProtectiveEquipmentsettingapproachforHealthfunctionariesworkinginnonCOVID19areas.pdf>

5. PRACTICES FOR ENVIRONMENTAL CLEANING IN HEALTHCARE FACILITIES

Cleaning environmental surfaces with water and detergent and applying commonly used hospital disinfectants (such as sodium hypochlorite) is an effective and sufficient procedure. Regular cleaning is required to keep ward COVID-free.

Cleaning agents and disinfectants^{1,3,7}

- a) Freshly prepared 1% Sodium Hypochlorite can be used as a disinfectant for cleaning and disinfection
- b) Leaving the solution for a contact time of at least 10 minutes is recommended.
- c) Ward cleaning should be done with detergent with water or 1% Sodium Hypochlorite.
- d) High contact surfaces (door and door knobs) should be regularly cleaned with 1% Sodium Hypochlorite.
- e) Nursing station, examination room, tracheostomised patient cubical and cubical with less than 1 week admission need more frequent cleaning than other areas of ward.

- f) Alcohol (e.g. isopropyl 70% or ethyl alcohol 70%) can be used to wipe down surfaces where the use of bleach is not suitable, e.g. metals.
- g) Sensitive equipment's (BP apparatus, thermometer, endoscopes) should be wiped with 70% alcohol-based rub/spirit swab before each patient contact.
- h) Endoscopes can be sterilized by immersing in 2% glutaraldehyde solution for 20 minutes
- i) Examination Equipment(heat stable)- (autoclave), chemical (formaldehyde) vapor, and dry heat (e.g., 320° F for 2 hours)

For more details (like frequency of cleaning / different items)-

<https://www.mohfw.gov.in/pdf/Guidelinesondisinfectionofcommonpublicplacesincludingoffices.pdf>

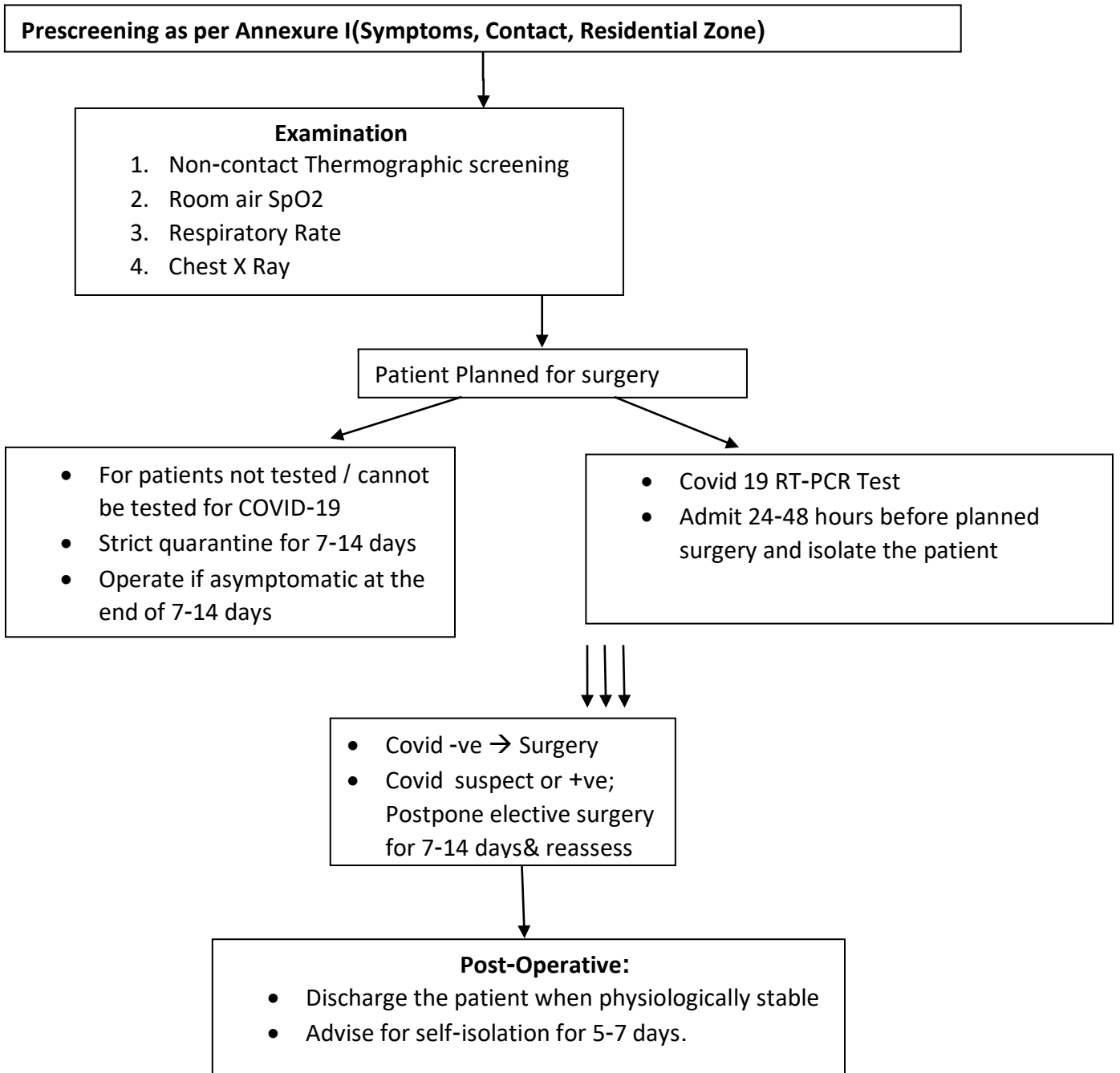
C. GUIDELINES FOR OPERATION THEATRE FOR ENT SURGERIES DURING COVID-19 PANDEMIC

Objectives - To escalate the preparedness towards reinstating operation theatre (OT) practices for ENT surgeries in the wake of COVID-19 pandemic.

- **No COVID positive patient to have surgeries in OT designated for non-COVID cases.**
- **COVID 19 positive patients to be operated only for emergency indications in designated OT for COVID patients**
- ENT Surgical procedures are associated with very high transmission risk⁸ of COVID-19 due to the following factors.
 - a. Upper aerodigestive tract is the post of entry, nidus and exit route for the Novel Corona Virus.
 - b. High aerosol generation during surgeries in the upper aerodigestive tract
 - c. Prolonged aerosolization during and following prolonged operative procedures and procedures using powered instruments like micro-debrider and drills.

Pre-Operative Screening and COVID-19 Testing Paradigm⁹

This flow chart to be considered for non-emergency cases



Modifications in OT set-up and personnel protection

- Emergency procedures (for life/ organ threatening diseases/conditions) in COVID-19 POSITIVE AND SUSPECTED patients to be performed in separate OT complex.
- When not practical, the operating room for such cases must be dedicated and as close as possible to the entrance of the OT block.
- Aerosol generating procedures under local anaesthesia should be avoided.
- Minimum number of personnel (i.e., surgeons, anaesthetists, nurses, technicians) should enter the OR in a timely manner.
- Minimal required material (preferably disposable) should be used for each intervention.
- At the end of each intervention all disposable materials must be disposed of properly and all surfaces as well as electro-medical devices accurately cleaned and disinfected
- PPE must be removed and disposed off outside the OT in dedicated doffing areas.
- All procedures not physically related to the patient (i.e., clinical and surgical documentation) must be performed outside the OT.

PPE Guidelines ¹⁰

Risk Definition	Patient Requirements	OT Personnel Requirements
HIGH RISK PATIENTS <ul style="list-style-type: none"> ○ COVID-19 positive ○ COVID-19 suspect 	Surgical Mask	As per the guidelines for COVID positive patients
OTHER PATIENTS <ul style="list-style-type: none"> ○ Negative on RT-PCR 24 hours before surgery ○ Asymptomatic till 14 days isolation after 	Face cover / surgical mask as per MoHFW's 'Additional guidelines on	<u>Aerosol Generating Procedures *</u> <ul style="list-style-type: none"> • N95 mask and eye protection (may be appropriate to reuse); • Must use face shield (to allow reuse)

admission	rational use of PPEs'	<ul style="list-style-type: none"> • Impermeable gown or gown with plastic apron • Double gloves • Powered Air-Purifying Respirator (PARP) for prolonged surgeries to minimize fogging and surgeon comfort <p><u>Non-Aerosol Generating Procedure</u></p> <ul style="list-style-type: none"> • Surgical mask • Goggles or face shield • Gown • Gloves
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*Most of the ENT operations involving upper aerodigestive tract including the common procedures summarised below would be considered aerosol generating.¹⁰

- Direct laryngoscopy, trachea-bronchoscopy, esophagoscopy
- Peritonsillar abscess drainage
- Nasal and paranasal sinus surgeries including nasal packing
- Foreign body retrieval from nose/ pharynx/ airway
- Tracheostomy
- Powered instrumentation in mucosal head and neck surgeries.

Procedure Specific Guidelines

Procedure	COVID Specific Modifications
Head and Neck Malignancy (may be considered as semi-emergent procedures)	<ul style="list-style-type: none"> • In case of pre-operative COVID positivity, surgeon should weigh the risk benefit of postponing surgery for 14 days or scheduling procedure in COVID-designated OT • Direct laryngoscopy to be avoided just for the sake of obtaining biopsy when FNAC from neck node can be considered • Day care surgery for early lesions preferable • Minimise use of powered instruments to prevent

	<p>aerosolization</p> <ul style="list-style-type: none"> • Avoid complex reconstructive procedures. • For prolonged surgeries, PAPP may be considered
Paranasal Sinus Surgery and Skull Base	<ul style="list-style-type: none"> • Level II PPE as recommended for aerosol generating category • Avoid in high risk category except in cases with life/ organ threatening complications
Otologic Surgery	<ul style="list-style-type: none"> • Level II PPE as recommended for aerosol generating category • To be postponed in high risk group except in cases with life/ organ threatening complications
Tracheostomy	<ul style="list-style-type: none"> ○ When feasible, GA following intubation should be considered. ○ If intubation is not feasible, consider superior laryngeal nerve block and inject lignocaine into the trachea prior to incising the trachea to reduce cough. ○ Transient apnoea to be maintained during the brief period tracheal incision to cuff inflation of inserted tracheostomy tube. ○ Closed suction system to be used and usage to be guarded. ○ Double lumen cuffed tube may be used to avoid frequent tube change due to tube blockage post-operatively ○ Heat moisture exchanger (HME) to be attached to tracheostomy tube when patient is shifted to ward ○ For high risk cases, a triple layer/ N95 mask may also be worn over the tracheostomy tube.

Note: These guidelines are dynamic and may be updated from time to time as required.

Annexure I :Screening proforma

a) Symptoms

Table 1-Symptoms for COVID-19 infection

Most common symptoms:	Less common symptoms:	Serious symptoms:
Fever Dry cough Tiredness	Aches and pains Sore throat Diarrhoea Conjunctivitis Headache Loss of taste or smell A rash on skin, or discolouration of fingers or toes	Difficulty breathing or shortness of breath Chest pain or pressure Loss of speech or movement

(a) Are you suffering from fever/cough/difficulty in breathing

(b) Are you residing in a containment zone

(c) Have you been in contact with a confirmed COVID-19 case in last 14 days

ENDOSCOPIES SOP:

1. Adequate patient preparation is mandatory
2. Explaining patient regarding procedure and advise him not to cough/ sneeze during procedure.
3. Mouth should be covered with 3-ply mask when possible.
4. Decongestion of nasal cavity with oxymetazoline drops
5. Lubrication of endoscope tip and adjacent area with xylocaine jelly. Xylocaine spray should be avoided
6. Recording preferably should be done so that repeat endoscopy can be avoided and for keeping record.
7. After endoscopy, endoscope should be sterilized by immersing in 2% glutaraldehyde solution for 20 minutes.

BIOPSY SOP:

1. Patient preparation should be done meticulously using xylocaine lozenges/ gargles.
2. Ensure proper functioning of bipolar cautery and illumination system before start of biopsy.
3. Instruments should be properly sterilized in autoclave after usage.
4. In case of vigorous cough by patient during procedure/ after biopsy, the area needs to be decontaminated before next procedure.

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सत्यमेव जयते

CLINICAL MANAGEMENT PROTOCOL: COVID-19

Government of India
Ministry of Health and Family Welfare
Directorate General of Health Services
(EMR Division)

Version 3
13.06.20

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1. Background

Coronaviruses are large group of viruses that cause illness in humans and animals. Rarely, animal coronaviruses can evolve and infect people and then spread between people such as has been seen with MERS and SARS. The outbreak of Novel coronavirus disease (COVID-19) was initially noticed in a seafood market in Wuhan city in Hubei Province of China in mid-December, 2019, has now spread to 214 countries/territories/areas worldwide. WHO (under International Health Regulations) has declared this outbreak as a “Public Health Emergency of International Concern” (PHEIC) on 30th January 2020. WHO subsequently declared COVID-19 a pandemic on 11th March, 2020.

2. Disease Epidemiology

Current available evidence for COVID-19 suggests that the causative virus (SARS-CoV-2) has a zoonotic source closely related to bat-origin SARS-like coronavirus. It is an enveloped RNA beta coronavirus related to the Severe Acute Respiratory Syndrome (SARS) virus, and the virus has been shown to use the angiotensin-converting enzyme 2 (ACE2) receptor for cell entry.

The persons infected by the novel coronavirus are the main source of infection. Direct person-to-person transmission occurs through close contact, mainly through respiratory droplets that are released when the infected person coughs, sneezes, or talks. These droplets may also land on surfaces, where the virus remains viable. Infection can also occur if a person touches an infected surface and then touches his or her eyes, nose, or mouth.

The median incubation period is 5.1 days (range 2–14 days). The precise interval during which an individual with COVID-19 is infectious is uncertain. As per the current evidence, the period of infectivity starts 2 days prior to onset of symptoms and lasts up to 8 days. The extent and role played by pre-clinical/ asymptomatic infections in transmission still remain under investigation.

3. Patho-physiology

Most patients with COVID-19 predominantly have a respiratory tract infection associated with SARS-CoV-2 infection. However, in a small proportion of cases, they can progress to a more severe and systemic disease characterized by the Acute Respiratory Distress Syndrome (ARDS), sepsis and septic shock, multiorgan failure, including acute kidney injury and cardiac injury.

Autopsy findings in China and European countries showed endothelial damage of pulmonary vasculature, microvascular thrombosis and hemorrhage linked to extensive alveolar and interstitial inflammation that ultimately result in COVID-19 vasculopathy, pulmonary intravascular coagulopathy, hypercoagulability, ventilation perfusion

mismatch, and refractory ARDS. Hypoxemia, secondary to ARDS may also activate the coagulation cascade.

4. Case definition¹

Suspect case

A. A patient with acute respiratory illness (fever and at least one sign/symptom of respiratory disease, e.g., cough, shortness of breath), AND a history of travel to or residence in a location reporting community transmission of COVID-19 disease during the 14 days prior to symptom onset;

OR

B. A patient with any acute respiratory illness AND having been in contact with a confirmed or probable COVID-19 case in the last 14 days prior to symptom onset;

OR

C. A patient with severe acute respiratory illness (fever and at least one sign/symptom of respiratory disease, e.g., cough, shortness of breath; AND requiring hospitalization) AND in the absence of an alternative diagnosis that fully explains the clinical presentation.

Probable case

A. A suspect case for whom testing for the COVID-19 virus is inconclusive.

OR

B. A suspect case for whom testing could not be performed for any reason.

Confirmed case

A person with laboratory confirmation of COVID-19 infection, irrespective of clinical signs and symptoms.

5. Clinical Features

COVID-19 patients reporting to various Covid treatment facilities have reported the following signs and symptoms:

- Fever
- Cough
- Fatigue
- Shortness of breath
- Expectoration
- Myalgia
- Rhinorrhea, sore throat, diarrhea

¹ As per WHO surveillance guidelines

- Loss of smell (anosmia) or loss of taste (ageusia) preceding the onset of respiratory symptoms has also been reported

Older people and immune-suppressed patients in particular may present with atypical symptoms such as fatigue, reduced alertness, reduced mobility, diarrhoea, loss of appetite, delirium, and absence of fever. Children might not have reported fever or cough as frequently as adults.

As per data from Integrated Health Information Platform (IHIP)/ Integrated Disease Surveillance Programme (IDSP) portal case investigation forms for COVID 19 (n=15,366), the details on the signs and symptoms reported are (as on 11.06.2020), fever (27%), cough (21%), sore throat (10%), breathlessness (8%), Weakness (7%), running nose (3%) and others 24%.

6. Risk factors

The major risk factors for severe disease are:

- Age more than 60 years (increasing with age).
- Underlying non-communicable diseases (NCDs): diabetes, hypertension, cardiac disease, chronic lung disease, cerebro-vascular disease, chronic kidney disease, immune-suppression and cancer

7. Clinical Severity

Table 1: Clinical severity and assessment parameters

Clinical Severity	Clinical presentation	Clinical parameters	Remarks
Mild	Patients with uncomplicated upper respiratory tract infection, may have mild symptoms such as fever, cough, sore throat, nasal congestion, malaise, headache	Without evidence of breathlessness or Hypoxia (normal saturation).	(i) Managed at Covid Care Centre (ii) Managed at home subject to fulfilment of conditions stipulated in guidelines ²

²Revised guidelines for Home Isolation of very mild/pre-symptomatic COVID-19 cases
<https://www.mohfw.gov.in/pdf/RevisedguidelinesforHomeisolationofverymildpresymptomaticCOVID19cases10May2020.pdf>

Moderate	Pneumonia with no signs of severe disease	<p>Adolescent or adult with presence of clinical features of dyspnea and or hypoxia, fever, cough, including SpO₂ <94% (range 90-94%) on room air, Respiratory Rate more or equal to 24 per minute.</p> <p>Child with presence of clinical features of dyspnea and or hypoxia, fever, cough, including SpO₂ <94% (range 90-94%) on room air, Respiratory Rate more or equal to 24 per minute.</p> <p>Fast breathing (in breaths/min): < 2 months: ≥ 60; 2–11 months: ≥ 50; 1–5 years: ≥ 40</p>	Managed in Dedicated Covid Health Centre (DCHC)
Severe	Severe Pneumonia	<p>Adolescent or adult: with clinical signs of Pneumonia plus one of the following; respiratory rate >30 breaths/min, severe respiratory distress, SpO₂ <90% on room air.</p> <p>Child with cough or difficulty in breathing, plus at least one of the following: central cyanosis or SpO₂ <90%; severe respiratory distress (e.g. grunting, chest in- drawing); signs of pneumonia with any of the following danger signs: inability to breastfeed or drink, lethargy or unconsciousness, or convulsions. Other signs of pneumonia may be present: chest in drawing, fast breathing (in breaths/min): <2 months ≥60; 2–11 months ≥50; 1–5 years ≥40.</p> <p>The diagnosis is clinical; chest imaging can exclude complications.</p>	Managed in Dedicated Covid Hospital

	<p>Acute Respiratory Distress Syndrome</p>	<p>Onset: new or worsening respiratory symptoms within one week of known clinical insult.</p> <p>Chest imaging (Chest X ray and portable bed side lung ultrasound): bilateral opacities, not fully explained by effusions, lobar or lung collapse, or nodules.</p> <p>Origin of Pulmonary infiltrates: respiratory failure not fully explained by cardiac failure or fluid overload. Need objective assessment (e.g. echocardiography) to exclude hydrostatic cause of infiltrates/ oedema if no risk factor present.</p> <p>Oxygenation impairment in adults:</p> <p><u>Mild ARDS:</u> $200 \text{ mmHg} < \text{PaO}_2/\text{FiO}_2 \leq 300 \text{ mmHg}$ (with PEEP or CPAP $\geq 5 \text{ cm H}_2\text{O}$)</p> <p><u>Moderate ARDS:</u> $100 \text{ mmHg} < \text{PaO}_2/\text{FiO}_2 \leq 200 \text{ mmHg}$ with PEEP $\geq 5 \text{ cm H}_2\text{O}$)</p> <p><u>Severe ARDS:</u> $\text{PaO}_2/\text{FiO}_2 \leq 100 \text{ mmHg}$ with PEEP $\geq 5 \text{ cm H}_2\text{O}$)</p> <p>When PaO₂ is not available, SpO₂/FiO₂ ≤ 315 suggests ARDS (including in non-ventilated patients)</p> <p>Oxygenation impairment in Children</p> <p>Note Oxygenation Index (OI) and OSI (Oxygen Saturation Index)</p> <p>Use OI when available. If PaO₂ not available, wean FiO₂ to maintain SpO₂ $< 97\%$ to calculate OSI or SpO₂/FiO₂ ratio:</p>	
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		<p>using SpO₂)</p> <p>Bi-level (NIV or CPAP) ≥ 5 cm H₂O via full face mask: PaO₂/FiO₂ ≤ 300 mmHg or SpO₂/FiO₂ ≤ 264</p> <p>Mild ARDS (invasively ventilated):</p> <p style="padding-left: 40px;">$4 \leq OI < 8$ or $5 \leq OSI < 7.5$</p> <p>Moderate ARDS (invasively ventilated): $8 \leq OI < 16$ or $7.5 \leq OSI < 12.3$</p> <p>Severe ARDS (invasively ventilated):</p> <p>$OI \geq 16$ or $OSI \geq 12.3$</p>	
Severe (Continued)	Sepsis	<p>Adults: Acute life-threatening organ dysfunction caused by a dys-regulated host response to suspected or proven infection. Signs of organ dysfunction include: altered mental status, difficult or fast breathing, low oxygen saturation, reduced urine output, fast heart rate, weak pulse, cold extremities or low blood pressure, skin mottling, or laboratory evidence of coagulopathy, thrombocytopenia, acidosis, high lactate or hyperbilirubinemia.</p> <p>Children: suspected or proven infection and ≥ 2 age based Systemic Inflammatory Response Syndrome (SIRS) criteria, of which one must be abnormal temperature or white blood cell count</p>	
	Septic Shock	<p>Adults: persisting hypotension despite volume resuscitation, requiring vasopressors to maintain MAP ≥ 65 mmHg and serum lactate level > 2 mmol/L</p> <p>Children: any hypotension (SBP < 5th centile or > 2 SD below</p>	

		<p>normal for age) or 2- 3 of the following: altered mental state; bradycardia or tachycardia (HR <90 bpm or</p> <p>>160 bpm in infants and HR <70 bpm or >150 bpm in children); prolonged capillary refill (>2 sec) or weak pulse; tachypnea; mottled or cool skin or petechial or purpuric rash; high lactate; reduced urine output ; hyperthermia or hypothermia</p>	
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8. Infection Prevention and Control Practices³

Infection prevention control (IPC) is a critical and integral part of clinical management of patients and should be initiated at the point of entry of the patient to hospital (typically the Emergency Department). Standard precautions should always be routinely applied in all areas of health care facilities. Standard precautions include hand hygiene; use of PPE to avoid direct contact with patients' blood, body fluids, secretions (including respiratory secretions) and non-intact skin. Standard precautions also include prevention of needle-stick or sharps injury; safe waste management; cleaning and disinfection of equipment; and cleaning of the environment.

Table 2: Infection prevention control practices

At triage	<p>Give suspect patient a triple layer surgical mask and direct patient to separate area, an isolation room if available. Keep at least 1meter distance between suspected patients and other patients. Instruct all patients to cover nose and mouth during coughing or sneezing with tissue or flexed elbow for others. Perform hand hygiene after contact with respiratory secretions</p>
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³ National guidelines for infection prevention and control in healthcare facilities <https://www.mohfw.gov.in/pdf//National%20Guidelines%20for%20IPC%20in%20HCF%20-%20final%281%29.pdf>

<p>Apply standard precautions</p>	<p>Apply standard precautions according to risk assessment for all patients, at all times, when providing any diagnostic and care services. Standard precautions include hand hygiene and the use of personal protective equipment (PPE) when risk of splashes or in contact with patients' blood, body fluids, secretions (including respiratory secretions) and non-intact skin. Standard precautions also include appropriate patient placement; prevention of needle-stick or sharps injury; safe waste management; cleaning and disinfection of equipment; and cleaning of the environment. Best practices for safely managing health care waste should be followed.</p>
<p>Apply droplet precautions</p>	<p>Droplet precautions prevent large droplet transmission of respiratory viruses. Use a triple layer surgical mask if working within 1-2 meters of the patient. Place patients in single rooms, or group together those with the same etiological diagnosis. If an etiological diagnosis is not possible, group patients with similar clinical diagnosis and based on epidemiological risk factors, with a spatial separation. When providing care in close contact with a patient with respiratory symptoms (e.g. coughing or sneezing), use eye protection (face-mask or goggles), because sprays of secretions may occur. Limit patient movement within the institution and ensure that patients wear triple layer surgical masks when outside their rooms</p>
<p>Apply contact precautions</p>	<p>Droplet and contact precautions prevent direct or indirect transmission from contact with contaminated surfaces or equipment (i.e. contact with contaminated oxygen tubing/interfaces). Use PPE (triple layer surgical mask, eye protection, gloves and gown) when entering room and remove PPE when leaving. If possible, use either disposable or dedicated equipment (e.g. stethoscopes, blood pressure cuffs and thermometers). If equipment needs to be shared among patients, clean and disinfect between each patient use. Ensure that health care workers refrain from touching their eyes, nose, and mouth with potentially contaminated gloved or ungloved hands. Avoid contaminating environmental surfaces that are not directly related to patient care (e.g. door handles and light switches). Ensure adequate room ventilation. Avoid movement of patients or transport. Perform hand hygiene.</p>

<p>Apply airborne precautions when performing an aerosol generating procedure</p>	<p>Ensure that healthcare workers performing aerosol-generating procedures (i.e. open suctioning of respiratory tract, intubation, bronchoscopy, cardiopulmonary resuscitation) use PPE, including gloves, long-sleeved gowns, eye protection, and fit-tested particulate respirators (N95). (The scheduled fit test should not be confused with user seal check before each use.) Whenever possible, use adequately ventilated single rooms when performing aerosol-generating procedures, meaning negative pressure rooms with minimum of 12 air changes per hour or at least 160 liters/second/patient in facilities with natural ventilation. Avoid the presence of unnecessary individuals in the room. Care for the patient in the same type of room after mechanical ventilation commences.</p> <p>Because of uncertainty around the potential for aerosolization, high-flow nasal oxygen (HFNO), NIV, including bubble CPAP, should be used with airborne precautions until further evaluation of safety can be completed. There is insufficient evidence to classify nebulizer therapy as an aerosol-generating procedure that is associated with transmission of COVID-19. More research is needed.</p>
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9. Laboratory Diagnosis

Guidance on specimen collection, processing, transportation, including related biosafety procedures, is available at:

https://www.mohfw.gov.in/pdf/5Sample%20collection_packaging%20%202019-nCoV.pdf

Sample collection

Preferred sample Throat and nasal swab in viral transport media (VTM) and transported in cold chain.

Alternate Nasopharyngeal swab, BAL or endotracheal aspirate which has to be mixed with the viral transport medium and transported in cold chain.

General guidelines

- Use appropriate PPE for specimen collection (droplet and contact precautions for URT specimens; airborne precautions for LRT specimens). Maintain proper infection control when collecting specimens
- Restricted entry to visitors or attendants during sample collection
- Complete the requisition form for each specimen submitted
- Proper disposal of all waste generated

Respiratory specimen collection methods:

A. Lower respiratory tract

- Bronchoalveolar lavage, tracheal aspirate, sputum
- Collect 2-3 mL into a sterile, leak-proof, screw-cap sputum collection cup or sterile dry container.

B. Upper respiratory tract

- Nasopharyngeal swab AND oropharyngeal swab

Oropharyngeal swab (e.g. throat swab): Tilt patient's head back 70 degrees. Rub swab over both tonsillar pillars and posterior oropharynx and avoid touching the tongue, teeth, and gums. Use only synthetic fiber swabs with plastic shafts. Do not use calcium alginate swabs or swabs with wooden shafts. Place swabs immediately into sterile tubes containing 2-3 ml of viral transport media.

Combined nasal & throat swab: Tilt patient's head back 70 degrees. While gently rotating the swab, insert swab less than one inch into nostril (until resistance is met at turbinates). Rotate the swab several times against nasal wall and repeat in other nostril using the same swab. Place tip of the swab into sterile viral transport media tube and cut off the applicator stick. For throat swab, take a second dry polyester swab, insert into mouth, and swab the posterior pharynx and tonsillar areas (avoid the tongue). Place tip of swab into the same tube and cut off the applicator tip.

Nasopharyngeal swab: Tilt patient's head back 70 degrees. Insert flexible swab through the nares parallel to the palate (not upwards) until resistance is encountered or the distance is equivalent to that from the ear to the nostril of the patient. Gently, rub and roll the swab. Leave the swab in place for several seconds to absorb secretions before removing.

Clinicians may also collect lower respiratory tract samples when these are readily available (for example, in mechanically ventilated patients). In hospitalized patients in Dedicated Covid Hospitals (severe cases with confirmed COVID - 19 infection, repeat upper respiratory tract samples should be collected to demonstrate viral clearance.

Recommended Test

Real time or Conventional RT-PCR test is recommended for diagnosis. SARS-CoV-2 antibody tests are not recommended for diagnosis of current infection with COVID-19.

Dual infections with other respiratory infections (viral, bacterial and fungal) have been found in COVID-19 patients. Depending on local epidemiology and clinical symptoms, test for other potential etiologies (e.g. Influenza, other respiratory viruses, malaria, dengue fever, typhoid fever) as appropriate.

For COVID-19 patients with severe disease, also collect blood cultures, ideally prior to initiation of antimicrobial therapy

10. Management of COVID-19: symptomatic treatment

10.1. Management of Mild Cases

In the containment phase, patients with suspected or confirmed mild COVID-19 are being isolated to break the chain of transmission. Patients with mild disease may present to primary care/outpatient department, or detected during community outreach activities, such as home visits or by telemedicine.

Mild cases can be managed at Covid Care Centre, First Referral Units (FRUs), Community Health Centre (CHC), sub-district and district hospitals or at home subject to conditions stipulated in the home isolation guidelines available at

<https://www.mohfw.gov.in/pdf/RevisedguidelinesforHomeisolationofverymildpresymptomaticCOVID19cases10May2020.pdf>

Detailed clinical history is taken including that of co-morbidities. Patient is followed up daily for temperature, vitals and Oxygen saturation (SpO₂).

Counsel patients with mild COVID-19 about signs and symptoms of complications that should prompt urgent care. Patients with risk factors for severe illness should be monitored closely, given the possible risk of deterioration. If they develop any worsening symptoms (such as light headedness, difficulty breathing, chest pain, dehydration, etc.), they should be immediately admitted to a Dedicated Covid Health Centre or Dedicated Covid Hospital.

Caregivers of children with mild COVID-19 should monitor for signs and symptoms of clinical deterioration requiring urgent re-evaluation. These include difficulty in breathing/fast or shallow breathing (for infants: grunting, inability to breastfeed), blue lips or face, chest pain or pressure, new confusion, inability to awaken/not interacting when awake, inability to drink or keep down any liquids.

Mild COVID-19 cases may be given symptomatic treatment such as antipyretic (Paracetamol) for fever and pain, adequate nutrition and appropriate rehydration. Tab Hydroxychloroquine (HCQ) may be considered for any of those having high risk features for severe disease (such as age > 60; Hypertension, diabetes, chronic lung/kidney/ liver disease, Cerebrovascular disease and obesity) under strict medical supervision.

10.2. Management of Moderate Cases

Patients with suspected or confirmed moderate COVID-19 (pneumonia) is to be isolated to contain virus transmission. Patients with moderate disease may present to an emergency unit or primary care/outpatient department, or be encountered during community surveillance activities, such as active house to house search or by telemedicine.

The defining clinical assessment parameters are Respiratory Rate of more than or equal to 24 and oxygen saturation (SpO₂) of less than 94% on room air (range 90-94%).

Such patients will be isolated in Dedicated Covid Health Centre (DCHC) or District hospital or Medical College hospitals.

The patient will undergo detailed clinical history including co-morbid conditions, measurement of vital signs, Oxygen saturation (SpO₂) and radiological examination of Chest X-ray, Complete Blood Count and other investigations as indicated.

Antibiotics should not be prescribed routinely unless there is clinical suspicion of a bacterial infection.

Clinical Management of Moderate cases

Oxygen Support:

- Target SpO₂: 92-96% (88-92% in patients with COPD)
- The device for administering oxygen (nasal prongs, mask, or masks with breathing / non-rebreathing reservoir bag) depends upon the increasing requirement of oxygen therapy. If HFNC or simple nasal cannula is used, N95 mask should be applied over it.
- Awake proning may be used as a rescue therapy. (Protocol at Annexure-I)
- All patients should have daily 12-lead ECG
- Follow CRP, D-dimer & Ferritin every 48-72 hourly (if available); CBC with differential count, Absolute Lymphocyte count, KFT/LFT daily
- Tab. Hydroxychloroquine (400mg) BD on 1st day followed by 200mg 1 BD for 4 days. (after ECG Assessment)
- Consider IV methylprednisolone 0.5 to 1 mg/kg for 3 days (preferably within 48 hours of admission or if oxygen requirement is increasing and if inflammatory markers are increased)

Anticoagulation

- Prophylactic dose of UFH or LMWH (e.g., enoxaparin 40 mg per day SC)
- Control of co-morbid condition
- Monitor for:
 - Increased work of breathing (use of accessory muscles)
 - Hemodynamic instability
 - Increase in oxygen requirement

If any of the above occurs, shift to Dedicated Covid Hospital

Few patients with COVID-19 experience a secondary bacterial infection. Consider empiric antibiotic therapy as per local antibiogram and guidelines in older people, immune-compromised patients, and children < 5 years of age.

Close monitoring of patients with moderate COVID-19 is required for signs or symptoms of disease progression. Provision of mechanisms for follow up and transportation to Dedicated Covid Hospital should be available.

10.3. Management of Severe Cases

10.3.1 Early supportive therapy and monitoring

- a. Give supplemental oxygen therapy immediately to patients with Severe Covid and respiratory distress, hypoxaemia, or shock: Initiate oxygen therapy at 5 L/min and titrate flow rates to reach target SpO₂ ≥ 90% in non-pregnant adults and SpO₂ ≥ 92-96% in pregnant patients. Children with emergency signs (obstructed or absent breathing, severe respiratory distress, central cyanosis, shock, coma or convulsions) should receive oxygen therapy during resuscitation to target SpO₂ ≥ 94%. All areas where patients with Severe Covid are cared for should be equipped with pulse oximeters, functioning oxygen systems and disposable, single-use, oxygen-delivering interfaces (nasal cannula, simple face mask, and mask with reservoir bag). Use contact precautions when handling contaminated oxygen interfaces of patients with COVID – 19.
- b. Use conservative fluid management in patients with Severe Covid when there is no evidence of shock.

10.3.2 Management of hypoxemic respiratory failure and ARDS

Recognize severe hypoxemic respiratory failure when a patient with respiratory distress is failing standard oxygen therapy. Patients may continue to have increased work of breathing or hypoxemia even when oxygen is delivered via a face mask with reservoir bag (flow rates of 10-15 L/min, which is typically the minimum flow required to maintain bag inflation; FiO₂ 0.60-0.95). Hypoxemic respiratory failure in ARDS commonly results from intrapulmonary ventilation-perfusion mismatch or shunt and usually requires mechanical ventilation.

High – Flow Nasal Cannula oxygenation (HFNO) or non – invasive mechanical ventilation:

When respiratory distress and/or hypoxemia of the patient cannot be alleviated after receiving standard oxygen therapy, high – flow nasal cannula oxygen therapy or non – invasive ventilation can be considered. Compared to standard oxygen therapy, HFNO reduces the need for intubation. Patients with hypercapnia (exacerbation of obstructive lung disease, cardiogenic pulmonary oedema), hemodynamic instability, multi-organ failure, or abnormal mental status should generally not receive HFNO, although emerging data suggest that HFNO may be safe in patients with mild-moderate and non-worsening hypercapnia. Patients receiving HFNO should be in a monitored setting and cared for by experienced personnel capable of endotracheal

intubation in case the patient acutely deteriorates or does not improve after a short trial (about 1 hr).

There has been concerns raised about generation of aerosols while using HFNO and NIV. However, recent publications suggest that newer HFNO and NIV systems with good interface fitting do not create widespread dispersion of exhaled air and therefore should be associated with low risk of airborne transmission. If conditions do not improve or even get worse within a short time (1 – 2 hours), tracheal intubation and invasive mechanical ventilation should be used in a timely manner.

- Endotracheal intubation should be performed by a trained and experienced provider using airborne precautions. Patients with ARDS, especially young children or those who are obese or pregnant, may de-saturate quickly during intubation. Pre-oxygenate with 100% FiO₂ for 5 minutes, via a face mask with reservoir bag, bag-valve mask, HFNO, or NIV. Rapid sequence intubation is appropriate after an airway assessment that identifies no signs of difficult intubation.
- Implement mechanical ventilation using lower tidal volumes (4–8 ml/kg predicted body weight, PBW) and lower inspiratory pressures (plateau pressure <30 cmH₂O). This is a strong recommendation from a clinical guideline for patients with ARDS, and is suggested for patients with sepsis-induced respiratory failure. The initial tidal volume is 6 ml/kg PBW; tidal volume up to 8 ml/kg PBW is allowed if undesirable side effects occur (e.g. dys-synchrony, pH <7.15). Hypercapnia is permitted if meeting the pH goal of 7.30-7.45. Ventilator protocols are available. The use of deep sedation may be required to control respiratory drive and achieve tidal volume targets.
- In patients with severe ARDS, prone ventilation for 16-18 hours per day is recommended but requires sufficient human resources and expertise to be performed safely. (Refer to Annexure-I)
- In patients with moderate or severe ARDS, higher PEEP instead of lower PEEP is suggested. PEEP titration requires consideration of benefits (reducing atelectrauma and improving alveolar recruitment) vs. risks (end-inspiratory overdistension leading to lung injury and higher pulmonary vascular resistance). Tables are available to guide PEEP titration based on the FiO₂ required to maintain SpO₂. In patients with moderate-severe ARDS (PaO₂/FiO₂<150), neuromuscular blockade by continuous infusion should not be routinely used.
- In settings with access to expertise in extracorporeal life support (ECLS), consider referral of patients with refractory hypoxemia despite lung protective ventilation. ECLS should only be offered in expert centres with a sufficient case volume to maintain expertise and that can apply the IPC measures required for COVID – 19 patients.
- Avoid disconnecting the patient from the ventilator, which results in loss of PEEP and atelectasis. Use in-line catheters for airway suctioning and clamp endotracheal tube when disconnection is required (for example, transfer to a transport ventilator).

10.3.3. Management of septic shock

- Recognize septic shock in adults when infection is suspected or confirmed AND vasopressors are needed to maintain mean arterial pressure (MAP) ≥ 65 mmHg AND lactate is >2 mmol/L, in absence of hypovolemia. Recognize septic shock in children with any hypotension (systolic blood pressure [SBP] <5 th centile or >2 SD below normal for age) or two of the three of the following: altered mental state; tachycardia or bradycardia (HR <90 bpm or >160 bpm in infants and HR <70 bpm or >150 bpm in children); prolonged capillary refill (>2 sec) or warm vasodilation with bounding pulses; tachypnea; mottled skin or petechial or purpuric rash; increased lactate; oliguria; hyperthermia or hypothermia.
- In the absence of a lactate measurement, use MAP and clinical signs of perfusion to define shock. Standard care includes early recognition and the following treatments within 1 hour of recognition: antimicrobial therapy and fluid loading and vasopressors for hypotension. The use of central venous and arterial catheters should be based on resource availability and individual patient needs.
- In resuscitation from septic shock in adults, give at least 30 ml/kg of isotonic crystalloid in adults in the first 3 hours. In resuscitation from septic shock in children in well-resourced settings, give 20 ml/kg as a rapid bolus and up to 40-60 ml/kg in the first 1 hr. Do not use hypotonic crystalloids, starches, or gelatins for resuscitation.
- Fluid resuscitation may lead to volume overload, including respiratory failure. If there is no response to fluid loading and signs of volume overload appear (for example, jugular venous distension, crackles on lung auscultation, pulmonary oedema on imaging, or hepatomegaly in children), then reduce or discontinue fluid administration. This step is particularly important where mechanical ventilation is not available. Alternate fluid regimens are suggested when caring for children in resource-limited settings.
- Crystalloids include normal saline and Ringer's lactate. Determine need for additional fluid boluses (250-1000 ml in adults or 10-20 ml/kg in children) based on clinical response and improvement of perfusion targets. Perfusion targets include MAP (>65 mmHg or age-appropriate targets in children), urine output (>0.5 ml/kg/hr in adults, 1 ml/kg/hr. in children), and improvement of skin mottling, capillary refill, level of consciousness, and lactate. Consider dynamic indices of volume responsiveness to guide volume administration beyond initial resuscitation based on local resources and experience. These indices include passive leg raising test, fluid challenges with serial stroke volume measurements, or variations in systolic pressure, pulse pressure, inferior vena cava size, or stroke volume in response to changes in intrathoracic pressure during mechanical ventilation.
- Administer vasopressors when shock persists during or after fluid resuscitation. The initial blood pressure target is MAP ≥ 65 mmHg in adults and age-appropriate targets in children.
- If central venous catheters are not available, vasopressors can be given through a peripheral IV, but use a large vein and closely monitor for signs of extravasation and

local tissue necrosis. If extravasation occurs, stop infusion. Vasopressors can also be administered through intraosseous needles.

- If signs of poor perfusion and cardiac dysfunction persist despite achieving MAP target with fluids and vasopressors, consider an inotrope such as dobutamine.

10.3.4. Other therapeutic measures

For patients with progressive deterioration of oxygenation indicators, rapid worsening on imaging and excessive activation of the body's inflammatory response, glucocorticoids can be used for a short period of time (3 to 5 days). It is recommended that dose should not exceed the equivalent of methylprednisolone 1 – 2mg/kg/day. Note that a larger dose of glucocorticoid will delay the removal of coronavirus due to immunosuppressive effects.

Prophylactic dose of UFH or LMWH (e.g., enoxaparin 40 mg per day SC) should be given for anti-coagulation. Control of co-morbid conditions should be ensured.

For pregnant severe cases, consultations with obstetric, neonatal, and intensive care specialists (depending on the condition of the mother) are essential. Patients often suffer from anxiety and fear and they should be supported by psychological counseling.

Note – An algorithm for clinical guidance for management of COVID-19 suspect/confirmed case is placed at Annexure-II.

11. Investigational Therapies⁴

At present, use of these therapies is based on a limited available evidence. As the situation evolves, and when more data become available, the evidence will be accordingly incorporated, and recommendation upgraded. Further, use of these drugs is subjected to limited availability in the country as of now. Currently, these drugs should only be used in a defined subgroup of patients:

- i. **Remdesivir** (under Emergency Use Authorization) may be considered in patients with moderate disease (those on oxygen) with none of the following contraindications:
 - AST/ALT > 5 times Upper limit of normal (ULN)
 - Severe renal impairment (i.e., eGFR < 30ml/min/m² or need for hemodialysis)
 - Pregnancy or lactating females
 - Children (< 12 years of age)

Dose: 200 mg IV on day 1 followed by 100 mg IV daily for 5 days

⁴This document will be updated as more data emerge. The document contains some potential off label/investigational use of medications and is based on a consensus of experts along with the available evidence. An informed and shared decision making is essential before prescribing any of these therapies.

ii. **Convalescent plasma** (Off Label) may be considered in patients with moderate disease who are not improving (oxygen requirement is progressively increasing) despite use of steroids. Special prerequisites while considering convalescent plasma include:

- ABO compatibility and cross matching of the donor plasma
- Neutralizing titer of donor plasma should be above the specific threshold (if the latter is not available, plasma IgG titer (against S-protein RBD) above 1:640 should be used)
- Recipient should be closely monitored for several hours post transfusion for any transfusion related adverse events
- Use should be avoided in patients with IgA deficiency or immunoglobulin allergy

Dose: Dose is variable ranging from 4 to 13 ml/kg (usually 200 ml single dose given slowly over not less than 2 hours)

iii. **Tocilizumab** (Off Label) may be considered in patients with moderate disease with progressively increasing oxygen requirements and in mechanically ventilated patients not improving despite use of steroids. Long term safety data in COVID 19 remains largely unknown. Special considerations before its use include:

- Presence of raised inflammatory markers (e.g., CRP, Ferritin, IL-6)
- Patients should be carefully monitored post Tocilizumab for secondary infections and neutropenia
- Active infections and Tuberculosis should be ruled out before use.

Dose: 8mg/kg (maximum 800 mg at one time) given slowly in 100 ml NS over 1 hour; dose can be repeated once after 12 to 24 hours if needed

12. Repurposed or off-label therapies

Hydroxychloroquine: This drug has demonstrated in vitro activity against SARS-CoV2 and was shown to be clinically beneficial in several small single center studies though with significant limitations. Nonetheless, several large observational studies with severe methodologic limitations have shown no effect on mortality or other clinically meaningful outcomes. As such, the evidence base behind its use remains limited as with other drugs and should only be used after shared decision making with the patients while awaiting the results of ongoing studies. As is the case with other antivirals, this drug should be used as early in the disease course as possible to achieve any meaningful effects and should be avoided in patients with severe disease. An ECG should ideally be done before prescribing the drug to measure QTc interval (and HCQ avoided if QTc is >500 ms)

Dose: 400 mg BD on day 1 followed by 400mg daily for next 4 days.

13. Prevention of complications

Implement the following interventions (Table 3) to prevent complications associated with critical illness. These interventions are based on Surviving Sepsis or other guidelines, and are generally limited to feasible recommendations based on high quality evidence.

Table 3: Prevention of complications

Anticipated Outcome	Interventions
Reduce days of invasive mechanical ventilation	<ul style="list-style-type: none"> • Use weaning protocols that include daily assessment for readiness to breathe spontaneously • Minimize continuous or intermittent sedation, targeting specific titration endpoints (light sedation unless contraindicated) or with daily interruption of continuous sedative infusions
Reduce incidence of ventilator associated pneumonia	<ul style="list-style-type: none"> • Oral intubation is preferable to nasal intubation in adolescents and adults • Keep patient in semi-recumbent position (head of bed elevation 30-45°) • Use a closed suctioning system; periodically drain and discard condensate in tubing • Use a new ventilator circuit for each patient; once patient is ventilated, change circuit if it is soiled or damaged but not routinely • Change heat moisture exchanger when it malfunctions, when soiled, or every 5–7 days
Reduce incidence of venous thromboembolism	<ul style="list-style-type: none"> • Use pharmacological prophylaxis (low molecular-weight heparin [preferred if available] or heparin 5000 units subcutaneously twice daily) in adolescents and adults without contraindications. For those with contraindications, use mechanical prophylaxis (intermittent pneumatic compression devices).
Reduce incidence of catheter related bloodstream infection	<ul style="list-style-type: none"> • Use a checklist with completion verified by a real-time observer as reminder of each step needed for sterile insertion and as a daily reminder to remove catheter if no longer needed
Reduce incidence of pressure Ulcers	<ul style="list-style-type: none"> • Turn patient every two hours
Reduce Incidence of stress ulcers and gastrointestinal bleeding	<ul style="list-style-type: none"> • Give early enteral nutrition (within 24-48 hours of admission) • Administer histamine-2 receptor blockers or proton-pump inhibitors in patients with risk factors for GI bleeding. Risk factors for gastrointestinal bleeding include mechanical ventilation ≥ 48 hours, coagulopathy, renal replacement therapy, liver disease, multiple co-morbidities, and higher organ failure score
Reduce incidence of ICU-related weakness	<ul style="list-style-type: none"> • Actively mobilize the patient early in the course of illness when safe to do so

Annexure- I

Early self-proning in awake, non-intubated patients

- Any COVID-19 patient with respiratory embarrassment severe enough to be admitted to the hospital may be considered for rotation and early self-proning.
- Care must be taken to not disrupt the flow of oxygen during patient rotation
- Typical protocols include 30–120 minutes in prone position, followed by 30–120 minutes in left lateral decubitus, right lateral decubitus, and upright sitting position
(*Caputo ND, Strayer RJ, Levitan R. Academic Emergency Medicine 2020;27:375–378*)

Requirements for safe prone positioning in ARDS

- Preoxygenate the patient with FiO₂ 1.0
- Secure the endotracheal tube and arterial and central venous catheters
- Adequate number of staff to assist in the turn and to monitor the turn
- Supplies to turn (pads for bed, sheet, protection for the patient)
- Knowledge of how to perform the turn as well as how to supine the patient in case of an emergency

Contraindications to prone ventilation

- Spinal instability requires special care
- Intra cranial pressure may increase on turning
- Rapidly return to supine in case of CPR or defibrillation

When to start proning?

- P/F ratio <150 while being ventilated with FiO₂ >0.6 and PEEP >5 cm H₂O

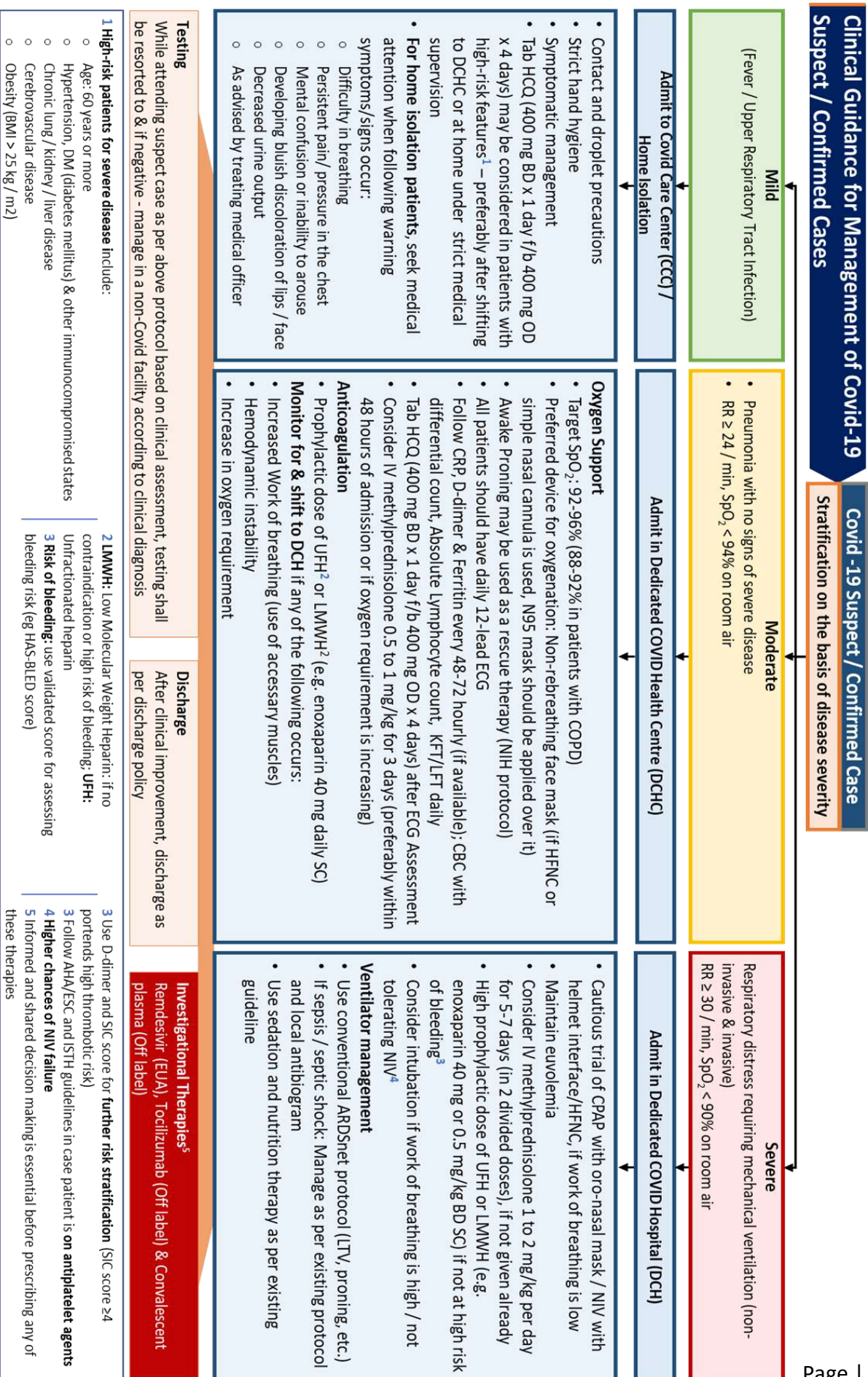
When to stop proning?

- When P/F exceeds 150 on FiO₂ ≥ 0.6 and ≥ 6 PEEP

What portion of the day should patients be kept prone?

- As much as possible (16-18 hours a day)
- Adult patients with severe ARDS receive prone positioning for more than 12 hours per day (strong recommendation, moderate-high confidence in effect estimates)
(*ATS-ERS Guideline. Am J Respir Crit Care Med;2017;195(9):1253-1263*)

Annexure - II



Dated 18th June, 2020

Ministry of Health & Family Welfare
Directorate General of Health Services
(EMR Division)

Advisory for managing Health care workers working in COVID and Non-COVID areas of the hospital

1. Background

The health care personnel working in hospitals are at increased risk of acquiring the COVID-19 disease, if there is a breach in the personal protection while managing patients.

The health-work force is a valuable and scarce resource. Large number of COVID-19 affected health personnel getting isolated for treatment and their close contacts undergoing quarantine affects the health/hospital service delivery.

2. Purpose of the document

The purpose of the document is to provide guidance on preventive measures, isolation and quarantine of health care functionaries.

3. Institutional Mechanism for preventing and responding to Healthcare Associated Infections (HAIs) among HCWs

Hospitals shall activate its Hospital Infection Control Committee (HICC). The HICC in the health facility is responsible for implementing the Infection Prevention and Control (IPC) activities and organizing regular trainings on IPC for HCWs.

A Nodal Officer (Infection Control Officer) shall be identified by each hospital to address all matters related to Healthcare Associated Infections (HAIs). With reference to preventing such infection among healthcare workers, he/she will ensure that:

- i. Healthcare workers in different settings of hospitals shall use PPEs appropriate to their risk profile as detailed in the guidelines issued by this Ministry (available at: <https://www.mohfw.gov.in/pdf/GuidelinesonrationaluseofPersonalProtectiveEquipment.pdf> and <https://www.mohfw.gov.in/pdf/UpdatedAdditionalguidelinesonrationaluseofPersonalProtectiveEquipmentsettingapproachforHealthfunctionariesworkinginnonCOVID19areas.pdf>)
- ii. All healthcare workers have undergone training on Infection Prevention and Control and they are aware of common signs and symptoms, need for self-health monitoring and need for prompt reporting of such symptoms.
- iii. Provisions have been made for regular (thermal) screening of all hospital staff.
- iv. All healthcare workers managing COVID-19 cases are being provided with chemo-prophylaxis under medical supervision.
- v. Provisions have been made for prompt reporting of breach of PPE by the hospital staff and follow up action.

4. Action for Healthcare Workers

- i. Ensure that all preventive measures like frequent washing of hands/use of alcohol based hand sanitizer, respiratory etiquettes (using tissue/handkerchief while coughing or sneezing), etc. are followed at all times.
- ii. He/she shall use appropriate PPE at all times while on duty.
- iii. A buddy system* to be followed to ensure that there is no breach in infection prevention control practices.
- iv. Any breach in PPE and exposure is immediately informed to the nodal officer/HoD of the department
- v. HCWs after leaving the patient care units (wards/OPDs/ICUs) at the doctor's duty rooms/hostels/canteen or outside the HCF must follow social distancing and masking to prevent transmission to/acquiring infection from other HCWs who may be positive.
- vi. Pregnant/lactating mothers and immuno-compromised healthcare workers shall inform their medical condition to the hospital authorities for them to get posted only in non-Covid areas.

*Buddy system: Under this approach, two or more-person team is formed amongst the deployed hospital staff who share responsibilities for his/her partner's safety and well-being in the context of (i) Appropriately donning and doffing of PPEs, (ii) maintaining hand hygiene and (iii) taking requisite steps on observing breach of PPEs.

5. SOP for health work force deployment during COVID-19

5.1 SOP to be followed in case HCW reports exposure/breach of PPE

All the Healthcare workers must report every exposure to COVID-19 to the concerned nodal officer and HoD of the concerned department immediately.

The Nodal officer will get the exact details of exposure to ascertain whether the exposure constitutes a high risk or low risk exposure as described below:

- **High risk exposure:**
 - HCW or other person providing care to a COVID-19 case or lab worker handling respiratory specimens from COVID-19 cases without recommended PPE or with possible breach of PPE
 - Performed aerosol generating procedures without appropriate PPE.
 - HCWs without mask/face-shield/goggles:
 - having face to face contact with COVID-19 case within 1 metre for more than 15 minutes
 - having accidental exposure to body fluids
- **Low risk exposure:**
 - Contacts who do not meet criteria of high risk exposure

The Nodal Officer/Head of the Department will form a sub-committee to assess the level of exposure and the risk as per assessment format at Annexure I. As per their assessment:

- For doctors, nursing officers and other health workers with high risk exposure, the quarantine period shall be initially for one week only.

- Thereafter taking profile of such doctors, nursing officers and other health workers, a decision shall be taken by the Nodal Officer/Head of the Department (or his appointed Sub-committee) for further period of one week.
- After a week, they shall be tested as per ICMR testing protocol, actively monitored for development of symptoms and managed as per laid down protocol.
 - If they test positive but remain asymptomatic they will follow protocol for very mild/mild/pre-symptomatic cases as described in para 5.2.1 (a) below.
 - If they test negative and remain asymptomatic, complete 14 day quarantine and return to work.
 - Should symptoms develop, follow the guidance para 5.2.
- Low risk contacts shall continue to work. They will self-monitor their health for development of symptoms. In case symptoms develop, the guidance under para 5.2 would be followed.

5.2 SOP to be followed in case HCW reports symptoms suggestive of COVID-19

5.2.1 If any healthcare worker who is manifesting signs and symptoms suggestive of COVID-19, he/she will be isolated immediately and the following procedure will follow:

- a. In case of mild/very mild/pre-symptomatic case, he/she will have an option of home isolation, subject to the conditions stipulated in the revised guidelines for home isolation of very mild/pre-symptomatic COVID-19 cases (available at: <https://www.mohfw.gov.in/pdf/RevisedguidelinesforHomeIsolationofverymildpresymptomaticCOVID19cases10May2020.pdf>). Such cases would end their home isolation as per timeline provided in the said guidelines.
- b. In cases where home isolation is not feasible, such mild/very mild/pre-symptomatic cases will be admitted to a COVID Care Center[#].
- c. Moderate cases that require oxygen therapy shall be managed at a Dedicated COVID Health Center[#]
- d. Severe cases will be managed in a Dedicated COVID Hospital[#].

For cases admitted COVID Health facilities, their discharge will be governed guidelines available at: <https://www.mohfw.gov.in/pdf/ReviseddischargePolicyforCOVID19.pdf>

[#] The details of categorization of health facilities as COVID Care center, Dedicated COVID Health Center and Dedicated COVID Hospitals along with categorization of patients (mild/moderate/severe) is available at: <https://www.mohfw.gov.in/pdf/FinalGuidanceonMangaementofCovidcasesversion2.pdf>.

5.2.2 Those who test negative, will be managed as in non-COVID area as per their clinical diagnosis. Their resuming work will be based on the clinical diagnosis and the medical certification by the treating doctor.

5.2.3 For HCWs (with low risk exposure), who continue to work and develop symptoms:

- And test positive, further management would be based on their clinical presentation and as described in para 5.2 (1) (a) above
- Those who test negative, will return to work subject to medical certification for ailment

5.2.4 Discharge of COVID-19 positive HCWs will be in accordance with the discharge policy (available at: <https://www.mohfw.gov.in/pdf/ReviseddischargePolicyforCOVID19.pdf>).

5.3 Regular quarantine of healthcare workers after performing duty in COVID-19 areas

Quarantine of healthcare workers, other than what is stipulated above is not warranted.

GOVERNMENT OF MAHARASHTRA

No.- Corona-2020/CR No.58/Aa-5
Public Health Department
G T Hospital Complex Building
10th Floor, Mantralaya, Mumbai-1
psec.pubhealth@maharashtra.gov.in
Date : 22.06.2020

To

Dean, Govt. Medical Colleges (All)
Deputy Director of Health Services i/c circle (All)
Civil Surgeon, District Hospital (All)
District Health Services, Zilla Parishad (All)
Medical Officer of Health, Municipal Corporation, (All)
Executive Health Officer, Gr. Mumbai Municipal Corporation, Mumbai

Subject: **Standard Treatment Protocol for Covid-19 Positive patients
(Revision 2 : 22-6-2020)**

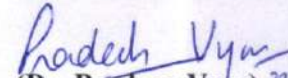
- Reference
- 1) Letter No. संआसे/कोरोना/सुधारित प्रोटोकॉल/कक्ष-५८/५७६०-५८४०/
२०२० dated 30 March 2020 issued under joint signature of
Director of Health Service, Pune & DMER, Mumbai
 - 2) Letter No. संआसे/कोरोना/Treatment Protocol/कक्ष-५८/९०७०-९१८९/
२०२० dated 15 April 2020 issued under joint signature of
Director of Health Service, Pune & DMER, Mumbai
 - 3) Letter No. DHS/CORONA/Heparin-LMWH/Use Letter/14521-
14625/2020, dated 13/5/2020 from Director of Health Services,
Pune
 - 4) Clinical Management Protocol (Version-3) dated 13/6/2020
Received from Govt. of India, Ministry of Health & Family
Welfare, New Delhi

Standard Treatment Protocol for Covid-19 Positive patients has already been issued under the joint signature of Director of Health Services, Pune and the Director, Medical Education and Research, Mumbai vide letters mentioned under Ref. No. 1 & 2. Some addition were also communicated vide letter at reference 3rd cited in addition to this, Clinical Management Protocol (Version-3) dated 13 June 2020 has since been published by Ministry of Health & Family Welfare, Govt. of India, New Delhi.

Considering the Govt. of India guidelines as well as experience of technical experts who are treating the patient, revision is made in these protocols by technical committee.

Accordingly, the Standard Treatment Protocol for Covid-19 positive patients prepared by the Technical Committee is enclosed herewith. Clinical Management Protocol (Version-3) from Govt. of India is also enclosed herewith for reference.

In case of any clarification or suggestion, you can contact Technical Committee Members of task force constituted for care of critical covid patients at Mumbai.


(Dr. Pradeep Vyas) 22/6/2020

Principal Secretary to Govt. of Maharashtra

Copy to:

Secretary, Medical Education and Research Department, Mantralaya, Mumbai
Commissioner, Health Services & MD, NHM, Mumbai
District Collector (all)
Municipal Commissioner (all)
Director of Health Services, Mumbai
Director of Health Services, Pune
Director, Medical Education and Research, Mumbai

STANDARD TREATMENT PROTOCOL FOR COVID 19

Revision 2

Dated-22.06.2020

Index

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1. Protocol For Treatment of Confirmed COVID-19 Hospitalized Patients

Proposed Clinical Staging System

1. Mild (Early Infection) - Groups A B&C
2. Moderate (Pneumonia with no signs of severe disease)
3. Severe (Severe Pneumonia/ARDS/Sepsis/Septic Shock)

State & Group	Criteria	Investigations	Site of Admission	Treatment	Remarks	
Mild	Group A	Asymptomatic but positive for COVID-19	CBC, RFT, RBS, LFT, ECG	Isolation ward /Home isolation	Monitoring of patient	
	Group B	Symptomatic/URTI without comorbidity <ul style="list-style-type: none"> • Fever • Cough • Sore throat • Malaise • Headache • Anosmia* • Loss of taste* • Diarrhoea* <p>* Can be only earliest presenting symptom.</p> <p>RED FLAG SIGNS (if developed likely to deteriorate)</p> <ol style="list-style-type: none"> 1. SpO₂- <94% on room air 2. Neutrophil Lymphocyte ratio > 3.5 3. Resting tachycardia 	CBC, RFT, RBS, LFT, CXR, ECG, SpO ₂ monitoring by Pulse oxymeter	Isolation ward/ Home isolation	Symptomatic Treatment such as Antipyretic, adequate nutrition and appropriate rehydration	Patient to be followed up daily for temperature, vitals and Oxygen Saturation (SpO ₂)
	Group -C	Symptomatic/URTI with comorbidity <ul style="list-style-type: none"> • Obesity • >60 Yrs • DM • HTN/IHD • COPD/Chronic lung disease • Immunocompromised state • Immunosuppressive drugs 	CBC, LFT RFT, RBS CXR, ABG ECG ESR, CRP LDH S.Ferritin D-dimer If QTc prolongation in ECG then daily	Isolation ward	A) Tab. HCQ 400mg BD on day 1 then 200 mg BD for 4 days OR Tab. Favipiravir 1800 mg BD on day 1 followed by 800 mg BD for 7	Antibiotics- T. Cefixime 200 mg BD OR T. Augmentin 625 TDS OR To be given as per local antibiotic policy ECG - Baseline & daily to look

	<ul style="list-style-type: none"> • CKD <p>RED FLAG SIGNS (if developed likely to deteriorate)</p> <ol style="list-style-type: none"> 1. Neutrophil 2. Lymphocyte ratio >3.5 3. P:F ratio less than 300 3. THREE minute walk test and on repeat pulse oximetry decreased SpO2 4. Resting tachycardia 5. Raised CRP/ S.Ferritin D-dimer/LDH/ Triglycerides 6. SpO2- <94% on room air 	S.electrolytes ionic calcium & Magnesium		<p>days if needed can be continued upto maximum 14 days</p> <p style="text-align: center;">+</p> <p>B) Inj. LMWH 40mg SC OD per day</p>	<p>for QTc prolongation</p> <p>If patient is symptomatic at day 5 also, continue therapy for additional 5 days</p>
Moderate	<p>Pneumonia</p> <p>Adolescent or adult with presence of clinical features of dyspnea and or hypoxia, fever, cough, including SpO2 <94% (range 90-94%) on room air, Respiratory Rate more or equal to 24 per minute.</p> <p>RED FLAG SIGNS (if developed likely to deteriorate)</p> <ol style="list-style-type: none"> 1. Neutrophil Lymphocyte ratio > 3.5 2. P:F ratio less than 300 3. Raised CRP/ S.Ferritin D-dimer/LDH/ Triglycerides 4. SpO2 – less than 88% on oxygen 	<p>CBC, LFT RFT, RBS CXR, ECG, ABG ESR, CRP S.Ferritin D-dimer/LDH</p> <p>If QTc prolongation in ECG then daily S.electrolytes ionic calcium & Magnesium</p> <p>Follow up CRP, D – dimer & Ferritin every 48-72 hours (if available); CBC with DLC, Absolute lymphocyte count, KFT/LFT daily</p>	DCH	<p>A) Tab. HCQ 400 mg BD on day 1 then 200 mg BD for 5 days</p> <p style="text-align: center;">OR</p> <p>Inj Remdesivir 200 mg OD for day 1 & 100 mg BD for next 4 days</p> <p style="text-align: center;">OR</p> <p>Tab. Favipiravir 1800 mg BD on day 1 followed by 800 mg BD for 7 days if needed can be continued upto maximum 14 days</p> <p style="text-align: center;">+</p> <p>B) Inj. LMWH 40mg SC OD per day</p> <p>C)</p>	<p>Inj Ceftriaxone 1 g IV OD for 5-10 days.</p> <p style="text-align: center;">OR</p> <p>To be given as per oral antibiotic policy.</p> <p>ECG - Baseline & daily to look for QTc prolongation</p> <p>If patient satisfies indication then Tocilizumab/ Convalescent Plasma can be given (doses given in newer therapies section)</p> <p>If HCQs cannot be given for any contraindication like prolong QTc or in</p>

					<p>If SpO₂ < 88% -</p> <p>1) Consider CARP protocol</p> <p>2) Inj. MPS 0.5 to 1mg /kg /day for 3 days and if d dimer/Sr Ferritin normal after 3 days, oral Prednisolone tapered dose for 5 days</p> <p style="text-align: center;">OR</p> <p>If Inj. MPS not available Dexamethasone I V/Oral 6 mg OD for 10 days</p>	<p>known G6 PD deficiency combination of Ivermectin 12 mg oral single dose + doxycycline 100 mg BD for 5 days can be considered</p>
Severe	<p>Severe Pneumonia/ARDS/Septic Shock/Sepsis</p> <p>Adolescent or adult: with clinical signs of Pneumonia plus one of the following; respiratory rate >30 breaths/min, severe respiratory distress, SpO₂ <90% on room air.</p> <p>RED FLAG SIGNS</p> <p>1. Neutrophil Lymphocyte ratio > 3.5 2. Raised CRP/Ferritin/D-dimer/LDH/Triglycerides/Troponin I /CPK-MB</p>	<p>CBC, LFT RFT, RBS CXR, ECG, ABG ESR, CRP S.Ferritin D-dimer LDH, S. Triglycerides Troponin I CPK-MB Blood culture & sensitivity</p> <p>If QTc prolongation in ECG, then daily S.electrolytes ionic calcium & S.Magnesium</p> <p>If QTc > 500m</p>	Isolation-ICU	<p>A) Inj. LMWH 40mg SC OD per day (if some signs of bleeding seen then to be stopped)</p> <p>B) Inj. MPS 0.5 to 1mg /kg /day for 5-7 days and to be extended depending upon followup D dimer</p> <p style="text-align: center;">OR</p> <p>If MPS not available Dexamethasone IV/Oral 6 mg OD for 10 days</p> <p>C) If patient satisfies indication then</p>	<p>Inj. Mepipenem 1 g IV TDS extended infusion over 3 hours.</p> <p style="text-align: center;">OR</p> <p>Antibiotics to be given as per local antibiotic policy</p> <p>ECG - Baseline & daily to look for QTc prolongation</p> <p>Others: 1. Mechanical ventilation as per CARDSnet protocol</p> <p>2. If D-dimer is raised three fold then LMWH to be given in therapeutic dose i.e 40 mg SC BD.</p>	

			s HCQ should be avoided		Tocilizumab/ Convalescent Plasma/ Remdesivir can be given(doses given in newer therapies section)	
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* If any investigation is not available at treating hospital, it may be outsourced.

Note:

In addition drugs may be given to improve immunity and possibly reduce viral replication.

- Zinc, Vitamin C, Vitamin A, Vitamin D, Magnesium Sulphate

2. Management consideration in Severe Cases:

1. Early supportive therapy and monitoring

a. Give supplemental oxygen therapy immediately to patients with Severe Covid and respiratory distress, hypoxaemia, or shock: Initiate oxygen therapy at 5 L/min and titrate flow rates to reach target SpO2 ≥ 90% in non-pregnant adults and SpO2 ≥ 92-96% in pregnant patients. All areas where patients with Severe Covid are cared for should be equipped with pulse oximeters, functioning oxygen systems and disposable, single- use, oxygen-delivering interfaces (nasal cannula, simple face mask, and mask with reservoir bag). Use contact precautions when handling contaminated oxygen interfaces of patients with COVID – 19.

b. Use conservative fluid management in patients with Severe Covid when there is no evidence of shock.

2. Management of hypoxemic respiratory failure and ARDS

Recognize severe hypoxemic respiratory failure when a patient with respiratory distress is failing standard oxygen therapy. Patients may continue to have increased work of breathing or hypoxemia even when oxygen is delivered via a face mask with reservoir bag (flow rates of 10-15 L/min, which is typically the minimum flow required to maintain bag inflation; FiO2 0.60-0.95). Hypoxemic respiratory failure in ARDS commonly results from intrapulmonary ventilation-perfusion mismatch or shunt and usually requires mechanical ventilation.

High – Flow Nasal Cannula oxygenation (HFNO) or non – invasive mechanical ventilation:

When respiratory distress and/or hypoxemia of the patient cannot be alleviated after receiving standard oxygen therapy, high – flow nasal cannula oxygen therapy or non – invasive ventilation can be considered. Compared to standard oxygen therapy, HFNO reduces the need for intubation.

Patients with hypercapnia (exacerbation of obstructive lung disease, cardiogenic pulmonary oedema), hemodynamic instability, multi-organ failure, or abnormal mental status should generally not receive HFNO, although emerging data suggest that HFNO may be safe in patients with mild-moderate and non-worsening hypercapnia. Patients receiving HFNO should

be in a monitored setting and cared for by experienced personnel capable of endotracheal intubation in case the patient acutely deteriorates or does not improve after a short trial (about 1 hr).

There has been concerns raised about generation of aerosols while using HFNO and NIV. However, recent publications suggest that newer HFNO and NIV systems with good interface fitting do not create widespread dispersion of exhaled air and therefore should be associated with low risk of airborne transmission. If conditions do not improve or even get worse within a short time (1 – 2 hours), tracheal intubation and invasive mechanical ventilation should be used in a timely manner.

- Endotracheal intubation should be performed by a trained and experienced provider using airborne precautions. Patients with ARDS, especially young children or those who are obese or pregnant, may de-saturate quickly during intubation. Pre-oxygenate with 100% FiO₂ for 5 minutes, via a face mask with reservoir bag, bag-valve mask, HFNO, or NIV. Rapid sequence intubation is appropriate after an airway assessment that identifies no signs of difficult intubation.
- Implement mechanical ventilation using lower tidal volumes (4–8 ml/kg predicted body weight, PBW) and lower inspiratory pressures (plateau pressure <30 cmH₂O). This is a strong recommendation from a clinical guideline for patients with ARDS, and is suggested for patients with sepsis-induced respiratory failure. The initial tidal volume is 6 ml/kg PBW; tidal volume up to 8 ml/kg PBW is allowed if undesirable side effects occur (e.g. dys-synchrony, pH <7.15). Hypercapnia is permitted if meeting the pH goal of 7.30-7.45. Ventilator protocols are available. The use of deep sedation may be required to control respiratory drive and achieve tidal volume targets.
- In patients with severe ARDS, prone ventilation for 16-18 hours per day is recommended but requires sufficient human resources and expertise to be performed safely.
- In patients with moderate or severe ARDS, higher PEEP instead of lower PEEP is suggested. PEEP titration requires consideration of benefits (reducing atelectrauma and improving alveolar recruitment) vs. risks (end-inspiratory overdistension leading to lung injury and higher pulmonary vascular resistance). Tables are available to guide PEEP titration based on the FiO₂ required to maintain SpO₂. In patients with moderate-severe ARDS (PaO₂/FiO₂<150), neuromuscular blockade by continuous infusion should not be routinely used.
- In settings with access to expertise in extracorporeal life support (ECLS), consider referral of patients with refractory hypoxemia despite lung protective ventilation. ECLS should only be offered in expert centres with a sufficient case volume to maintain expertise and that can apply the IPC measures required for COVID – 19 patients.
- Avoid disconnecting the patient from the ventilator, which results in loss of PEEP and atelectasis. Use in-line catheters for airway suctioning and clamp endotracheal tube when disconnection is required (for example, transfer to a transport ventilator).

3. Management of septic shock

- Recognize septic shock in adults when infection is suspected or confirmed AND vasopressors are needed to maintain mean arterial pressure (MAP) ≥ 65 mmHg AND lactate is >2 mmol/L, in absence of hypovolemia.

- In the absence of a lactate measurement, use MAP and clinical signs of perfusion to define shock. Standard care includes early recognition and the following treatments within 1 hour of recognition: antimicrobial therapy and fluid loading and vasopressors for hypotension. The use of central venous and arterial catheters should be based on resource availability and individual patient needs.
- In resuscitation from septic shock in adults, give at least 30 ml/kg of isotonic crystalloid in adults in the first 3 hours. Do not use hypotonic crystalloids, starches, or gelatins for resuscitation.
- Fluid resuscitation may lead to volume overload, including respiratory failure. If there is no response to fluid loading and signs of volume overload appear (for example, jugular venous distension, crackles on lung auscultation, pulmonary oedema on imaging, or hepatomegaly in children), then reduce or discontinue fluid administration. This step is particularly important where mechanical ventilation is not available.
- Crystalloids include normal saline and Ringer's lactate. Determine need for additional fluid boluses (250-1000 ml in adults or 10-20 ml/kg in children) based on clinical response and improvement of perfusion targets. Perfusion targets include MAP (>65 mmHg), urine output (>0.5 ml/kg/hr in adults), and improvement of skin mottling, capillary refill, level of consciousness, and lactate. Consider dynamic indices of volume responsiveness to guide volume administration beyond initial resuscitation based on local resources and experience. These indices include passive leg raising test, fluid challenges with serial stroke volume measurements, or variations in systolic pressure, pulse pressure, inferior vena cava size, or stroke volume in response to changes in intrathoracic pressure during mechanical ventilation.
 - Administer vasopressors when shock persists during or after fluid resuscitation. The initial blood pressure target is MAP \geq 65 mmHg in adults
 - If central venous catheters are not available, vasopressors can be given through a peripheral IV, but use a large vein and closely monitor for signs of extravasation and local tissue necrosis. If extravasation occurs, stop infusion. Vasopressors can also be administered through intraosseous needles.
 - If signs of poor perfusion and cardiac dysfunction persist despite achieving MAP target with fluids and vasopressors, consider an inotrope such as dobutamine.

4. Other therapeutic measures

For patients with progressive deterioration of oxygenation indicators, rapid worsening on imaging and excessive activation of the body's inflammatory response, glucocorticoids can be used for a short period of time (3 to 5 days). It is recommended that dose should not exceed the equivalent of methylprednisolone 1 – 2mg/kg/day. Note that a larger dose of glucocorticoid will delay the removal of coronavirus due to immunosuppressive effects.

Prophylactic dose of UFH or LMWH (e.g., enoxaparin 40 mg per day SC) should be given for anti-coagulation. Control of co-morbid conditions should be ensured.

For pregnant severe cases, consultations with obstetric, neonatal, and intensive care specialists (depending on the condition of the mother) are essential. Patients often suffer from anxiety and fear and they should be supported by psychological counseling.

3. Newer Therapies

At present, use of these therapies is based on a limited available evidence. As the situation evolves, and when more data become available, the evidence will be accordingly incorporated, and recommendation upgraded. Further, use of these drugs is subjected to limited availability in the country as of now. Currently, these drugs should only be used in a defined subgroup of patients:

1. Remdesivir (under Emergency Use Authorization- Now this drug is in 1 B category) may be considered in patients with Category 1 Group B and moderate disease (those on oxygen) with none of the following contraindications:

- AST/ALT > 5 times Upper limit of normal (ULN)
- Severe renal impairment (i.e., eGFR < 30ml/min/m² or need for hemodialysis)
- Pregnancy or lactating females
- Children (< 12 years of age)

Dose: 200 mg IV on day 1 followed by 100 mg IV daily for 4 days (Total 5 days)

Consent : Written informed consent from patient before administration

2. Convalescent plasma (Off Label) may be considered in patients with moderate disease who are not improving (oxygen requirement is progressively increasing) despite use of steroids. Special prerequisites while considering convalescent plasma include:

- ABO compatibility and cross matching of the donor plasma
- Neutralizing titer of donor plasma should be above the specific threshold (if the latter is not available, plasma IgG titer (against S-protein RBD) above 1:640 should be used)
- Recipient should be closely monitored for several hours post transfusion for any transfusion related adverse events
- Use should be avoided in patients with IgA deficiency or immunoglobulin allergy

Indications:

Age more than 18 years

Any of the two

A) PaO₂/FiO₂ between 200-300

B) Respiratory rate more than 24.min, Sao₂ less than 93 on room air

Contraindications:

A) Pregnant/breastfeeding woman

B) Hypersensitivity to blood products

C) Critically ill patients

D) Patient who has received immunoglobulin in last 30 days

Dose: Dose is variable ranging from 4 to 13 ml/kg (usually 200 ml each day for two consecutive days given slowly over not less than 2 hours - total 400 ml)

3. Tocilizumab(Off Label) may be considered in patients with moderate disease with progressively increasing oxygen requirements and in mechanically ventilated patients not improving despite use of steroids. Long term safety data in COVID 19 remains largely unknown. Special considerations before its use include:

- Presence of raised inflammatory markers (e.g., CRP>20, Ferritin>300, IL-6>20, Age preferably <50 can be extended to 60)

- Patients should be carefully monitored post Tocilizumab for secondary infections, fungal infections, persistent fever 101 F, neutropenia and leucocytosis.
- Active infections and Tuberculosis should be ruled out before use.
- As Tocilizumab is IL 6 receptor inhibitor repeat IL 6 level is expected to rise.

Dose: 8mg/kg (maximum 400 mg at one time) given slowly in 100 ml NS over 1 hour; dose can be repeated once after 12 to 24 hours

4. Favipiravir is a broad spectrum antiviral drug effective against many subtypes & strains of influenza & other RNA viruses. It offers rapid reduction in viral load within 4 days & provides faster symptomatic and radiological improvement.

Indication: It is used in COVID-19 mild to moderate cases and also can be used in patients with co-morbid conditions such as diabetes & heart diseases.

Contraindication: In pregnant & lactating women & in patients with severe renal and hepatic impairment.

Adverse events: Increase of blood uric acid level, Diarrhea, decrease of neutrophil count, increase of AST(SGOT), increase of ALT(SGPT) & psychiatric symptoms. Drug is excreted in sperms hence contraception is recommended.

Dose: For Adults, 1800 mg orally twice daily on 1 day followed by 800 mg orally twice daily, up to maximum of 14 days.

Consent: Written informed consent from patient before administration

4. Important Considerations

A) Indications for Intubation

Intubation has to be planned and conducted with adequate sedation and neuromuscular paralysis with minimum personnel.

1. Persistent hypoxia SpO₂ below 88% on 60% venturi mask.
2. Respiratory Rate (RR) > 30/ min
3. Systolic BP below 90 mmHg despite IV fluids and vasopressors
4. GCS less than 8

Trial of Oxygen therapy with High Flow Nasal Cannula / Venturi mask. If signs of respiratory distress persist then consider immediate intubation.

B) Cytokine Storm (on Day 7/8 of disease)

To be ruled out from Group C onwards

Cardinal features:

- Unremitting fever
- Cytopenias
- Hyperferritinemia
- Pulmonary involvement (including ARDS)

Screening for Hyperinflammation:

- Elevated ferritin (Predictor of mortality)
- Elevated ESR & CRP
- Elevated liver transaminases
- Bicytopenia/ pancytopenia
- Elevated Triglycerides
- Hepatosplenomegaly

Management of Cytokine Storm

- Inj Methyl Prednisolone (MPS) 500 mg IV OD x 3-5 days

C) COVID Awake Repositioning/Proning Protocol (CARP)

Prone positioning improves oxygenation in spontaneously breathing non-intubated patients with hypoxemic acute respiratory failure

Indications for Awake Proning:

(1) Isolated hypoxemic respiratory failure without substantial dyspnea (**the "paradoxically well appearing" hypoxemic patient**). A reasonable candidate might meet the following criteria:

- not in multi-organ failure
- expectation that patient has a fairly *reversible* lung injury and may avoid intubation
- no hypercapnia or substantial dyspnea
- normal mental status, able to communicate distress
- no anticipation of difficult airway

(2) Patients who do not wish to be intubated. The main risk of awake proning is that it could cause excessive delays in intubation. In the patient who do not give consent for intubation, there is little to be lost by trial of awake proning.

Patients with a PF Ratio(po_2/Fio_2) of < 100 on Non Invasive Ventilation (NIV) are not suitable candidates and this may delay an unavoidable intubation. Patients should prone, as tolerated for 2-4 hours/session for 2-4/days. Patients may receive light sedation in order to tolerate pronation. While the evidence is far from robust, this technique is currently being used and has both physiological and laboratory basis. More importantly, it has a demonstrated anecdotal benefit to avoid intubation.

CARP Protocol

Timed Position Changes

Every 2 hrs, ask patient to switch between the following positions. Bed adjustments will be required between positions

1. Left Lateral Recumbent
2. Right Lateral Recumbent
3. Sitting Upright 60-90 degrees
4. Lying Prone in bed

If these 4 positions are not raising the Oxygen Saturation, a 5th position can be tried:

5. Trendelenburg position (Supine, Bed 30 degrees Head Down)

10-15 Minutes after each position change, check to make sure that Oxygen Saturation has not decreased. If it has, try another position.

• **Position Changes to Counter Hypoxemia**

If patient has a significant drop in Oxygen saturation, follow these steps:

1. Ensure that the source of the patient's Oxygen is still hooked up to the wall and is properly placed on the patient (this is a common cause of desaturation)
2. Ask patient to move to a different position as above

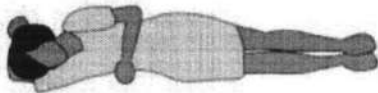
PHOTOS BELOW TO DEMONSTRATE THIS:

PHOTOS BELOW TO DEMONSTRATE THIS:

1. 30 minutes – 2 hours: laying on your belly



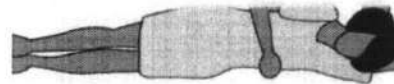
2. 30 minutes – 2 hours: laying on your right side



3. 30 minutes – 2 hours: sitting up



4. 30 minutes – 2 hours: lying on your left side



Then back to Position 1. Lying on your belly!



Self Positioning Guide_Elmhurst Hospital_SB

5. ICU Admissions and Ventilation Strategies:

A. Criteria For ICU Admissions

• Need for mechanical ventilation.
• Need for vasopressors.
• Respiratory rate >25 breaths per minute.
• PaO ₂ <60 mm Hg on room air or SpO ₂ <85% on supplemental oxygen of 6 L/M.
• Confusion.
• N/L ratio > 3.5
• Thrombocytopenia.
• Uremia
• Multilobar infiltrates.
• Hypotension requiring fluid resuscitation.
• Hypothe

5 B. Ventilation Strategies (ARDS with Low Compliance)

Before Mechanical Ventilation – Try Awake, Prone, High Flow Nasal O₂ – It May Avoid Invasive Ventilation
<i>Ventilation Protocol for Patients with Acute Respiratory Distress Syndrome</i>
All patients who present with acute breathlessness (less than 7 to 10 days) and having all of the following:
• PaO ₂ /FiO ₂ ≤ 300
• Bilateral (patchy, diffuse, or homogeneous) infiltrates consistent with pulmonary edema
• No clinical evidence of left atrial hypertension
are diagnosed with acute respiratory distress syndrome (ARDS)/ SARI (severe acute respiratory illness)
• Ventilation strategies will primarily depend upon the severity of SARI/ARDS
<u>Ventilator Setup and Adjustment</u>
• Calculate PBW.
• Males = 50 + 2.3 [height (inches)—60].
• Females = 45.5 + 2.3 [height (inches)—60].
• Select volume A/C mode on the ventilator.

<ul style="list-style-type: none"> • Set ventilator settings to achieve initial VT = 6 mL/kg PBW.
<ul style="list-style-type: none"> • Set initial rate to approximate baseline minute ventilation (not >35 bpm). Aim for a pH over 7.2, do not worry about the PaCO₂. If the PaCO₂ keeps going up too much in spite of a respiratory rate (RR) of 35, reduce the dead space in the circuit. If the pH drops below 7.2, consider adding sodium bicarbonate infusion.
<ul style="list-style-type: none"> • Adjust VT and RR to achieve pH and plateau pressure goals as mentioned below.
<p><u>Oxygenation Goal: PaO₂ 55–80 mm Hg or Oxygen Saturation (SpO₂) 88–95%</u></p>
<ul style="list-style-type: none"> • Use a minimum positive end expiratory pressure (PEEP) of 5 cm H₂O. Consider the use of incremental FiO₂/PEEP combinations as shown below to achieve the goal.
<ul style="list-style-type: none"> • Plateau pressure goal: ≤30 cm H₂O
<ul style="list-style-type: none"> • Check Pplat (0.5 second inspiratory pause) at least every 4 hours and after each change in PEEP or VT.
<ul style="list-style-type: none"> • If the Pplat remains above 30 cm H₂O, decrease VT by 1 mL/kg steps (minimum = 4 mL/kg).
<p>Noninvasive ventilators (NIVs) can be used for patients not requiring high FiO₂ and for recovering patients, so that the high performance ICU ventilators can be preserved for sicker patients.</p>
<p>Transport ventilators can also be included in the inventory. Home NIVs and high-flow nasal cannula (HFNC) devices can play an important role in cases with mild severity of disease.</p>
<p>Both these modes (NIV, HFNC) are likely to produce aerosol transmission of COVID-19 disease. Hence to be tried under full PPE coverage. Early elective intubation is preferred for these patients.</p>
<p>Proning</p>
<p>If patient does not show improvement in oxygenation, then proning should be tried, preferably early in the course of the disease.</p>
<p>It is usually associated with significant improvement in oxygenation status. On an average 16 to 18 hours of proning should be done.</p>
<p>Follow thorough aerosol precautions while proning and take utmost precaution to avoid disconnection of the ventilator circuit.</p>
<p>Although Outcome data on Prone positioning in COVID-19 (used in 12% of patients in one ICU study from Wuhan¹⁵) are currently lacking, the tendency for SARS-Cov-2 to affect the peripheral and dorsal areas of the lungs provides the ideal conditions for a positive oxygenation response to prone positioning.</p>

5 C. Ventilation Strategies (ARDS with Near Normal Lung Compliance)

<ul style="list-style-type: none"> • After intubation check lung compliance on ventilator
<ul style="list-style-type: none"> • If near normal - ventilation settings as follows.
<ul style="list-style-type: none"> • PEEP <10 cms of water with BP monitoring
<ul style="list-style-type: none"> • FIO₂ < 60 - 70% to keep SaO₂ > 85, PaO₂ < 60 mmhg

• Tidal volume - 8-10 ml/kg
• IV fluids to maintain VT<10-12 cms of water
• Prone ventilation not indicated
• Try semi recumbent position
• Try weaning slowly, watch for mucosal oedema, Hydrocortisone 200mg, IV 30 minutes before extubation.

6. Supportive Care For ICU/Non ICU Patients

• Semi-recumbent position if not contraindicated.
• Avoid Nonsteroidal anti-inflammatory drugs (NSAIDs) like ibuprofen other than paracetamol unless absolutely necessary
• All inhaled medicines (bronchodilators) should preferably be given by metered dose inhalers (MDIs) to reduce the chances of aerosolization. Avoid nebulised drugs
• Use of histamine-2 receptor blockers or proton-pump inhibitors to prevent gastrointestinal bleeding. Sucralfate can be added
• Consider discontinuation of inhaled steroids as they may reduce local immunity and promote viral replication. But if discontinuation of inhaled steroids is likely to worsen the preexisting lung disease, decision on the same can be taken by the treating doctor
• A conservative or de-resuscitative fluid strategy after initial resuscitation with early detection of myocardial involvement through the measurement of troponin
• Pharmacologic thromboprophylaxis, if not contraindicated, should be given. Mechanical thromboprophylaxis using intermittent pneumatic compression stockings can be used in cases where pharmacologic thromboprophylaxis is contraindicated.
• Judicious use of sedation
• Daily sedation-free intervals, and assessment for weaning readiness.
• Use of disposable ventilator circuits for each patient.
• Appropriate use of heat moisture exchanger or humidifier.
• Standardized slower weaning protocols.
• Closed suction and HME filters should be preferred to prevent aerosol spread.
• Optimal care to reduce the incidence of catheter-related blood stream infections.
• Early enteral nutrition (within 24 to 48 hours of admission) if not contraindicated.
• Frequent position change to prevent pressure sores.
• Early mobilization including passive and active rehabilitation exercises to prevent critical illness-related neuromuscular weakness.
• Tracheostomy in patients with prolonged mechanical ventilation.

7. Revised Discharge Policy for COVID-19

The revised discharge policy is aligned with the guidelines on the 3 tier COVID facilities and the Categorization of the patients based on clinical severity

1. Mild/very mild/pre-symptomatic cases:

Mild/very mild/pre-symptomatic cases admitted to a COVID Care Facility will undergo regular temperature and pulse oximetry monitoring. The patient can be discharged after 10 days of symptom onset and no fever for 3 days. There will be no need for testing prior to discharge. At the time of discharge, the patient will be advised to isolate himself at home and self-monitor their health for further 7 days. At any point of time, prior to discharge from CCC, if the oxygen saturation dips below 95%, patient is moved to Dedicated COVID Health Centre (DCHC). After discharge from the facility, if he/she again develops symptoms of fever, cough or breathing difficulty he will contact the COVID Care Centre or State helpline or 1075. His/her health will again be followed up through tele-conference on 14th day.

2. Moderate cases admitted to Dedicated COVID Health Centre (Oxygen beds)

2.1. Patients whose symptoms resolve within 3 days and maintain saturation above 95% for the next 4 days Cases clinically classified as “moderate cases” will undergo monitoring of body temperature and oxygen saturation. If the fever resolve within 3 days and the patient maintains saturation above 95% for the next 4 days (without oxygen support), such patient will be discharged after 10 days of symptom onset in case of:

- Absence of fever without antipyretics
- Resolution of breathlessness
- No oxygen requirement

There will be no need for testing prior to discharge.

At the time of discharge, the patient will be advised to isolate himself at home and self-monitor their health for further 7 days.

2.2. Patient on Oxygenation whose fever does not resolve within 3 days and demand of oxygen therapy continues such patients will be discharged only after-

- resolution of clinical symptoms
- ability to maintain oxygen saturation for 3 consecutive days

3. Severe Cases including immuno-compromised (HIV patients, transplant recipients, malignancy and patients on chronic immunosuppressive therapies including steroids)

Discharge criteria for severe cases will be based on

- Clinical recovery
- Patient tested negative once *by RT-PCR (after resolution of symptoms)*



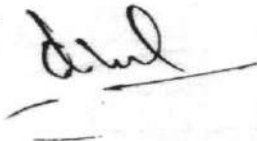
Dr.A.L. Kakrani



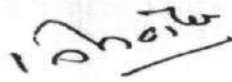
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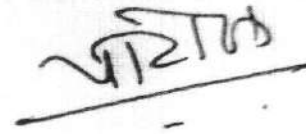
Dr. Shashikala Sangle



Dr. Deelip Kadam



Dr. Nitin Ambadekar



Dr. Archana Patil



CLINICAL MANAGEMENT PROTOCOL: COVID-19

Government of India
Ministry of Health and Family Welfare
Directorate General of Health Services
(EMR Division)

Version 3
13.06.20

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1. Background

Coronaviruses are large group of viruses that cause illness in humans and animals. Rarely, animal coronaviruses can evolve and infect people and then spread between people such as has been seen with MERS and SARS. The outbreak of Novel coronavirus disease (COVID-19) was initially noticed in a seafood market in Wuhan city in Hubei Province of China in mid-December, 2019, has now spread to 214 countries/territories/areas worldwide. WHO (under International Health Regulations) has declared this outbreak as a “Public Health Emergency of International Concern” (PHEIC) on 30th January 2020. WHO subsequently declared COVID-19 a pandemic on 11th March, 2020.

2. Disease Epidemiology

Current available evidence for COVID-19 suggests that the causative virus (SARS-CoV-2) has a zoonotic source closely related to bat-origin SARS-like coronavirus. It is an enveloped RNA beta coronavirus related to the Severe Acute Respiratory Syndrome (SARS) virus, and the virus has been shown to use the angiotensin-converting enzyme 2 (ACE2) receptor for cell entry.

The persons infected by the novel coronavirus are the main source of infection. Direct person-to-person transmission occurs through close contact, mainly through respiratory droplets that are released when the infected person coughs, sneezes, or talks. These droplets may also land on surfaces, where the virus remains viable. Infection can also occur if a person touches an infected surface and then touches his or her eyes, nose, or mouth.

The median incubation period is 5.1 days (range 2–14 days). The precise interval during which an individual with COVID-19 is infectious is uncertain. As per the current evidence, the period of infectivity starts 2 days prior to onset of symptoms and lasts up to 8 days. The extent and role played by pre-clinical/ asymptomatic infections in transmission still remain under investigation.

3. Patho-physiology

Most patients with COVID-19 predominantly have a respiratory tract infection associated with SARS-CoV-2 infection. However, in a small proportion of cases, they can progress to a more severe and systemic disease characterized by the Acute Respiratory Distress Syndrome (ARDS), sepsis and septic shock, multiorgan failure, including acute kidney injury and cardiac injury.

Autopsy findings in China and European countries showed endothelial damage of pulmonary vasculature, microvascular thrombosis and hemorrhage linked to extensive alveolar and interstitial inflammation that ultimately result in COVID-19 vasculopathy, pulmonary intravascular coagulopathy, hypercoagulability, ventilation perfusion

mismatch, and refractory ARDS. Hypoxemia, secondary to ARDS may also activate the coagulation cascade.

4. Case definition¹

Suspect case

A. A patient with acute respiratory illness (fever and at least one sign/symptom of respiratory disease, e.g., cough, shortness of breath), AND a history of travel to or residence in a location reporting community transmission of COVID-19 disease during the 14 days prior to symptom onset;

OR

B. A patient with any acute respiratory illness AND having been in contact with a confirmed or probable COVID-19 case in the last 14 days prior to symptom onset;

OR

C. A patient with severe acute respiratory illness (fever and at least one sign/symptom of respiratory disease, e.g., cough, shortness of breath; AND requiring hospitalization) AND in the absence of an alternative diagnosis that fully explains the clinical presentation.

Probable case

A. A suspect case for whom testing for the COVID-19 virus is inconclusive.

OR

B. A suspect case for whom testing could not be performed for any reason.

Confirmed case

A person with laboratory confirmation of COVID-19 infection, irrespective of clinical signs and symptoms.

5. Clinical Features

COVID-19 patients reporting to various Covid treatment facilities have reported the following signs and symptoms:

- Fever
- Cough
- Fatigue
- Shortness of breath
- Expectoration
- Myalgia
- Rhinorrhea, sore throat, diarrhea

¹ As per WHO surveillance guidelines

- Loss of smell (anosmia) or loss of taste (ageusia) preceding the onset of respiratory symptoms has also been reported

Older people and immune-suppressed patients in particular may present with atypical symptoms such as fatigue, reduced alertness, reduced mobility, diarrhoea, loss of appetite, delirium, and absence of fever. Children might not have reported fever or cough as frequently as adults.

As per data from Integrated Health Information Platform (IHIP)/ Integrated Disease Surveillance Programme (IDSP) portal case investigation forms for COVID 19 (n=15,366), the details on the signs and symptoms reported are (as on 11.06.2020), fever (27%), cough (21%), sore throat (10%), breathlessness (8%), Weakness (7%), running nose (3%) and others 24%.

6. Risk factors

The major risk factors for severe disease are:

- Age more than 60 years (increasing with age).
- Underlying non-communicable diseases (NCDs): diabetes, hypertension, cardiac disease, chronic lung disease, cerebro-vascular disease, chronic kidney disease, immune-suppression and cancer

7. Clinical Severity

Table 1: Clinical severity and assessment parameters

Clinical Severity	Clinical presentation	Clinical parameters	Remarks
Mild	Patients with uncomplicated upper respiratory tract infection, may have mild symptoms such as fever, cough, sore throat, nasal congestion, malaise, headache	Without evidence of breathlessness or Hypoxia (normal saturation).	(i) Managed at Covid Care Centre (ii) Managed at home subject to fulfilment of conditions stipulated in guidelines ²

²Revised guidelines for Home Isolation of very mild/pre-symptomatic COVID-19 cases
<https://www.mohfw.gov.in/pdf/RevisedguidelinesforHomeisolationofverymildpresymptomaticCOVID19cases10May2020.pdf>

Moderate	Pneumonia with no signs of severe disease	<p>Adolescent or adult with presence of clinical features of dyspnea and or hypoxia, fever, cough, including SpO₂ <94% (range 90-94%) on room air, Respiratory Rate more or equal to 24 per minute.</p> <p>Child with presence of clinical features of dyspnea and or hypoxia, fever, cough, including SpO₂ <94% (range 90-94%) on room air, Respiratory Rate more or equal to 24 per minute.</p> <p>Fast breathing (in breaths/min): < 2 months: ≥ 60; 2–11 months: ≥ 50; 1–5 years: ≥ 40</p>	Managed in Dedicated Covid Health Centre (DCHC)
Severe	Severe Pneumonia	<p>Adolescent or adult: with clinical signs of Pneumonia plus one of the following; respiratory rate >30 breaths/min, severe respiratory distress, SpO₂ <90% on room air.</p> <p>Child with cough or difficulty in breathing, plus at least one of the following: central cyanosis or SpO₂ <90%; severe respiratory distress (e.g. grunting, chest in- drawing); signs of pneumonia with any of the following danger signs: inability to breastfeed or drink, lethargy or unconsciousness, or convulsions. Other signs of pneumonia may be present: chest in drawing, fast breathing (in breaths/min): <2 months ≥60; 2–11 months ≥50; 1–5 years ≥40.</p> <p>The diagnosis is clinical; chest imaging can exclude complications.</p>	Managed in Dedicated Covid Hospital

	<p>Acute Respiratory Distress Syndrome</p>	<p>Onset: new or worsening respiratory symptoms within one week of known clinical insult.</p> <p>Chest imaging (Chest X ray and portable bed side lung ultrasound): bilateral opacities, not fully explained by effusions, lobar or lung collapse, or nodules.</p> <p>Origin of Pulmonary infiltrates: respiratory failure not fully explained by cardiac failure or fluid overload. Need objective assessment (e.g. echocardiography) to exclude hydrostatic cause of infiltrates/oedema if no risk factor present.</p> <p>Oxygenation impairment in adults:</p> <p><u>Mild ARDS:</u> $200 \text{ mmHg} < \text{PaO}_2/\text{FiO}_2 \leq 300 \text{ mmHg}$ (with PEEP or CPAP $\geq 5 \text{ cm H}_2\text{O}$)</p> <p><u>Moderate ARDS:</u> $100 \text{ mmHg} < \text{PaO}_2/\text{FiO}_2 \leq 200 \text{ mmHg}$ with PEEP $\geq 5 \text{ cm H}_2\text{O}$)</p> <p><u>Severe ARDS:</u> $\text{PaO}_2/\text{FiO}_2 \leq 100 \text{ mmHg}$ with PEEP $\geq 5 \text{ cm H}_2\text{O}$)</p> <p>When PaO_2 is not available, $\text{SpO}_2/\text{FiO}_2 \leq 315$ suggests ARDS (including in non-ventilated patients)</p> <p>Oxygenation impairment in Children</p> <p>Note Oxygenation Index (OI) and OSI (Oxygen Saturation Index)</p> <p>Use OI when available. If PaO_2 not available, wean FiO_2 to maintain $\text{SpO}_2 < 97\%$ to calculate OSI or $\text{SpO}_2/\text{FiO}_2$ ratio:</p>	
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		<p>using SpO₂)</p> <p>Bi-level (NIV or CPAP) ≥5 cm H₂O via full face mask: PaO₂/FiO₂ ≤ 300 mmHg or SpO₂/FiO₂ ≤264</p> <p>Mild ARDS (invasively ventilated):</p> <p style="padding-left: 40px;">4 ≤ OI < 8 or 5 ≤ OSI < 7.5</p> <p>Moderate ARDS (invasively ventilated): 8 ≤ OI < 16 or 7.5 ≤ OSI < 12.3</p> <p>Severe ARDS (invasively ventilated):</p> <p>OI ≥ 16 or OSI ≥ 12.3</p>	
Severe (Continued)	Sepsis	<p>Adults: Acute life-threatening organ dysfunction caused by a dys-regulated host response to suspected or proven infection. Signs of organ dysfunction include: altered mental status, difficult or fast breathing, low oxygen saturation, reduced urine output, fast heart rate, weak pulse, cold extremities or low blood pressure, skin mottling, or laboratory evidence of coagulopathy, thrombocytopenia, acidosis, high lactate or hyperbilirubinemia.</p> <p>Children: suspected or proven infection and ≥2 age based Systemic Inflammatory Response Syndrome (SIRS) criteria, of which one must be abnormal temperature or white blood cell count</p>	
	Septic Shock	<p>Adults: persisting hypotension despite volume resuscitation, requiring vasopressors to maintain MAP ≥65 mmHg and serum lactate level > 2 mmol/L</p> <p>Children: any hypotension (SBP <5th centile or >2 SD below</p>	

		<p>normal for age) or 2- 3 of the following: altered mental state; bradycardia or tachycardia (HR <90 bpm or >160 bpm in infants and HR <70 bpm or >150 bpm in children); prolonged capillary refill (>2 sec) or weak pulse; tachypnea; mottled or cool skin or petechial or purpuric rash; high lactate; reduced urine output ; hyperthermia or hypothermia</p>	
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8. Infection Prevention and Control Practices³

Infection prevention control (IPC) is a critical and integral part of clinical management of patients and should be initiated at the point of entry of the patient to hospital (typically the Emergency Department). Standard precautions should always be routinely applied in all areas of health care facilities. Standard precautions include hand hygiene; use of PPE to avoid direct contact with patients' blood, body fluids, secretions (including respiratory secretions) and non-intact skin. Standard precautions also include prevention of needle-stick or sharps injury; safe waste management; cleaning and disinfection of equipment; and cleaning of the environment.

Table 2: Infection prevention control practices

At triage	Give suspect patient a triple layer surgical mask and direct patient to separate area, an isolation room if available. Keep at least 1meter distance between suspected patients and other patients. Instruct all patients to cover nose and mouth during coughing or sneezing with tissue or flexed elbow for others. Perform hand hygiene after contact with respiratory secretions
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³ National guidelines for infection prevention and control in healthcare facilities <https://www.mohfw.gov.in/pdf//National%20Guidelines%20for%20IPC%20in%20HCF%20-%20final%281%29.pdf>

<p>Apply standard precautions</p>	<p>Apply standard precautions according to risk assessment for all patients, at all times, when providing any diagnostic and care services. Standard precautions include hand hygiene and the use of personal protective equipment (PPE) when risk of splashes or in contact with patients' blood, body fluids, secretions (including respiratory secretions) and non-intact skin. Standard precautions also include appropriate patient placement; prevention of needle-stick or sharps injury; safe waste management; cleaning and disinfection of equipment; and cleaning of the environment. Best practices for safely managing health care waste should be followed.</p>
<p>Apply droplet precautions</p>	<p>Droplet precautions prevent large droplet transmission of respiratory viruses. Use a triple layer surgical mask if working within 1-2 meters of the patient. Place patients in single rooms, or group together those with the same etiological diagnosis. If an etiological diagnosis is not possible, group patients with similar clinical diagnosis and based on epidemiological risk factors, with a spatial separation. When providing care in close contact with a patient with respiratory symptoms (e.g. coughing or sneezing), use eye protection (face-mask or goggles), because sprays of secretions may occur. Limit patient movement within the institution and ensure that patients wear triple layer surgical masks when outside their rooms</p>
<p>Apply contact precautions</p>	<p>Droplet and contact precautions prevent direct or indirect transmission from contact with contaminated surfaces or equipment (i.e. contact with contaminated oxygen tubing/interfaces). Use PPE (triple layer surgical mask, eye protection, gloves and gown) when entering room and remove PPE when leaving. If possible, use either disposable or dedicated equipment (e.g. stethoscopes, blood pressure cuffs and thermometers). If equipment needs to be shared among patients, clean and disinfect between each patient use. Ensure that health care workers refrain from touching their eyes, nose, and mouth with potentially contaminated gloved or ungloved hands. Avoid contaminating environmental surfaces that are not directly related to patient care (e.g. door handles and light switches). Ensure adequate room ventilation. Avoid movement of patients or transport. Perform hand hygiene.</p>

<p>Apply airborne precautions when performing an aerosol generating procedure</p>	<p>Ensure that healthcare workers performing aerosol-generating procedures (i.e. open suctioning of respiratory tract, intubation, bronchoscopy, cardiopulmonary resuscitation) use PPE, including gloves, long-sleeved gowns, eye protection, and fit-tested particulate respirators (N95). (The scheduled fit test should not be confused with user seal check before each use.) Whenever possible, use adequately ventilated single rooms when performing aerosol-generating procedures, meaning negative pressure rooms with minimum of 12 air changes per hour or at least 160 liters/second/patient in facilities with natural ventilation. Avoid the presence of unnecessary individuals in the room. Care for the patient in the same type of room after mechanical ventilation commences.</p> <p>Because of uncertainty around the potential for aerosolization, high-flow nasal oxygen (HFNO), NIV, including bubble CPAP, should be used with airborne precautions until further evaluation of safety can be completed. There is insufficient evidence to classify nebulizer therapy as an aerosol-generating procedure that is associated with transmission of COVID-19. More research is needed.</p>
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9. Laboratory Diagnosis

Guidance on specimen collection, processing, transportation, including related biosafety procedures, is available at:

https://www.mohfw.gov.in/pdf/5Sample%20collection_packaging%20%202019-nCoV.pdf

Sample collection

Preferred sample Throat and nasal swab in viral transport media (VTM) and transported in cold chain.

Alternate Nasopharyngeal swab, BAL or endotracheal aspirate which has to be mixed with the viral transport medium and transported in cold chain.

General guidelines

- Use appropriate PPE for specimen collection (droplet and contact precautions for URT specimens; airborne precautions for LRT specimens). Maintain proper infection control when collecting specimens
- Restricted entry to visitors or attendants during sample collection
- Complete the requisition form for each specimen submitted
- Proper disposal of all waste generated

Respiratory specimen collection methods:

A. Lower respiratory tract

- Bronchoalveolar lavage, tracheal aspirate, sputum
- Collect 2-3 mL into a sterile, leak-proof, screw-cap sputum collection cup or sterile dry container.

B. Upper respiratory tract

- Nasopharyngeal swab AND oropharyngeal swab

Oropharyngeal swab (e.g. throat swab): Tilt patient's head back 70 degrees. Rub swab over both tonsillar pillars and posterior oropharynx and avoid touching the tongue, teeth, and gums. Use only synthetic fiber swabs with plastic shafts. Do not use calcium alginate swabs or swabs with wooden shafts. Place swabs immediately into sterile tubes containing 2-3 ml of viral transport media.

Combined nasal & throat swab: Tilt patient's head back 70 degrees. While gently rotating the swab, insert swab less than one inch into nostril (until resistance is met at turbinates). Rotate the swab several times against nasal wall and repeat in other nostril using the same swab. Place tip of the swab into sterile viral transport media tube and cut off the applicator stick. For throat swab, take a second dry polyester swab, insert into mouth, and swab the posterior pharynx and tonsillar areas (avoid the tongue). Place tip of swab into the same tube and cut off the applicator tip.

Nasopharyngeal swab: Tilt patient's head back 70 degrees. Insert flexible swab through the nares parallel to the palate (not upwards) until resistance is encountered or the distance is equivalent to that from the ear to the nostril of the patient. Gently, rub and roll the swab. Leave the swab in place for several seconds to absorb secretions before removing.

Clinicians may also collect lower respiratory tract samples when these are readily available (for example, in mechanically ventilated patients). In hospitalized patients in Dedicated Covid Hospitals (severe cases with confirmed COVID - 19 infection, repeat upper respiratory tract samples should be collected to demonstrate viral clearance.

Recommended Test

Real time or Conventional RT-PCR test is recommended for diagnosis. SARS-CoV-2 antibody tests are not recommended for diagnosis of current infection with COVID-19.

Dual infections with other respiratory infections (viral, bacterial and fungal) have been found in COVID-19 patients. Depending on local epidemiology and clinical symptoms, test for other potential etiologies (e.g. Influenza, other respiratory viruses, malaria, dengue fever, typhoid fever) as appropriate.

For COVID-19 patients with severe disease, also collect blood cultures, ideally prior to initiation of antimicrobial therapy

10. Management of COVID-19: symptomatic treatment

10.1. Management of Mild Cases

In the containment phase, patients with suspected or confirmed mild COVID-19 are being isolated to break the chain of transmission. Patients with mild disease may present to primary care/outpatient department, or detected during community outreach activities, such as home visits or by telemedicine.

Mild cases can be managed at Covid Care Centre, First Referral Units (FRUs), Community Health Centre (CHC), sub-district and district hospitals or at home subject to conditions stipulated in the home isolation guidelines available at

<https://www.mohfw.gov.in/pdf/RevisedguidelinesforHomelsofverymildpresymptomaticCOVID19cases10May2020.pdf>

Detailed clinical history is taken including that of co-morbidities. Patient is followed up daily for temperature, vitals and Oxygen saturation (SpO₂).

Counsel patients with mild COVID-19 about signs and symptoms of complications that should prompt urgent care. Patients with risk factors for severe illness should be monitored closely, given the possible risk of deterioration. If they develop any worsening symptoms (such as light headedness, difficulty breathing, chest pain, dehydration, etc.), they should be immediately admitted to a Dedicated Covid Health Centre or Dedicated Covid Hospital.

Caregivers of children with mild COVID-19 should monitor for signs and symptoms of clinical deterioration requiring urgent re-evaluation. These include difficulty in breathing/fast or shallow breathing (for infants: grunting, inability to breastfeed), blue lips or face, chest pain or pressure, new confusion, inability to awaken/not interacting when awake, inability to drink or keep down any liquids.

Mild COVID-19 cases may be given symptomatic treatment such as antipyretic (Paracetamol) for fever and pain, adequate nutrition and appropriate rehydration. Tab Hydroxychloroquine (HCQ) may be considered for any of those having high risk features for severe disease (such as age > 60; Hypertension, diabetes, chronic lung/kidney/ liver disease, Cerebrovascular disease and obesity) under strict medical supervision.

10.2. Management of Moderate Cases

Patients with suspected or confirmed moderate COVID-19 (pneumonia) is to be isolated to contain virus transmission. Patients with moderate disease may present to an emergency unit or primary care/outpatient department, or be encountered during community surveillance activities, such as active house to house search or by telemedicine.

The defining clinical assessment parameters are Respiratory Rate of more than or equal to 24 and oxygen saturation (SpO₂) of less than 94% on room air (range 90-94%).

Such patients will be isolated in Dedicated Covid Health Centre (DCHC) or District hospital or Medical College hospitals.

The patient will undergo detailed clinical history including co-morbid conditions, measurement of vital signs, Oxygen saturation (SpO₂) and radiological examination of Chest X-ray, Complete Blood Count and other investigations as indicated.

Antibiotics should not be prescribed routinely unless there is clinical suspicion of a bacterial infection.

Clinical Management of Moderate cases

Oxygen Support:

- Target SpO₂: 92-96% (88-92% in patients with COPD)
- The device for administering oxygen (nasal prongs, mask, or masks with breathing / non-rebreathing reservoir bag) depends upon the increasing requirement of oxygen therapy. If HFNC or simple nasal cannula is used, N95 mask should be applied over it.
- Awake proning may be used as a rescue therapy. (Protocol at Annexure-I)
- All patients should have daily 12-lead ECG
- Follow CRP, D-dimer & Ferritin every 48-72 hourly (if available); CBC with differential count, Absolute Lymphocyte count, KFT/LFT daily
- Tab. Hydroxychloroquine (400mg) BD on 1st day followed by 200mg 1 BD for 4 days. (after ECG Assessment)
- Consider IV methylprednisolone 0.5 to 1 mg/kg for 3 days (preferably within 48 hours of admission or if oxygen requirement is increasing and if inflammatory markers are increased)

Anticoagulation

- Prophylactic dose of UFH or LMWH (e.g., enoxaparin 40 mg per day SC)
- Control of co-morbid condition
- Monitor for:
 - Increased work of breathing (use of accessory muscles)
 - Hemodynamic instability
 - Increase in oxygen requirement

If any of the above occurs, shift to Dedicated Covid Hospital

Few patients with COVID-19 experience a secondary bacterial infection. Consider empiric antibiotic therapy as per local antibiogram and guidelines in older people, immune-compromised patients, and children < 5 years of age.

Close monitoring of patients with moderate COVID-19 is required for signs or symptoms of disease progression. Provision of mechanisms for follow up and transportation to Dedicated Covid Hospital should be available.

10.3. Management of Severe Cases

10.3.1 Early supportive therapy and monitoring

- a. Give supplemental oxygen therapy immediately to patients with Severe Covid and respiratory distress, hypoxaemia, or shock: Initiate oxygen therapy at 5 L/min and titrate flow rates to reach target SpO₂ ≥ 90% in non-pregnant adults and SpO₂ ≥ 92-96% in pregnant patients. Children with emergency signs (obstructed or absent breathing, severe respiratory distress, central cyanosis, shock, coma or convulsions) should receive oxygen therapy during resuscitation to target SpO₂ ≥ 94%. All areas where patients with Severe Covid are cared for should be equipped with pulse oximeters, functioning oxygen systems and disposable, single-use, oxygen-delivering interfaces (nasal cannula, simple face mask, and mask with reservoir bag). Use contact precautions when handling contaminated oxygen interfaces of patients with COVID – 19.
- b. Use conservative fluid management in patients with Severe Covid when there is no evidence of shock.

10.3.2 Management of hypoxemic respiratory failure and ARDS

Recognize severe hypoxemic respiratory failure when a patient with respiratory distress is failing standard oxygen therapy. Patients may continue to have increased work of breathing or hypoxemia even when oxygen is delivered via a face mask with reservoir bag (flow rates of 10-15 L/min, which is typically the minimum flow required to maintain bag inflation; FiO₂ 0.60-0.95). Hypoxemic respiratory failure in ARDS commonly results from intrapulmonary ventilation-perfusion mismatch or shunt and usually requires mechanical ventilation.

High – Flow Nasal Cannula oxygenation (HFNO) or non – invasive mechanical ventilation:

When respiratory distress and/or hypoxemia of the patient cannot be alleviated after receiving standard oxygen therapy, high – flow nasal cannula oxygen therapy or non – invasive ventilation can be considered. Compared to standard oxygen therapy, HFNO reduces the need for intubation. Patients with hypercapnia (exacerbation of obstructive lung disease, cardiogenic pulmonary oedema), hemodynamic instability, multi-organ failure, or abnormal mental status should generally not receive HFNO, although emerging data suggest that HFNO may be safe in patients with mild-moderate and non-worsening hypercapnia. Patients receiving HFNO should be in a monitored setting and cared for by experienced personnel capable of endotracheal

intubation in case the patient acutely deteriorates or does not improve after a short trial (about 1 hr).

There has been concerns raised about generation of aerosols while using HFNO and NIV. However, recent publications suggest that newer HFNO and NIV systems with good interface fitting do not create widespread dispersion of exhaled air and therefore should be associated with low risk of airborne transmission. If conditions do not improve or even get worse within a short time (1 – 2 hours), tracheal intubation and invasive mechanical ventilation should be used in a timely manner.

- Endotracheal intubation should be performed by a trained and experienced provider using airborne precautions. Patients with ARDS, especially young children or those who are obese or pregnant, may de-saturate quickly during intubation. Pre-oxygenate with 100% FiO₂ for 5 minutes, via a face mask with reservoir bag, bag-valve mask, HFNO, or NIV. Rapid sequence intubation is appropriate after an airway assessment that identifies no signs of difficult intubation.
- Implement mechanical ventilation using lower tidal volumes (4–8 ml/kg predicted body weight, PBW) and lower inspiratory pressures (plateau pressure <30 cmH₂O). This is a strong recommendation from a clinical guideline for patients with ARDS, and is suggested for patients with sepsis-induced respiratory failure. The initial tidal volume is 6 ml/kg PBW; tidal volume up to 8 ml/kg PBW is allowed if undesirable side effects occur (e.g. dys-synchrony, pH <7.15). Hypercapnia is permitted if meeting the pH goal of 7.30-7.45. Ventilator protocols are available. The use of deep sedation may be required to control respiratory drive and achieve tidal volume targets.
- In patients with severe ARDS, prone ventilation for 16-18 hours per day is recommended but requires sufficient human resources and expertise to be performed safely. (Refer to Annexure-I)
- In patients with moderate or severe ARDS, higher PEEP instead of lower PEEP is suggested. PEEP titration requires consideration of benefits (reducing atelectrauma and improving alveolar recruitment) vs. risks (end-inspiratory overdistension leading to lung injury and higher pulmonary vascular resistance). Tables are available to guide PEEP titration based on the FiO₂ required to maintain SpO₂. In patients with moderate-severe ARDS (PaO₂/FiO₂<150), neuromuscular blockade by continuous infusion should not be routinely used.
- In settings with access to expertise in extracorporeal life support (ECLS), consider referral of patients with refractory hypoxemia despite lung protective ventilation. ECLS should only be offered in expert centres with a sufficient case volume to maintain expertise and that can apply the IPC measures required for COVID – 19 patients.
- Avoid disconnecting the patient from the ventilator, which results in loss of PEEP and atelectasis. Use in-line catheters for airway suctioning and clamp endotracheal tube when disconnection is required (for example, transfer to a transport ventilator).

10.3.3. Management of septic shock

- Recognize septic shock in adults when infection is suspected or confirmed AND vasopressors are needed to maintain mean arterial pressure (MAP) ≥ 65 mmHg AND lactate is >2 mmol/L, in absence of hypovolemia. Recognize septic shock in children with any hypotension (systolic blood pressure [SBP] <5 th centile or >2 SD below normal for age) or two of the three of the following: altered mental state; tachycardia or bradycardia (HR <90 bpm or >160 bpm in infants and HR <70 bpm or >150 bpm in children); prolonged capillary refill (>2 sec) or warm vasodilation with bounding pulses; tachypnea; mottled skin or petechial or purpuric rash; increased lactate; oliguria; hyperthermia or hypothermia.
- In the absence of a lactate measurement, use MAP and clinical signs of perfusion to define shock. Standard care includes early recognition and the following treatments within 1 hour of recognition: antimicrobial therapy and fluid loading and vasopressors for hypotension. The use of central venous and arterial catheters should be based on resource availability and individual patient needs.
- In resuscitation from septic shock in adults, give at least 30 ml/kg of isotonic crystalloid in adults in the first 3 hours. In resuscitation from septic shock in children in well-resourced settings, give 20 ml/kg as a rapid bolus and up to 40-60 ml/kg in the first 1 hr. Do not use hypotonic crystalloids, starches, or gelatins for resuscitation.
- Fluid resuscitation may lead to volume overload, including respiratory failure. If there is no response to fluid loading and signs of volume overload appear (for example, jugular venous distension, crackles on lung auscultation, pulmonary oedema on imaging, or hepatomegaly in children), then reduce or discontinue fluid administration. This step is particularly important where mechanical ventilation is not available. Alternate fluid regimens are suggested when caring for children in resource-limited settings.
- Crystalloids include normal saline and Ringer's lactate. Determine need for additional fluid boluses (250-1000 ml in adults or 10-20 ml/kg in children) based on clinical response and improvement of perfusion targets. Perfusion targets include MAP (>65 mmHg or age-appropriate targets in children), urine output (>0.5 ml/kg/hr in adults, 1 ml/kg/hr. in children), and improvement of skin mottling, capillary refill, level of consciousness, and lactate. Consider dynamic indices of volume responsiveness to guide volume administration beyond initial resuscitation based on local resources and experience. These indices include passive leg raising test, fluid challenges with serial stroke volume measurements, or variations in systolic pressure, pulse pressure, inferior vena cava size, or stroke volume in response to changes in intrathoracic pressure during mechanical ventilation.
- Administer vasopressors when shock persists during or after fluid resuscitation. The initial blood pressure target is MAP ≥ 65 mmHg in adults and age-appropriate targets in children.
- If central venous catheters are not available, vasopressors can be given through a peripheral IV, but use a large vein and closely monitor for signs of extravasation and

local tissue necrosis. If extravasation occurs, stop infusion. Vasopressors can also be administered through intraosseous needles.

- If signs of poor perfusion and cardiac dysfunction persist despite achieving MAP target with fluids and vasopressors, consider an inotrope such as dobutamine.

10.3.4. Other therapeutic measures

For patients with progressive deterioration of oxygenation indicators, rapid worsening on imaging and excessive activation of the body's inflammatory response, glucocorticoids can be used for a short period of time (3 to 5 days). It is recommended that dose should not exceed the equivalent of methylprednisolone 1 – 2mg/kg/day. Note that a larger dose of glucocorticoid will delay the removal of coronavirus due to immunosuppressive effects.

Prophylactic dose of UFH or LMWH (e.g., enoxaparin 40 mg per day SC) should be given for anti-coagulation. Control of co-morbid conditions should be ensured.

For pregnant severe cases, consultations with obstetric, neonatal, and intensive care specialists (depending on the condition of the mother) are essential. Patients often suffer from anxiety and fear and they should be supported by psychological counseling.

Note – An algorithm for clinical guidance for management of COVID-19 suspect/confirmed case is placed at Annexure-II.

11. Investigational Therapies⁴

At present, use of these therapies is based on a limited available evidence. As the situation evolves, and when more data become available, the evidence will be accordingly incorporated, and recommendation upgraded. Further, use of these drugs is subjected to limited availability in the country as of now. Currently, these drugs should only be used in a defined subgroup of patients:

- i. **Remdesivir** (under Emergency Use Authorization) may be considered in patients with moderate disease (those on oxygen) with none of the following contraindications:
 - AST/ALT > 5 times Upper limit of normal (ULN)
 - Severe renal impairment (i.e., eGFR < 30ml/min/m² or need for hemodialysis)
 - Pregnancy or lactating females
 - Children (< 12 years of age)

Dose: 200 mg IV on day 1 followed by 100 mg IV daily for 5 days

⁴This document will be updated as more data emerge. The document contains some potential off label/investigational use of medications and is based on a consensus of experts along with the available evidence. An informed and shared decision making is essential before prescribing any of these therapies.

ii. **Convalescent plasma** (Off Label) may be considered in patients with moderate disease who are not improving (oxygen requirement is progressively increasing) despite use of steroids. Special prerequisites while considering convalescent plasma include:

- ABO compatibility and cross matching of the donor plasma
- Neutralizing titer of donor plasma should be above the specific threshold (if the latter is not available, plasma IgG titer (against S-protein RBD) above 1:640 should be used)
- Recipient should be closely monitored for several hours post transfusion for any transfusion related adverse events
- Use should be avoided in patients with IgA deficiency or immunoglobulin allergy

Dose: Dose is variable ranging from 4 to 13 ml/kg (usually 200 ml single dose given slowly over not less than 2 hours)

iii. **Tocilizumab** (Off Label) may be considered in patients with moderate disease with progressively increasing oxygen requirements and in mechanically ventilated patients not improving despite use of steroids. Long term safety data in COVID 19 remains largely unknown. Special considerations before its use include:

- Presence of raised inflammatory markers (e.g., CRP, Ferritin, IL-6)
- Patients should be carefully monitored post Tocilizumab for secondary infections and neutropenia
- Active infections and Tuberculosis should be ruled out before use.

Dose: 8mg/kg (maximum 800 mg at one time) given slowly in 100 ml NS over 1 hour; dose can be repeated once after 12 to 24 hours if needed

12. Repurposed or off-label therapies

Hydroxychloroquine: This drug has demonstrated in vitro activity against SARS-CoV2 and was shown to be clinically beneficial in several small single center studies though with significant limitations. Nonetheless, several large observational studies with severe methodologic limitations have shown no effect on mortality or other clinically meaningful outcomes. As such, the evidence base behind its use remains limited as with other drugs and should only be used after shared decision making with the patients while awaiting the results of ongoing studies. As is the case with other antivirals, this drug should be used as early in the disease course as possible to achieve any meaningful effects and should be avoided in patients with severe disease. An ECG should ideally be done before prescribing the drug to measure QTc interval (and HCQ avoided if QTc is >500 ms)

Dose: 400 mg BD on day 1 followed by 400mg daily for next 4 days.

13. Prevention of complications

Implement the following interventions (Table 3) to prevent complications associated with critical illness. These interventions are based on Surviving Sepsis or other guidelines, and are generally limited to feasible recommendations based on high quality evidence.

Table 3: Prevention of complications

Anticipated Outcome	Interventions
Reduce days of invasive mechanical ventilation	<ul style="list-style-type: none"> • Use weaning protocols that include daily assessment for readiness to breathe spontaneously • Minimize continuous or intermittent sedation, targeting specific titration endpoints (light sedation unless contraindicated) or with daily interruption of continuous sedative infusions
Reduce incidence of ventilator associated pneumonia	<ul style="list-style-type: none"> • Oral intubation is preferable to nasal intubation in adolescents and adults • Keep patient in semi-recumbent position (head of bed elevation 30-45°) • Use a closed suctioning system; periodically drain and discard condensate in tubing • Use a new ventilator circuit for each patient; once patient is ventilated, change circuit if it is soiled or damaged but not routinely • Change heat moisture exchanger when it malfunctions, when soiled, or every 5-7 days
Reduce incidence of venous thromboembolism	<ul style="list-style-type: none"> • Use pharmacological prophylaxis (low molecular-weight heparin [preferred if available] or heparin 5000 units subcutaneously twice daily) in adolescents and adults without contraindications. For those with contraindications, use mechanical prophylaxis (intermittent pneumatic compression devices).
Reduce incidence of catheter related bloodstream infection	<ul style="list-style-type: none"> • Use a checklist with completion verified by a real-time observer as reminder of each step needed for sterile insertion and as a daily reminder to remove catheter if no longer needed
Reduce incidence of pressure Ulcers	<ul style="list-style-type: none"> • Turn patient every two hours
Reduce Incidence of stress ulcers and gastrointestinal bleeding	<ul style="list-style-type: none"> • Give early enteral nutrition (within 24-48 hours of admission) • Administer histamine-2 receptor blockers or proton-pump inhibitors in patients with risk factors for GI bleeding. Risk factors for gastrointestinal bleeding include mechanical ventilation ≥ 48 hours, coagulopathy, renal replacement therapy, liver disease, multiple co-morbidities, and higher organ failure score
Reduce incidence of ICU-related weakness	<ul style="list-style-type: none"> • Actively mobilize the patient early in the course of illness when safe to do so

Annexure- I

Early self-proning in awake, non-intubated patients

- Any COVID-19 patient with respiratory embarrassment severe enough to be admitted to the hospital may be considered for rotation and early self-proning.
- Care must be taken to not disrupt the flow of oxygen during patient rotation
- Typical protocols include 30–120 minutes in prone position, followed by 30–120 minutes in left lateral decubitus, right lateral decubitus, and upright sitting position
(Caputo ND, Strayer RJ, Levitan R. *Academic Emergency Medicine* 2020;27:375–378)

Requirements for safe prone positioning in ARDS

- Preoxygenate the patient with FiO₂ 1.0
- Secure the endotracheal tube and arterial and central venous catheters
- Adequate number of staff to assist in the turn and to monitor the turn
- Supplies to turn (pads for bed, sheet, protection for the patient)
- Knowledge of how to perform the turn as well as how to supine the patient in case of an emergency

Contraindications to prone ventilation

- Spinal instability requires special care
- Intra cranial pressure may increase on turning
- Rapidly return to supine in case of CPR or defibrillation

When to start proning?

- P/F ratio <150 while being ventilated with FiO₂ >0.6 and PEEP >5 cm H₂O

When to stop proning?

- When P/F exceeds 150 on FiO₂ \geq 0.6 and \geq 6 PEEP

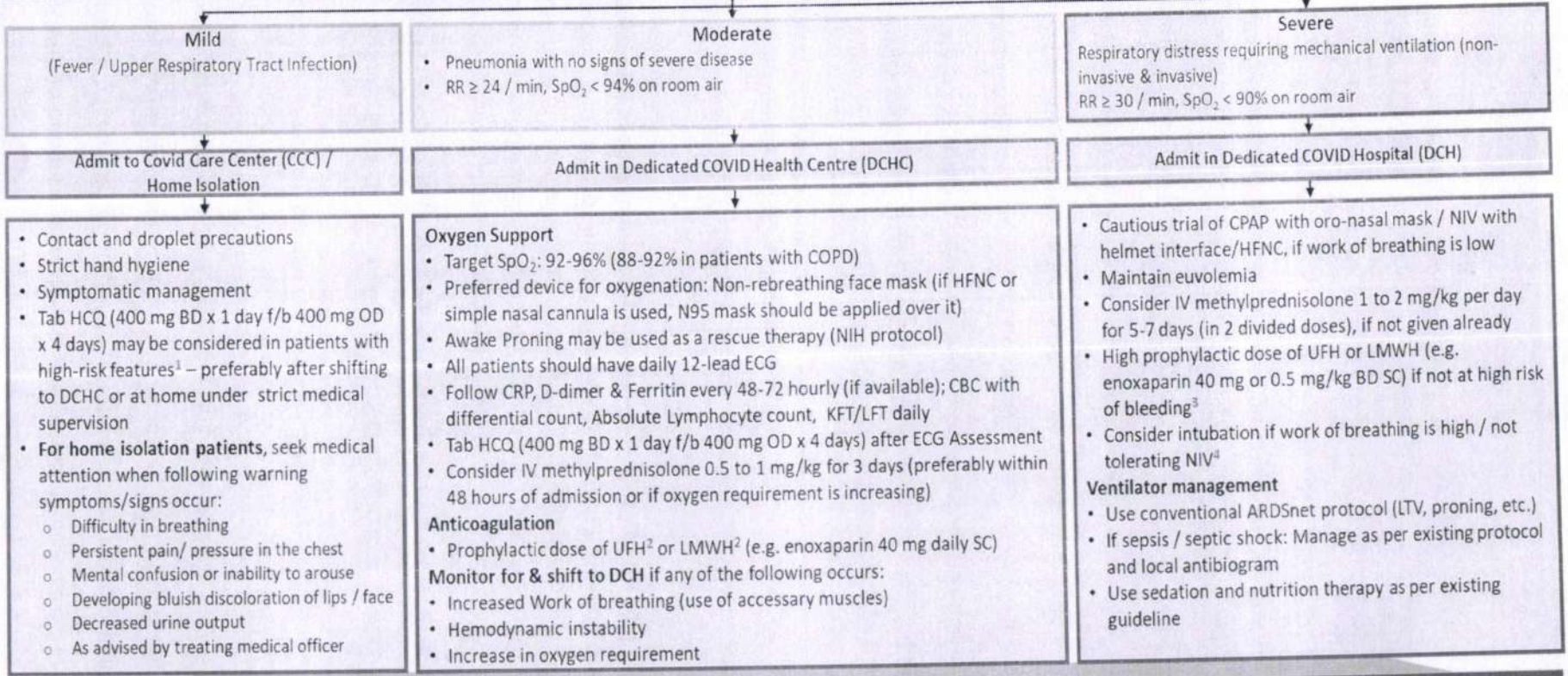
What portion of the day should patients be kept prone?

- As much as possible (16-18 hours a day)
- Adult patients with severe ARDS receive prone positioning for more than 12 hours per day (strong recommendation, moderate-high confidence in effect estimates)
(ATS-ERS Guideline. *Am J RespirCrit Care Med*;2017;195(9):1253-1263)

Clinical Guidance for Management of Covid-19 Suspect / Confirmed Cases




Covid-19 Suspect / Confirmed Case Stratification on the basis of disease severity

Annexure - II



<p>Testing</p> <p>While attending suspect case as per above protocol based on clinical assessment, testing shall be resorted to & if negative - manage in a non-Covid facility according to clinical diagnosis</p>	<p>Discharge</p> <p>After clinical improvement, discharge as per discharge policy</p>	<p>Investigational Therapies⁵</p> <p>Remdesivir (EUA), Tocilizumab (Off label) & Convalescent plasma (Off label)</p>
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<p>1 High-risk patients for severe disease include:</p> <ul style="list-style-type: none"> ○ Age: 60 years or more ○ Hypertension, DM (diabetes mellitus) & other immunocompromised states ○ Chronic lung / kidney / liver disease ○ Cerebrovascular disease ○ Obesity (BMI > 25 kg / m²) 	<p>2 LMWH: Low Molecular Weight Heparin: if no contraindication or high risk of bleeding; UFH: Unfractionated heparin</p> <p>3 Risk of bleeding: use validated score for assessing bleeding risk (eg HAS-BLED score)</p>	<p>3 Use D-dimer and SIC score for further risk stratification (SIC score ≥4 portends high thrombotic risk)</p> <p>3 Follow AHA/ESC and ISTH guidelines in case patient is on antiplatelet agents</p> <p>4 Higher chances of NIV failure</p> <p>5 Informed and shared decision making is essential before prescribing any of these therapies</p>
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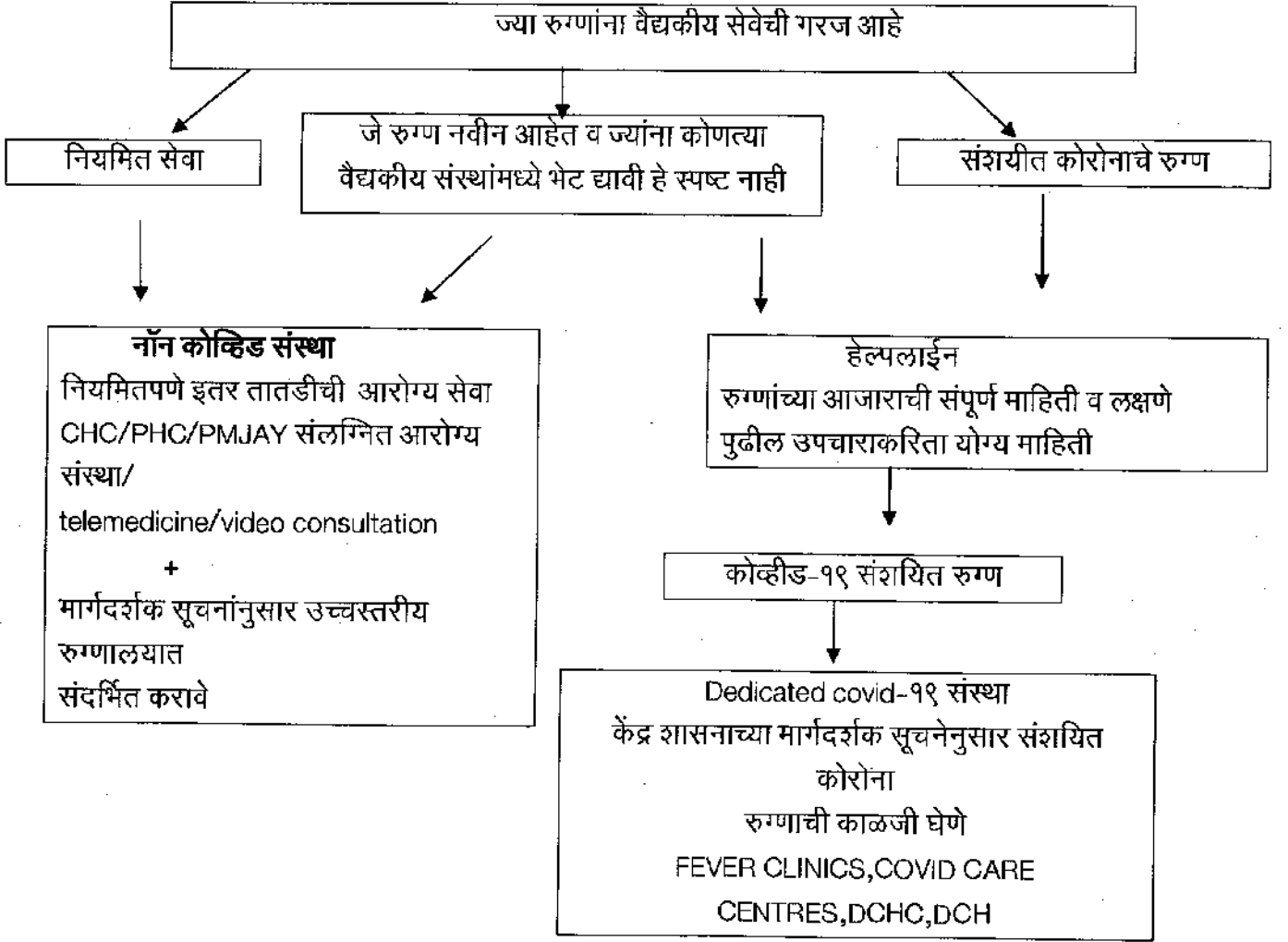
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- १) अपर मुख्य सचिव तथा अभियान संचालक श्रीमती वंदना गुरनानी यांचे पत्र दिनांक १७ एप्रिल २०२०
 - २) केंद्रशासना कडून प्राप्त झालेल्या मार्गदर्शक सूचना

सध्या राज्यामध्ये सर्व जिल्ह्यामध्ये कोरोनाचे रुग्ण आढळून येत आहेत.त्यामुळे नियमित सेवांवर विपरीत परिणाम होण्याची शक्यता नाकारता येत नाही. कोरोना परिस्थिती मुळे लाभार्थी नियमित आरोग्य सेवा घेण्यासाठी कदाचित आरोग्य संस्थांमध्ये न येण्याची शक्यता आहे. सर्व लाभार्थींना नियमित आरोग्य सेवा पुरविणे तसेच उद्धवणारे आजार व मृत्यू टाळणे ही सर्व आरोग्य संस्थांची जबाबदारी आहे. आपल्या कार्यक्षेत्रात सर्वत्र माता व बाल संगोपन विषयक तसेच नियमितपणे इतरही आरोग्य सेवा पुरवल्या जाण्यासाठी खालील मार्गदर्शक सूचनांचा अवलंब करावा.

भाग १: आरोग्य यंत्रणेची पुनर्रचना

- यापूर्वी निर्गमित केलेल्या सूचनांनुसार संशयित/कोव्हीड रुग्णांसाठी आरोग्य संस्थांचे वर्गीकरण CCC,DCHC,DCH असे करण्यात यावे.
- इतर संस्थांमध्ये आपल्या तातडीच्या वैद्यकीय आरोग्य सेवा नियमितपणे सुरु आहेत याची खात्री करावी व त्यामध्ये social distancing पाळून सर्व सुविधा पुरविण्यात याव्यात.
- आपत्कालीन स्थिती करिता रुग्णालयांची तयारी योग्य पद्धतीने झाली असल्याची खात्री करावी.
- सर्वसाधारण आजारांच्या तपासणीसाठी फिरते वैद्यकीय पथक(MMU) याचा वापर करावा तसेच या सेवा देताना social distancing चा अवलंब योग्य प्रकारे करण्यात यावा.
- यासाठी Tele-Health तसेच ई संजीवनी चा उपयोग करून घ्यावा,यासाठी लाभार्थीला esanjivaniopd.in येथे रजिस्टर करावे लागेल.



- ज्या रुग्णांना किरकोळ आजार आहे त्यांनी बहुउद्देशीय आरोग्य कर्मचारी (पुरुष व महिला) व वैद्यकीय अधिकाऱ्यांशी दूरध्वनी द्वारे संपर्क साधण्यास हरकत नाही.
- ज्या HWC/PHC येथे telemedicine सुविधा उपलब्ध असेल तेथे त्या सुविधेचा वापर करण्यात यावा.

इतर सर्वसाधारण सूचना

- सर्व लाभार्थींना प्रयोग शाळा तपासणी तसेच औषधे मोफत मिळतील याची दक्षता घ्यावी.
- बाह्यसंपर्क सेवा उदा. लसीकरण, प्रसूती पूर्व तपासण्या, ई सेवा ची पुनर्रचना लॉकडाऊन कालावधी मध्ये आवश्यकतेनुसार करण्यात यावी. जेथे शक्य असेल त्याठिकाणी या सेवा दिवस निश्चित करून आशा मार्फत दूरध्वनीद्वारे लाभार्थींना कळविण्यात यावे. प्रत्येक गाव व वार्डनिहाय दिवस निश्चित करून घ्यावा. ह्या सेवा देताना social distancing चा वापर करून आवश्यकतेनुसार ४-५ सत्रांमध्ये देण्यात याव्यात.
- आवश्यकतेनुसार अतिरिक्त लसीकरण सत्रे आयोजित करण्यात यावीत. आशा कार्यकर्तींनी गर्दी टाळण्यासाठी एकावेळी फक्त ४-५ लाभार्थींना आरोग्य केंद्रात घेऊन यावे. आवश्यकतेनुसार राष्ट्रीय आरोग्य अभियानांतर्गत उपलब्ध निधीचा वापर करून सेवानिवृत्त परिचारिकांचा वापर करण्यात यावा.
- आशा कार्यकर्तींनी लाभार्थींना उदा. गरोदर माता, वयस्कर नागरिक, दिव्यांग ई. यांना नियमित घरभेटी दिल्या जातील याची खात्री करावी.
- PHC/HWC चमुनेअतिजोखमीच्या माता, नवजात बालके, लहान मुले यांचे लसीकरण, इतर आजाराचे रुग्ण उदा. क्षयरोग, कुष्ठरोग, एच.आय.व्ही, उच्चरक्तदाब, मधुमेह, श्वसन संस्थेचे गंभीर आजार, मानसिक आजार व इतर आजारांच्या उपचार व घरभेटीद्वारे नियमित पाठपुरावा करावा. तसेच Dialysis, कर्करोगावरील उपचार व नियोजित रक्त संक्रमणे ई. सेवा नियमित सुरु राहतील असे पहावे.

- काही गुंतागुंत उद्भवल्यास उपकेद्रातील आरोग्य चमुने प्रथम त्यांच्या वैद्यकीय अधिकाऱ्यांना दूरध्वनीद्वारे रुग्णांना संदर्भित करण्याबाबत मार्गदर्शन घ्यावे.
- मागील १४ दिवसात खोकला, ताप व श्वसनाचे आजार असलेल्या व कोव्हीड संशयित रुग्णांच्या चाचणी करिता सर्व आरोग्य कर्मचार्यांना प्रशिक्षण द्यावे. त्यांचे प्रशिक्षण झाले नसल्यास त्यांना प्रशिक्षित करावे.
- क्षेत्रीय स्तरावर सेवा देणारे सर्व कर्मचारी यांना तत्पर राहून त्यांच्या कार्यक्षेत्रातील न्युमोनिया सह SARI,ILI इत्यादी आजाराचे वाढते रुग्ण आढळून आल्यास त्वरित कळवावे.
- मनुष्यबळाची कमतरता टाळण्यासाठी कोरोना बाधित नसलेल्या क्षेत्रातील तात्पुरत्या स्वरूपात मनुष्यबळाचा वापर करण्यात यावा. सेवानिवृत्त कर्मचार्यांचे/कोव्हीड योद्ध्यांचे सहकार्य आवश्यकतेनुसार घेण्यात यावे.
- सर्व कर्मचार्यांची सुरक्षितता राखण्याची दक्षता घ्यावी तसेच संसर्ग रोखण्याकरिता आवश्यक ती कालजी घ्यावी. सर्व आरोग्य कर्मचार्यांनी Infection Prevention Control तसेच Social Distancing, Personal Protection याबाबत वेळोवेळी दिलेल्या मार्गदर्शक सूचनांचे तंतोतंत पालन करावे व स्वतःचे रक्षण करावे. सदर सूचना खाजगी व इतर आरोग्य संस्थाना देखील लागू आहेत.
- सर्व संस्थांमध्ये हात धुण्यासाठी साबण, पाणी यांची व्यवस्था करावी.
- सर्व आरोग्य कर्मचार्यांचे मानसिक स्वास्थ्य उत्तम राहण्यासाठी त्यांनी हेल्पलाईन (१०४) ला आवश्यकतेनुसार फोन करण्याच्या सूचना द्याव्यात.
- सर्व आशा कार्यकर्तींना देय मानधन त्वरित वितरीत करावेत.
- गरजेनुसार कर्मचार्यांना वाहन व निवास व्यवस्था उपलब्ध करून देण्यात यावी.
- सर्व आरोग्य संस्थांमध्ये निधी उपलब्धतेबाबत खात्री करावी.

भाग २ : आवश्यक नॉन कोव्हीड सेवा

राज्यामध्ये कोव्हीड प्रतिबंधासाठीच्या सर्व सूचनांचे पालन करूनखालील सेवा प्राधान्याने सुरु राहतील याची दक्षता घ्यावी.

१. संसर्गजन्य आजार व नियंत्रण उपाययोजना.
२. प्रजनन आरोग्य सेवा विशेषतः प्रसूती दरम्यान द्यावयाच्या सेवा.
३. अतिजोखमीचेवयोगट उदा. लहान मुले व वयोवृद्ध .
४. मानसिक आजारांसह असंसर्गजन्य आजारांसाठीचा औषध पुरवठा .
५. गंभीर रुग्णांना द्यावयाची आरोग्य सेवा.
६. तातडीची वैद्यकीय सेवा .
७. प्रयोगशाळा, एक्स-रे, रक्तपेढी ई. सहाय्यक सेवा .

भाग-३ - लाभार्थींना द्यावयाच्या सेवा:

३.१ माता आरोग्य

कार्यक्रम उपक्रम	कंटेनमेंट आणि बफरझोन	बफरझोन वगळून आणि ग्रीनझोन
प्रसूती पूर्व सुविधा	<ul style="list-style-type: none"> • VHSND/UHSND आयोजित करू नये • PMSMA स्थगित करावे. • प्रसूतीपूर्व सुविधा ह्या संस्थेस भेट देणा-या लाभार्थींसाठी मर्यादित ठेवणे . • अत्यंत जोखमीच्या गर्भवती महिलांची यादी आणि पाठपुरावा Tele consultation द्वारे करावा. लाभार्थी तपासणी कंटेनमेंट बाहेरील हॉस्पिटल मध्ये आयोजित करावी. 	<ul style="list-style-type: none"> • अखंड प्रसूती पूर्व सेवा • PMSMA सुरु ठेवणे • सुधारित VHSND/UHSND

३.३ लसीकरण कार्यक्रम

कार्यक्रमांतर्गत उपक्रम	कंटेनमेंट व बफर झोन	बफर झोन वगळून आणि ग्रीन झोन
जन्मतः करण्यात येणारे लसीकरण	लाभार्थी हे संस्थेमध्ये उपलब्ध असल्या कारणाने लसीकरण सर्व संस्थेमध्ये पुर्ववत चालू ठेवावे.	
लसीकरण	<ul style="list-style-type: none"> संस्थांच्या परिसरात असलेले लाभार्थीकरीता लसीकरण सेवा. बाह्य संपर्क सत्र घेऊ नये. (व्हीएचएनडी/व्हीएचएसएनडी) जमाव बोलवू नये. 	संस्थात्मक व बाह्यसंपर्क सत्र दोन्ही सुधारित व्हीएचएनडी /युएचएसएनडी प्रमाणे बाह्य सत्र चालू ठेवावेत.

- राष्ट्रीय लसीकरण वेळापत्रकानुसारसर्व लाभार्थींना लसीकरण दिले जात आहे याची खात्री करावी .
- जिल्हा/मनपा कार्यक्षेत्रामधील containment & bufferzone च्या यादीतून बाहेर पडल्याच्या दिनांकापासून सदर zone मध्ये कमीत कमी १४ दिवसानंतर बाह्यसंपर्क सत्र सुरु करण्यात यावीत.
- लसीकरण सत्र करणाऱ्या आरोग्य सेविकेने ३ layered surgical mask आणि gloves घालावेत व प्रत्येक लसीकरण झाल्यानंतर हात sanitize करावे.
- लसीकरण सत्र दरम्यान social distancing चे नॉर्म काटेकोरपणे पाळावे.
- लसीकरणाद्वारे टाळता येणारे आजाराचे सर्वेक्षण नियमित चालू ठेवावे.
- ५०० पेक्षा कमी लोकसंख्येसाठी १ बाह्यसंपर्क सत्र नियमित करण्यात येईल जेणेकरून सत्रात १०- १५ लाभार्थी असतील.प्रत्येक तासात ४-५ लाभार्थी येतील याप्रमाणे नियोजन करावे.
- Reconstitution लसी उदा. BCG/JE/Rota व MR चे अतिरिक्त डोसेस उपलब्ध ठेवावेत.

सत्राचे नियोजन -

अ) Staggered Approach- वेळ वाचवण्याकरिता व गर्दी टाळण्याकरिता खालील उपाय करावेत.

- प्रत्येक सत्राकरिता आलेल्या लाभार्थ्यांना वेळ नियोजित करून दयावी जेणेकरून लाभार्थी त्यांना दिलेल्या सुचनेनुसार सत्रास उपस्थित राहतील.
- Social distancing पाळण्याकरिता पर्यायी सत्राचे ठिकाण सुनिश्चित करावे.

ब) ब्रेकअप सत्र (Break up Session)

- गावातील होणारी एक सत्राला दोन सत्रांमध्ये नियोजित करावे जेणेकरून सत्राच्या ठिकाणी गर्दी टाळण्यात येईल.

३.४ नवजात व बालकांचे आरोग्य

कार्यक्रमांतर्गत उपक्रम	कंटेनमेंट झोन बफर झोन	बफर झोन बाहेर आणि ग्रीन झोन
आजारी नवजात मुलांची काळजी एसएनसीयु , डिचार्जचा पाठपुरावा कौटुंबिक सहभागाची काळजी (Family participatory care)	<ul style="list-style-type: none"> आजारी नवजात मुलांसाठी देण्यात येणा-या सेवा (कोवीड स्टेटस चा विचार नकरता) जवळच्याएसएनसीयु/एनबीएसयु मध्ये पुरविल्या पाहिजे. तसेच रेफरल सेवा सुनिश्चित केली पाहिजे. 	<ul style="list-style-type: none"> सर्व सेवा मार्गदर्शक सुचनांनुसार सुरु ठेवाव्यात.

	<ul style="list-style-type: none"> • नेहमी प्रमाणे एसएनसीयु चा पाठपुरावा Tele consultation व्दारा घेण्यात यावा तथापि गंभीर लक्षणे दिसणा-या नवजात शिशुचे रेफरल नजीकच्या एसएनसीयु मध्ये योग्य रेफरल व्यवस्थेद्वारे करावे. • एसएनसीयु मधील कौटुंबिक सहभाग टाळावा. (Family participatory care) • आरोग्य कर्मचारी कोव्हीड योद्धांकडून घरोघरी भेट देऊन बालकांसाठी पुरविण्यात येणा-या सुविधांची माहिती घेणे तसेच आवश्यक सेवा पुरविण्यात याव्यात. • कोव्हीड योद्ध्यांना या सेवांमध्ये गरजेनुसार प्रशिक्षण दयावे. 	
एचबीएनसी आणि होम बेस्ड यंग चाईल्ड केअर (एचबीवायसी)	<ul style="list-style-type: none"> • एचबीएनसी/एचबीवायसी सेवा Tele consultation व्दारे देण्यात याव्यात. आरोग्य कर्मचारी/कोव्हीड योद्धांकडून घरोघरी भेट देऊन बालकांसाठी पुरविण्यात येणा-या सुविधांची माहिती घेणे तसेच आवश्यक सेवा पुरविण्यात याव्यात. • कोव्हीड योद्ध्यांना या सेवांमध्ये गरजेनुसार प्रशिक्षण दयावे. 	<ul style="list-style-type: none"> • एचबीएनसी/एचबीवायसी भेटी मार्गदर्शक सुचनानुसार सुरु ठेवाव्यात.
आरबीएसके	<ul style="list-style-type: none"> • प्रसुती झालेल्या सर्व आरोग्य संस्थामध्ये नवजात शिशुचे स्क्रीनिंग करण्यात यावे. • मोबाईल हेल्थ टीमच्या माध्यमातून मुलांच्या स्क्रीनिंग पुढे ढकलण्यात यावे. • लाभार्थींसाठी मागणी नुसार डीईआयसी च्या सेवा देण्यात याव्यात. • ठरवून दिलेल्या रुग्णालयात ४ डी च्या बालकांचे उपचार पूर्ववत सुरु ठेवावेत. 	<ul style="list-style-type: none"> • मोबाईल हेल्थ टीम च्या माध्यमातून होणारे मुलांचे स्क्रीनिंग शाळा व आंगणवाडी पुन्हा सुरु होईपर्यंत थांबविण्यात यावे. • ४ डी च्या बालकांचे उपचार पूर्ववत सुरु ठेवावेत.
पोषण पुनर्वसन केंद्रामध्ये SAM बालकांचे व्यवस्थापन	<ul style="list-style-type: none"> • आजारी SAM बालकांना नजीकच्या एनआरसी मध्ये सेवा पुरविणे. 	<ul style="list-style-type: none"> • उपलब्ध मार्गदर्शक सूचनानुसार आजारी SAM बालकांचे व्यवस्थापन चालू

	<ul style="list-style-type: none"> • योग्य संदर्भिय सेवेची खात्री करावी. • नियमित पाठपुरावा हा टेलिफोन सल्लयाद्वारे करावा. • आरोग्य कर्मचारी /कोव्हीड योद्धांकडून घरोघरी भेट देऊन बालकांसाठी पुरविण्यात येणा-या सुविधांची माहिती घेणे तसेच आवश्यक सेवा पुरविण्यात याव्यात. • कोव्हीड योद्ध्यांना या सेवांमध्ये गरजेनुसार प्रशिक्षण द्यावे. 	ठेवावे.
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नवजात शिशु व बाल आरोग्य सेवांबद्दल विशेष मार्गदर्शन- कोविडच्या परिस्थितीतही बालक व माता शक्य तितके एकत्र ठेवावित व प्रसूतिनंतर १ तासाच्या आत स्तनपान सुरु करावे. मातेने चेहे-यावर मारक वापरावे व प्रत्येक स्तनपानावेळी हात स्वच्छ धुवावेत.

- गंभीर आजाराने ग्रस्त बालकांना SNCU च्या सेवा पुरविण्यात याव्यात.
- सर्व SAM बालकांना पोषण पुनर्वसन केंद्रांमध्ये दाखल करून घ्यावे व तेथून डिस्चार्ज झालेल्या बालकांचा पाठपुरावा नियमितपणे करण्यात यावा.
- WIFS गोळ्यांचा किमान ३ महिन्यांचा साठा आशा कार्यकर्तीकडे उपलब्ध आहे याची दक्षता घ्यावी.
- प्रत्येक आशाने गावातील शाळेत जाणाऱ्या व न जाणाऱ्या किशोरवयीन मुलामुलींना त्यांच्या वयानुसार गुलाबी गोळी (५ ते १० वर्षे) व निळी गोळी (११ ते १९ वर्षे) द्यावी.

३.५ किशोरवयीन आरोग्य

कार्यक्रमांतर्गत उपक्रम	कंटेनमेंट व बफर झोन	बफर झोन वगळून आणि ग्रीन झोन
अर्श कार्यक्रम (AFHC & AHD)	किशोरवयीनकरिता Tele consultation द्वारे सेवा दयाव्यात व नजीकच्या लाभार्थ्यांना सेवा दयावी.	<ul style="list-style-type: none"> • AFHC सेवा सुरु ठेवण्यात यावी. • गर्दी टाळण्याकरिता AHD च्या सुधारित मार्गदर्शक सूचना नुसार सेवा दयाव्यात. • आयएफए गोळ्या व सॅनिटरी नॅपकीन्सचे वितरण करावे.

यासह कोव्हिड -१९ कालावधीमध्ये गर्भवती महिलांच्या व्यवस्थापनासाठी ICMR-NIRRH ने मार्गदर्शक सूचना दिल्या आहेत. त्यांचा देखील उपयोग करण्यात यावा.

भाग ४ - संसर्गजन्य आजार :

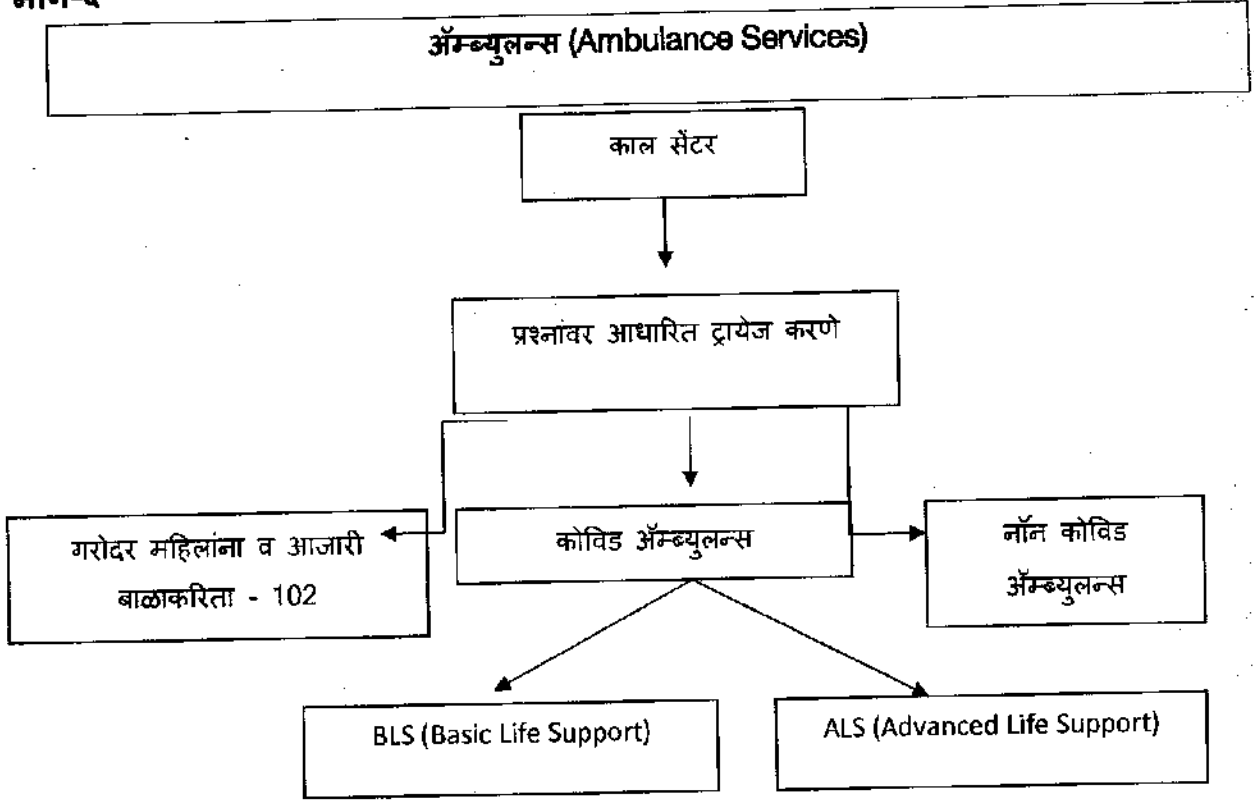
किटकजन्य रोग नियंत्रण कार्यक्रम- ताप रुग्णांचे नियमित सर्वेक्षण करण्यात यावे. Dengue, chikunguniya या रोगांसाठी कीटकशास्त्रीय सर्वेक्षण नियमित गृहभेटी च्या वेळी करण्यात यावे. तसेच अळीनाशक कामे व धुरळणी आवश्यकतेनुसार करण्यात यावी. किटकनाशक भारीत मच्छरदाण्याचा पुरवठा Lockdown कालावधी संपल्यानंतर करण्यात यावा. तसेच दिलेल्या मार्गदर्शक सूचनांप्रमाणे कार्यक्रमाची अंमलबजावणी करण्यात यावी.

- **क्षयरोग नियंत्रण कार्यक्रम-** DOTS चा नियमित पुरवठा होईल याकडे प्राधान्याने लक्ष द्यावे
- सर्व HIV ग्रस्त रुग्णांना ३ महिन्यांचा औषध पुरवठा करण्यात यावा. इतर राज्यातील HIV ग्रस्त रुग्णांना देखील Lockdown च्या काळात औषधे मिळतील हे सुनिश्चित करावे. NACP ने दिलेल्या सूचनांची काटेकोरपणे अंमलबजावणी करावी.
- **कुष्ठरोग दूरीकरण कार्यक्रम-** सर्व कुष्ठरोग रुग्णांना नियमित औषध पुरवठा करण्यात यावा

भाग ५ - असंसर्गजन्य आजार:

- उच्चरक्तदाब, मधुमेह तसेच श्वसन संस्थेचे तीव्र आजार यासाठी ३ महिन्यांचे औषधीचासाठा आशाकार्यकर्ती मार्फत उपलब्ध करून देण्यात यावा.
- संदर्भ सेवेसाठी १०२/१०८ सेवा अविरत सुरु राहतील असे पहावे.


भाग-६



भाग ७ - इतर:

- वयोवृद्ध व्यक्ती व बालके यांना सर्व आवश्यक सेवा पुरविल्या जातील याकडे प्राधान्याने लक्ष द्यावे.
- EDL/ECL नुसार सर्व औषधींचा साठा उपलब्ध राहिल याची दक्षता घ्यावी.
- सर्व दुर्घर आजाराने ग्रस्त रुग्णांची आरोग्य सेवा सुनिश्चित करावी.
- आपल्या कार्यक्षेत्रातील X-RAY, CT SCAN, रक्त पेढ्या, तसेच प्रयोग शाळा सुरु राहतील याची दक्षता घ्यावी.
- हॅल्थ वेलनेस सेंटर मध्ये नियमानुसार सर्व औषधी उपलब्ध आहेत याची खात्री करावी.

आपल्या कार्यक्षेत्रामध्ये सर्व लाभार्थींना वरीलप्रमाणे सेवा मिळतील याबाबत योग्य त्या सूचना निर्गमित कराव्यात व दिलेल्या सूचनांचे काटेकोरपणे पालन होत आहे याची दक्षता घेण्यात यावी


(डॉ. अर्चना पाटील)
संचालक आरोग्य सेवा, पुणे

प्रत माहितीस्तव:

उपसंचालक, आरोग्य सेवा, मंडळ..... सर्व माहिती व योग्य त्या कार्यवाही साठी रवाना

प्रत सविनय सादर

१. मा प्रधान सचिव सार्वजनिक आरोग्य विभाग मंत्रालय मुंबई - १

२. मा आयुक्त तथा अभियान संचालक रा आ अ मुंबई - १

Recommendations

Perinatal-Neonatal Management of COVID-19 Infection – Guidelines of the Federation of Obstetric and Gynecological Societies of India (FOGSI), National Neonatology Forum of India (NNF), and Indian Academy of Pediatrics (IAP)

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INDIA (FOGSI), NATIONAL NEONATOLOGY FORUM OF INDIA (NNF), AND INDIAN ACADEMY OF
PEDIATRICS (IAP)**

(This is a preprint version of an article submitted for publication to Indian Pediatrics. Changes may be made before final publication)

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PII: S097475591600154

***Note:** This early-online version of the article is an unedited manuscript that has been accepted for publication. It has been posted to the website for making it available to readers, ahead of its publication in print. This version will undergo copy-editing, typesetting, and proofreading, before final publication; and the text may undergo minor changes in the final version.*

ABSTRACT

Justification: During the current rapidly evolving pandemic of COVID-19 infection, pregnant women with suspected or confirmed COVID-19 and their newborn infants form a special vulnerable group that needs immediate attention. Unlike other elective medical and surgical problems for which care can be deferred during the pandemic, pregnancies and childbirths will continue. Perinatal period poses unique challenges and care of the mother-baby dyads requires special resources for prevention of transmission, diagnosis of infection and providing clinical care during labor, resuscitation and postnatal period. **Process:** The GRADE approach recommended by the World Health Organization was used to develop the guideline. A Guideline Development Group (GDG) comprising of obstetricians, neonatologists and pediatricians was constituted. The GDG drafted a list of questions which are likely to be faced by clinicians involved in obstetric and neonatal care. An e-survey was carried out amongst a wider group of clinicians to invite more questions and prioritize. Literature search was carried out in PubMed and websites of relevant international and national professional organizations. Existing guidelines, systematic reviews, clinical trials, narrative reviews and other descriptive reports were reviewed. For the practice questions, the evidence was extracted into evidence profiles. The context, resources required, values and preferences were considered for developing the recommendations. **Objectives:** To provide recommendations for prevention of transmission, diagnosis of infection and providing clinical care during labor, resuscitation and postnatal period. **Recommendations:** A set of twenty recommendations are provided under the following broad headings: 1) pregnant women with travel history, clinical suspicion or confirmed COVID-19 infection; 2) neonatal care; 3) prevention and infection control; 4) diagnosis; 5) general questions.

Keywords: *Diagnosis, Labor, Management, Newborn, Pregnancy, Outcome.*

Coronaviruses are RNA viruses with glycoprotein spikes that give them a crown like appearance [1,2]. Four species have been in circulation for a long time and cause mild respiratory disease. They have a lot of genetic diversity and have jumped the species barrier leading to severe respiratory disease (the SARS virus in 2002-2003 and the MERS virus in 2012-2013). In December, 2019, a novel coronavirus emerged in Wuhan City of Hubei Province in China; this was later termed as SARS-CoV-2 or COVID-19. This virus has subsequently spread throughout the world causing more than 600000 cases and 20000 deaths (till 29/3/2020). More than 900 cases and 12 deaths have been reported from India [3].

The disease spreads by droplets generated by infected people during sneezing and coughing. These are large droplets that travel for 1-2 m and settle on surfaces on which the virus remains alive for hours or days [4]. Infected person can also spread the infection even before the onset of symptoms. Infection is acquired by either inhalation of infected droplets or touching surfaces/fomites contaminated with the infected droplets and then touching the eyes, nose or mouth. Incubation period varies from 2-14 days with a median of 5 days [2]. The average number of people infected by one infected individual is between two

to three. The clinical symptoms are variable, ranging from asymptomatic state to acute respiratory distress syndrome and multi organ dysfunction [5]. In adults, common symptoms include fever, cough, breathlessness, fatigue, myalgia, headache and sore throat, while vomiting, diarrhea, sneezing and conjunctivitis are uncommon. Current evidence suggests that 80-85% of cases are mild, 10-15 % are severe with lower respiratory tract involvement, and 5% are critical, needing ICU care. The fatality rate is reportedly between 2-3% but can vary from 0.5-10% depending on the number tested, the percentage of elderly people in the population and availability of critical care support in the hospitals. The severity and fatality are higher in the elderly especially above the age of 60 (among those aged more than 80 years, fatality rate was 15%) and those with comorbidities like heart disease, hypertension, diabetes etc. There is paucity of data on COVID-19 in pregnancy and neonates [6]. Available data suggests that in general the outcome among pregnancy women and neonates is good. Only in one case series, neonatal outcomes were adverse; whether these were due to COVID-19 or other neonatal problems is uncertain. Though there is no clear evidence of intrauterine transmission till date, based on a very small number of cases studied, it is possible.

METHODS

These guidelines have been developed jointly by the Federation of Obstetric and Gynecological Societies of India, National Neonatology Forum of India, and Indian Academy of Pediatrics. The GRADE approach recommended by World Health Organization (WHO) was used to develop the guideline [7]. A Guideline development group (GDG) comprising of obstetricians, neonatologists and pediatricians was constituted. The GDG drafted a list of questions which are likely to be faced by clinicians involved in obstetric and neonatal care. An e-survey was carried out amongst a wider group of clinicians to invite more questions and prioritize. Literature search was carried out in PubMed combining the search term ("coronavirus"[MeSH Terms] OR "coronavirus"[All Fields])) AND 2019/12[PDAT] : 2030[PDAT]) OR 2019-nCoV[All Fields] OR 2019nCoV[All Fields] OR COVID-19[All Fields] OR SARS-CoV-2[All Fields]) with other key words relevant to the practice question being answered (search updated on 25 March, 2020). In addition, websites of the relevant international and national professional organizations were searched [5,8-15]. Guidelines, systematic reviews, trials, narrative reviews and other descriptive reports were reviewed. For PICO (participants, intervention, control and outcome) questions, the evidence was extracted into evidence profiles. The context, resources required, values and preferences were considered for developing the recommendations.

OBJECTIVES

The objective of these guidelines is to provide guidance on the short-listed clinical practice questions (**Box I**).

Pregnant Women

Of the 1794 articles on the coronavirus infection, 36 addressed the issue in pregnant women. No clinical trials have compared specific care including isolation strategies in pregnant women. A total of eight studies (10 case series/reports and one retrospective cohort study) reported outcome in 73 women with pregnancy and coronavirus infection [6,16-28]. Due to absence of comparative group it is not possible to estimate the effect of COVID-19 infection in pregnancy. However, almost all pregnant women had mild infection. One (1.4%) of 73 died due to severe disease. No clinical trials have compared specific care including isolation strategies in pregnant women. Majority of women in these studies were delivered by C-section; however, in the only case-control study, all controls were also delivered by C-section. Incidence of C-section is high in China, from where all studies have originated, and it is not possible to infer that Covid-19 infection increases the probability of C-section. Literature indicates possibility of higher incidence of fetal distress in infected pregnant women. However, due to small sample size and lack of comparison group, no definite inference can be made. As pneumonia has been reported in the case reports, pregnant women with infection need to be monitored for respiratory compromise during childbirth.

The treatment of COVID-19 viral infection has been attempted by two approaches. The first approach is the use of a combination of Hydroxychloroquine and Azithromycin [29]. These drugs are readily available and cost-effective in India. The other approach has been to use antiviral drugs, some of which are not yet available in India [30]. Hydroxychloroquine in a dose of 600 mg (200 mg thrice a day with meals) and Azithromycin (500 mg once a day) for 10 days has been shown to give virologic cure on day 6 of treatment in 100% of treated patients in one study. The study included 20 treated patients with upper and lower respiratory symptoms. In this study, pregnancy was an exclusion criterion. However, as such, both these drugs have been used in pregnancy and during breastfeeding without significant effects on the mother or fetus. Alternative dosage regimens for hydroxychloroquine are to give 400 mg twice a day on day 1 and then 400 mg once a day for the next four days. Chloroquine can also be used as an alternative. The dose is 500 mg twice a day for 7 days. Some authorities recommend that azithromycin should be added only where there is a clinical suspicion of superadded bacterial infection. Lopinavir-ritonavir was the first antiviral combination used to treat COVID-19 infection. However, there was no difference in time to clinical improvement or mortality at 28 days in a randomized trial of 199 patients with severe COVID-19 given lopinavir-ritonavir (400/100 mg) twice daily for 14 days in addition to standard care *versus* those who received standard of care alone [30]. Other agents such as Remdesivir are being evaluated in randomized trials [31]. Clinicians should follow the latest updated national guidelines released by Indian Council of Medical Research/Ministry of Health and Family Welfare.

Maternal-fetal Transmission and Neonatal Cases

Schwartz, et al. [6] described a series of 38 Chinese women in labor and delivery who tested positive for COVID-19. All women were in the third trimester of pregnancy, and SARS-CoV-2 positivity was confirmed by rt-PCR. These pregnancies resulted in 39 infants (one set of twins); detailed clinical

information, obstetrical outcomes and SARS-CoV-2 status were available for 30 neonates. Among these 30 neonates, there were no cases of rt-PCR-confirmed SARS-CoV-2 infection, despite the existence of perinatal complications in some of the infants. The virus was not identified in the amniotic fluid, placenta, and breastmilk of six mothers or in the nasal secretions of their neonates tested so far. Early in the epidemic, two cases of neonatal SARS-CoV-19 infection were reported. One was an infant diagnosed at 17 days of life having a history of close contact with two confirmed cases of SARS-CoV-2 infection (mother and nanny), and the other was a neonate who was found to be infected 36 hours following delivery. In both infants, there was no direct evidence for vertical transmission, and because viral testing was delayed, a postpartum neonatal infection acquired through an infected contact could not be eliminated.

Neonatal exposure definitions: As per the Chinese consensus guidelines, neonates are said to be exposed to COVID-19 if they are born to the mothers with a history of COVID-19 infection diagnosed 14 days before delivery or 28 days after delivery, or if the neonate is directly exposed to close contacts with COVID-19 infection (including family members, caregivers, medical staff, and visitors) [32,33]. They should be managed as patients under investigation (PUI) irrespective of whether they are symptomatic or not.

Literature was searched for articles on the effect of COVID19/SARS-CoV-2 infection in neonates or pregnant women or breast feeding. The group also accessed the web resources available on websites of different professional organizations. Of the 1629 articles retrieved, 34 addressed the issue of perinatal and neonatal management of COVID-19. No clinical trials have compared the effect of direct breastfeeding with that of feeding expressed breastmilk (EBM), human donor milk, or formula milk in neonates exposed to SARS-CoV-2 infection. A total of eight studies (7 case series/reports and one retrospective cohort study) reported outcomes in 42 women with pregnancy and coronavirus infection [6]. Almost all (41 of 42) were delivered by C-section and the neonates were isolated from their infected mothers. There was no evidence of vertical transmission of the infection from mother to fetus/neonate. The virus was not detected in expressed breastmilk either. Out of the eight studies, four did not provide any details of the feeding policy; breastfeeding was not allowed in the remaining four studies.

No clinical trials have compared isolation *versus* rooming-in of neonate with mother. Two neonates have been reported to have infection, one at 36 hour of birth and second at 17 days of life [23,26]. In the first case, baby was immediately isolated from the mother wearing N-95 mask during C-section. However, postnatal contact with another infected human could not be ruled out; therefore, postnatal infection was considered most likely. In the second case, household contact with two persons including mother was present. An estimation of the risk of transmission of the Coronavirus has shown basic reproduction number (R0) of 2.24 to 3.58 indicating high risk of infection on contact with an infected human [2,34]. There is no evidence that this risk estimate does not apply to neonates in the postnatal period.

No clinical trials have compared the effect of different antivirals, other drugs like chloroquine or hydroxychloroquine or adjuvant treatment like corticosteroids and intravenous gamma globulin in neonates.

A total of eight studies (7 case series/reports and one retrospective cohort study) reported outcomes in 42 women with pregnancy and suspected or confirmed COVID-19 [6]. Most of them had an uneventful clinical course after birth. Only one infant died during the birth hospitalization. None of the infants received any specific treatment with antivirals or chloroquine/hydroxychloroquine. Two neonates, who were detected to have the infection, improved with only supportive care.

RECOMMENDATIONS

Pregnant Women with Travel History, Clinical Suspicion or Confirmed Infection

Recommendation 1

- Pregnant women with a history of travel to designated countries or areas, or with exposure to a confirmed/suspected case of COVID-19 should be isolated by using the guidelines for non-pregnant adults [35].
- In the absence of community spread isolation at the designated facility and in the presence of community spread, isolation by home quarantine may be preferred.

Recommendation 2

- The criteria for offering a laboratory test are the same for pregnant women and the non-pregnant population [36].

Recommendation 3

- Separate delivery room and operation theatres are required for management of suspected or confirmed Covid19 mothers. Both should have neonatal resuscitation corners located at least 2 m away from the delivery table. Resources required include space, equipment, supplies and trained healthcare providers for delivery, caesarean section and neonatal resuscitation.
- The standards and facilities required for infection control in these areas should be same as that for other adults with suspected or confirmed COVID-19.

Recommendation 4

- When providing healthcare to women in labor with confirmed or suspected COVID-19 infection, follow standard universal precautions to prevent contact with body fluids. In addition, use personal protective equipment (PPE) to prevent acquiring infection through respiratory droplets. The PPE should include masks such as the N95 masks and face protection by a face shield or at least goggles.
- The women should inform the facility in advance of her arrival if possible, in order to allow time for preparation.
- Reception and triage should be in the same room earmarked for admission in labor and delivery. Ideally, this should be a room with negative pressure (If not available, exhaust fans can be installed).

- Keep the room free from any unnecessary items (decorations, extra chairs, etc.) which could act as infected fomites later.
- There should be a restriction on the number of attendants and non-essential staff into the room.
- There should be facilities for health care providers to remove and safely discard PPE at the exit of the room in which the patient is being cared for.

Recommendation 5

- Mode of delivery in pregnant women infected with COVID-19 should be guided by her obstetric assessment and her physiological stability (cardiorespiratory status and oxygenation). COVID-19 infection itself is not an indication for induction of labor or operative delivery.
- Continuous electronic fetal monitoring should be done during labor. If facilities for continuous electronic fetal monitoring are not available, manual monitoring by frequent auscultation of fetal heart rate should be done during the labor as indicated for a high-risk delivery.
- Adequate equipment and trained healthcare providers should be available for intrapartum monitoring and obstetric interventions as indicated in the separate childbirth facilities for infected pregnant women.
- Oxygenation status of women during labor should be monitored by a pulse oximeter and oxygen therapy should be titrated to maintain oxygen saturation of more than 94%.

Recommendation 6

- Pregnant women with active COVID-19 infection should be managed with supportive and specific therapy as recommended for non-pregnant adults.
- Currently recommended management includes: - oxygen therapy/respiratory support, fluid therapy, antibiotics, shock management, and specific drugs in severe cases.

Options:

Hydroxychloroquine 200 mg thrice-a-day with meals x 10 days OR 400 mg twice-a-day on day 1 and 400 mg once-a-day x 4 days + Azithromycin 500 mg twice-a-day x 7 days (Weak recommendation; Low quality evidence)

Lopinavir/ Ritonavir if any of the following criteria are met:

1. Hypoxia,
2. hypotension,
3. New onset organ dysfunction (one or more)
 - 3.1. Increase in creatinine by 50% from baseline, GFR reduction by >25% from baseline or urine output of <0.5 ml/kg for 6 hours.
 - 3.2. Reduction of GCS by 2 or more
 - 3.3. Any other organ dysfunction

4. High Risk Groups:

4.1. Age > 60 years

4.2. Diabetes Mellitus, Renal Failure, Chronic Lung disease

4.3. Immunocompromised persons

Dosage:

Lopinavir/ Ritonavir (200 mg/ 50 mg) – 2 tablets twice daily

For patients unable to take medications by mouth: Lopinavir 400mg/Ritonavir 100 mg – 5mL suspension twice daily

Duration: 14 days or for 7 days after becoming asymptomatic

The choice of specific antiviral therapy is likely to change with rapidly emerging evidence and updated national guidance should be consulted. Updated guidance can be accessed at the website of Ministry of Health and Family Welfare: <https://www.mohfw.gov.in/>

Neonatal Care

Recommendation 7

Recommendations for neonatal resuscitation:

- If possible, resuscitation of neonate may be done in a physically separate but inter-connected adjacent room earmarked for this purpose. If not feasible, the resuscitation warmer should be physically separated from the mother's delivery area by a distance of at least 2 meters. A curtain can be used between the two areas to minimize opportunities for close contact.
- Minimum number of personnel should attend (one person in low risk cases and two in high risk cases where extensive resuscitation may be anticipated) and wear a full set of personal protective equipment including N95 mask.
- Mother should perform hand hygiene and wear triple layer mask.
- The umbilical cord should be clamped promptly and skin to skin contact avoided.
- Delivery team member should bring over the neonate to the resuscitation area for assessment by the neonatal team.
- Neonatal resuscitation should follow standard guidelines. If positive-pressure ventilation is needed, self-inflating bag and mask may be preferred over T-piece resuscitator.

Recommendation 8

- A. Stable neonates exposed to COVID-19 infection from mothers or other relatives should be roomed-in with their mothers and be exclusively breastfed.
- B. If rooming-in is not possible because of the sickness in the neonate or the mother, the neonate should be fed expressed breast milk (EBM) of the mother by a nurse or family member who has

not been in contact with the mother or other suspected/proven case, provided the neonate can tolerate enteral feeding.

(Weak recommendation, based on consensus among experts in the absence of evidence for any beneficial effect or harm in the risk of COVID-19 following direct breastfeeding or expressed breastmilk feeding)

Conditions to be met

- Mothers should perform hand hygiene frequently, including before and after breastfeeding and touching the baby.
- Mothers should practice respiratory hygiene and wear a mask while breastfeeding and providing other care to the baby; they should routinely clean and disinfect the surfaces.
- Mothers should express milk after washing hands and breasts and while wearing a mask. If possible, a dedicated breast pump should be provided. It should be decontaminated as per protocol. Expressed milk can be fed to the baby without pasteurization. The collection and transport of EBM to the baby should be done very carefully to avoid contamination.

Recommendation 9

Scenario 1: If resources for isolation of normal, suspected to be infected and infected mothers can be made available AND there is no evidence of community spread

- After immediate cord clamping, the neonate should be isolated from the mother.
- During isolation, healthy neonates should preferably be cared for by a nurse or family member not in contact with mother or other suspected/proven case. Such care can be provided in an isolation ward taking care that persons with suspected/proven infection are not allowed in the area.
- Mother can express milk after washing hands and breasts and while wearing mask. This expressed milk can be fed to her own baby without pasteurization.
- Mother and baby can be roomed-in once mother has been tested and declared to be clear of infection.
- To facilitate early rooming-in, viral testing in mothers with suspected infection should be conducted and reported on priority.
- If mother cannot be discharged and it is considered safe, early discharge to home with healthy family member followed by telephonic follow-up or home visit by a designated healthcare worker can be considered.

Scenario 2: Resources for isolation of normal, suspected to be infected and infected mothers not available OR healthcare facilities are overwhelmed because of large number of Coronavirus infections OR evidence of community spread is present

- Stable neonate may be roomed-in with mother in an isolation room. The mother-baby dyad must be isolated from other COVID-19 cases.

- Direct breastfeeding can be given. Mother should wash hands frequently including before breastfeeding and wear mask. If needed due to neonatal condition, expressed breast milk may also be fed.
- If safe, early discharge to home followed by telephonic follow-up or home visit by a designated healthcare worker may be considered.

Recommendation 10

- Symptomatic neonates born to a mother with suspected or proven COVID-19 infection should be managed in separate isolation NICU/SNCU.
- This area should be away from the usual NICU/SNCU in a segregated area which is not frequented by other personnel. The access to isolation NICU/SNCU should be through dedicated lift or guarded stairs.
- Ideally, the isolation should be in single rooms. In case enough single rooms are not available, closed incubators (preferred) or radiant warmers can be placed in a common isolation NICU/SNCU for neonates. The neonatal beds should be at a distance of at least 1 meter from one another. Suspected COVID-19 cases and confirmed COVID-19 cases should ideally be managed in separate isolations. If it is not feasible to have separate facilities and the neonates with suspected and confirmed infection are in a single isolation facility, they should be segregated by leaving enough space between the two cohorts.
- The isolation ward should have a separate double door entry with changing room and nursing station.
- Negative air borne isolation rooms are preferred for patients requiring aerosolization procedures (respiratory support, suction, nebulization). If not available, negative pressure could also be created by 2-4 exhaust fans driving air out of the room.
- Isolation rooms should have adequate ventilation. If room is air-conditioned, ensure 12 air changes/hour and filtering of exhaust air. These areas should not be a part of the central air-conditioning.
- The doctors, nursing and other support staff working in these isolation rooms should be separate from the ones who are working in regular NICU/SNCU. The staff should be provided with adequate supplies of PPE. The staff also needs to be trained for safe use and disposal of PPE.
- If the facilities of isolation intensive care are not available in the hospital where symptomatic or sick newborn is born or referred with COVID 19 infections, the newborn should be immediately shifted to State designated closest hospital where such facilities are available. Complete safety and PPE policies and precautions must be followed during transport.

Recommendation 11

- Respiratory support for neonates with suspected/proven COVID-19 infection is guided by usual principles of lung protective strategy recommended for newborns.
- Non-invasive ventilation is generally the preferred mode of respiratory support in neonates. Continuous positive airway pressure (CPAP) should be used with minimal required flow. However, due to high potential for aerosol generation, non-invasive positive pressure ventilation (NIPPV) and High Flow Nasal cannulas (HFNC) should be avoided.
- Healthcare providers should practice contact and droplet isolation and wear N95 mask while providing care in the area where neonates with suspected/proven COVID-19 infection are being provided respiratory support.
- The area providing respiratory support should be a negative air pressure area.

Recommendation 12

- At present, specific anti-COVID-19 treatment - antivirals or chloroquine/hydroxychloroquine - is NOT recommended in symptomatic or asymptomatic neonates with confirmed or suspected COVID-19. (Weak recommendation, based on consensus among experts in the absence of evidence for any beneficial effect or harm with the use of any of the options available)
- Use of adjunctive therapy such as systemic corticosteroids and intravenous gamma globulin is NOT recommended in symptomatic neonates with confirmed or suspected COVID-19. (Weak recommendation, based on consensus among experts in the absence of evidence for any beneficial effect or harm with the use of any of the options available)

Prevention and Infection Control**Recommendation 13**

Disinfection of Surfaces in the childbirth and neonatal care areas for patients with suspected or confirmed COVID-19 infection are not different from those for usual Labor room/OT/NICU/SNCU areas and include the following:

- Wear personal protective equipment before disinfecting
- If equipment or surface is visibly soiled first clean with soap and water solution or soaked cloth as appropriate before applying the disinfectant
- 0.5% sodium hypochlorite (equivalent to 5000 ppm) can be used to disinfect large surfaces like floors and walls at least once per shift and for cleaning after a patient is transferred out of the area.
- 70% ethyl alcohol can be used to disinfect small areas between use, such as reusable dedicated equipment.
- Hydrogen peroxide (dilute 100 ml of H₂O₂ 10% v/v solution with 900 ml of distilled water) can be used for surface cleaning of incubators, open care systems, infusion pumps, weighing scales,

standby equipment-ventilators, monitors, phototherapy units, and shelves. Use H₂O₂ only when equipment is not being used for the patient. Contact period of 1 hour is needed for efficacy of H₂O₂.

Recommendation 14

Minimal composition of a set of PPE for the management of suspected or confirmed cases of COVID-19 infection is provided in **Box II**.

Recommendation 15

- Follow routine biomedical waste disposal handling, segregation, transport and final disposal guidelines as prescribed by the Government of India.

Diagnosis

Recommendation 16

Guidelines on testing of neonates for COVID-19 are provided in **Box III**.

General Questions

Recommendation 17

- Parents and families of the COVID-19 exposed, suspected and infected mothers and neonates should receive informed healthcare. They should be aware of and understand the isolation, monitoring, diagnostic and treatment plans of the mothers/babies and be given a periodic update about the health condition.
- Visitors to both routine and COVID-19 specific childbirth/neonatal care areas should be screened for symptoms of COVID-19 infection.
- Persons (including parents) with suspected or confirmed COVID-19 infection should not be allowed entry in the childbirth/neonatal care area where care to parturient women/sick neonates is being provided.
- For neonates roomed in with mother having suspect/confirmed COVID-19 infection, one healthy family member following contact and droplet precautions should be allowed to stay with her to assist in baby care activities.

Recommendation 18

- Stable neonates exposed to COVID-19 and being roomed-in with their mothers may be discharged at time of mothers' discharge. (*Weak recommendation, based on consensus among experts based on the incubation period of SARS-CoV-2 infection in adults and older children*)
- Stable neonates in whom rooming-in is not possible because of the sickness in the mother and are being cared by a trained family member may be discharged from the facility by 24-48 hours of age. (*Weak recommendation, based on consensus among experts in the absence of evidence for any beneficial effect or harm with early discharge following exposure to COVID-19*)

Remarks

- Early discharge to home may be followed by a telephonic follow-up or home visit by a designated healthcare worker.
- Mothers and family members should be counselled regarding the danger signs and advised to report back to the facility if the neonate develops any of the danger signs.
- If the neonate develops any danger signs or becomes unwell during home isolation, he/she should be taken to a designated hospital facility for assessment as well as COVID-19 testing (if indicated).
- Mothers and family members should perform hand hygiene frequently including before and after touching and feeding the baby.
- Mothers should practice respiratory hygiene and wear a mask while breastfeeding and providing other care to the baby; they should routinely clean and disinfect all the surfaces.

Recommendation 19

- Healthcare professional working in any childbirth or neonatal area should report to their supervisor if they have respiratory or other symptoms suggestive of COVID-19 infection. Such healthcare professional should not be put on clinical duty and should be replaced by a healthy healthcare professional to maintain appropriate patient-provider ratio.
- Healthcare professional directly involved in the care of patients with suspect/proven COVID-19 infection may consider taking hydroxychloroquine (HCQ) prophylaxis as advised by Government of India, on medical prescription. However, this advisory is based on low-quality evidence and may change in near future.

Recommendation 20

- Follow routine immunization policy in healthy neonates born to mothers with suspected/proven COVID-19 infection.
- In neonates with suspected/proven infection, vaccination should be completed before discharge from the hospital as per existing policy.

Disclaimer: The guidelines in this document are based on limited evidence as available now. As new evidence accumulates, some of the recommendations may change. Users should use these guidelines in accordance with the latest government regulations and ICMR advisories.

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Box I Short-listed clinical Practice Questions Addressed in the Guidelines*Pregnant women with travel history, clinical suspicion or confirmed infection*

1. What should be the care of pregnant women with history of travel to designated countries or areas, or with exposure to a confirmed/suspected case of COVID-19?
2. Which pregnant women need testing for COVID-19?
3. Where in a healthcare facility should a pregnant woman with suspected or active COVID-19 infection deliver?
4. What infection control measures should be taken in triage, labor and delivery of a pregnant woman with active or suspected COVID-19 infection?
5. What should be the method of labor induction and mode of delivery in pregnant women with active or suspected COVID-19 infection?
6. What should be the specific care of pregnant women with active COVID-19 infection?

Neonatal Care

7. What precautions should the neonatal resuscitation team take when attending the delivery of a woman with suspected or confirmed COVID-19 infection?
8. What should be the feeding policy for stable neonates born to COVID-19 mothers?
9. Is it necessary to separate the mother and baby if mother is suspected or confirmed to be COVID-19 positive?
10. Should symptomatic neonates needing intensive or special care be nursed in common room NICU/SNCU or isolation facility?
11. What are the special precautions to be taken while providing respiratory support to neonates exposed to COVID-19 infection?
12. In symptomatic neonates, what is the role of specific treatment in case of perinatal exposure and in case of confirmed infection with COVID-19?

Prevention and Infection Control

13. What should be the specific disinfection practices in NICU /SNCU?
14. When should Personal protective equipment (donning and doffing) be used?
15. What should be the biomedical waste disposal protocol while managing a suspected or confirmed case of COVID-19?

Diagnosis

16. What should be the testing protocol for neonates born to mothers with suspected or confirmed COVID-19?

General questions

17. What should be the visitation policy and preventive measures for visitors during the COVID-19 outbreak?
18. What should be the discharge policy of neonates born to suspected or confirmed COVID-19 mothers?
19. What should be the occupational health policy specific to COVID-19 pandemic?
20. What should be the immunization policy for neonates born to suspected or COVID-19 positive women?

<p>Box II Desired Protection and Suggested Personal Protection Equipment for the management of Suspected/Confirmed patient of COVID-19</p>

<p><i>Respiratory protection</i></p>

- | |
|---|
| <ul style="list-style-type: none"> • Triple layered surgical mask • N95 facemasks are needed when performing an aerosol-generating procedure or in an area where neonates are being provided respiratory support by CPAP device/ventilator. |
|---|

<p><i>Eye protection</i></p>

<p>Goggles(will not be usable by those using vision glasses) or face shield</p>
--

<p><i>Body protection</i></p>

<p>Long-sleeved water-resistant complete gown including head and shoe cover. A single piece head to toe water resistant body cover will be ideal for attending resuscitation in delivery room or OT</p>

<p><i>Hand protection</i></p>

<p>Well-fitting Gloves</p>

Box III Guidelines for Testing of Neonates for COVID-19
<p><i>Which neonates?</i></p> <ul style="list-style-type: none"> • Neonates born to mothers with COVID-19 infection within 14 d of delivery or up to 28 d after birth • Symptomatic neonates exposed to close contacts with COVID-19 infection
<p><i>When?</i></p> <ul style="list-style-type: none"> • If symptomatic, specimens should be collected as soon as possible • If asymptomatic and roomed-in, test only if and when mother's test comes positive. <p>If mother is COVID-19 positive and baby's initial sample is negative, another sample should be repeated after 48 hours.</p>
<p><i>What sample?</i></p> <p>Not mechanically ventilated: Upper respiratory nasopharyngeal swab (NP). Collection of oropharyngeal swabs (OP) is a lower priority and if collected should be combined in the same tube as the NP.</p> <p>Mechanically ventilated: Tracheal aspirate sample should be collected and tested as a lower respiratory tract specimen</p>
<p><i>How to collect?</i></p> <p><i>Upper nasopharyngeal swab</i></p> <ul style="list-style-type: none"> • Use only synthetic fiber swabs with plastic shafts. Do not use calcium alginate swabs or swabs with wooden shafts, as they may contain substances that inactivate some viruses and inhibit PCR testing. • Insert a swab into nostril parallel to the palate. Swab should reach depth equal to distance from nostrils to outer opening of the ear. Leave swab in place for several seconds to absorb secretions. Slowly remove swab while rotating it. • Place swabs immediately into sterile tubes containing 2-3 mL of viral transport media. <p><i>Oropharyngeal swab (e.g., throat swab)</i> Swab the posterior pharynx, avoiding the tongue.</p> <p><i>Nasopharyngeal wash/aspirate or nasal aspirate</i> Collect 2-3 mL into a sterile, leak-proof, screw-cap sputum collection cup or sterile dry container.</p> <p><i>Other samples</i> Currently not advised; stool, urine and blood specimens, since the isolation is less reliable than from respiratory specimens. Do not take these specimens for testing (based on current advisory recommendations)</p>
<p><i>What PPE is needed for sample collection?</i></p> <p>Clinicians should wear appropriate personal protective equipment during sampling.</p> <p><i>Nasopharyngeal swab</i></p> <ul style="list-style-type: none"> • Hand hygiene • Disposable single use glove • Disposable plastic apron • Surgical facemask • Eye protection (surgical mask with integrated visor or full-face shield or visor or goggles/safety spectacles) <p>For any sampling from lower respiratory tract in intubated neonates a full set of PPE is a must</p> <ul style="list-style-type: none"> • Hand hygiene • disposable single use glove • Long sleeved disposable gown • N95 mask or another respirator mask • Eye protection
<p><i>Labelling the sample</i></p>

Label each specimen container with the patient's name, hospital ID number, specimen type and the date the sample was collected. Handle the sample with precautions under biosafety level 3 (BSL-3) conditions until is rendered non-infectious by laboratory.

How to store?

Samples should be collected in viral transport media procured from microbiology laboratory and transported immediately in icepacks. One can use disposable thermocol cartons or plastic bags with ice cubes for in-house transport. If sending to another laboratory, store specimens at 2-8°C for up to 72 h after collection. Storage can be done in a refrigerator dedicated for this purpose. If a delay in testing or shipping is expected, store specimens at -70°C or below. This requires deep freezers.

How to send?

If transporting by shipping, the samples need to be packed as per instructions Guidance for sample Collection, Packaging and Transportation for Novel Coronavirus.

Where to send?

Authorized laboratories (See MOHFW website for latest list)

What test?

Reverse Transcriptase PCR is a rapid test for detecting COVID-19

Use of Personal Protective Equipment**Sequence of Donning**

Before wearing the PPE for managing a suspected or confirmed COVID-19 case, proper hand hygiene should be performed. The gown should be donned first. The mask or respirator should be put on next and properly adjusted to fit; remember to fit check the respirator. The goggles or face shield should be donned next and the gloves are donned last. Keep in mind, the combination of PPE used, and therefore the sequence for donning, will be determined by the precautions that need to be taken.

Steps in Removing PPE (Doffing)

Wearing the PPE correctly will protect the healthcare worker from contamination. After the patient has been examined or desired procedure is performed, the removal of the PPE is a critical and important step that needs to be carefully carried out in order to avoid self-contamination because the PPE could by now be contaminated.

1. The gloves are removed first because they are considered a heavily contaminated item. Use of alcohol-based hand disinfectant should be considered before removing the gloves. Dispose of the gloves in a biohazard bin.
2. After the removal of gloves, hand hygiene should be performed, and a new pair of gloves should be worn to further continue the doffing procedure. Using a new pair of gloves will prevent self-contamination. Unbuttoning of the backside of the gown, performed by an assistant. Removal of gown to be performed by grabbing the back side of the gown and pulling it away from the body. Single-use gowns can now be disposed of; reusable gowns have to be placed in a bag or container for disinfection
3. After the gown, the goggles should be removed and either disposed if they are single-use, or placed in a bag or container for disinfection. In order to remove the goggles, a finger should be placed under the textile elastic strap in the back of the head and the goggles taken off. Touching the front part of the goggles, which can be contaminated, should be avoided. If goggles with temples are used, they should be removed as per manufacturer's recommendations.
4. The respirator/ mask should be removed next. In order to remove the respirator/mask, a finger or thumb should be placed under the straps in the back and the respirator taken off. The respirator (or the surgical mask) should be disposed of after removal. It is important to avoid touching the respirator/mask with the gloves (except for the straps) during its removal.
5. The last PPE items that should be removed are the new set of gloves that were worn after disposal of the contaminated gloves. Use of alcohol-based solution should be considered before removing the gloves. The gloves should be removed Dispose of the gloves in a biohazard bin.
6. After glove removal, hand hygiene should be performed.

Annexure II**Guideline Development Group (Alphabetical)**

Chairperson: Praveen Kumar, Professor, Dept. of Pediatrics, PGIMER, Chandigarh

Deepak Chawla, *Professor, Dept. of Neonatology, GMCH Chandigarh*; Dinesh Chirala, *Director Intensive Care Services, Rainbow Children's hospital group*; Samir Dalwai (*National Joint Secretary IAP*), *Consultant Pediatrician, Nanavati and Hinduja Hospitals, Mumbai*; Ashok K Deorari (*President NNF*), *Head, Department of Pediatrics, AIIMS, New Delhi*; Atul Ganatra (*Vice-President FOGSI*), *Director, Dr. R J Ganatra's Nursing Home, Mumbai*; Alpesh Gandhi (*President FOGSI*), *Sr. Consultant Obstetrics & Gynecology, Arihant Women's hospital, Ahmedabad*; Nandkishor S Kabra, *Director NICU, Surya Hospital, Mumbai*; Pratima Mittal, *Professor, Dept. of Obstetrics & Gynecology, VMMC and SJH, New Delhi*; Bakul Jayant Parekh (*National President IAP*), *BPCH and tertiary care Center, Mumbai*; M Jeeva Sankar, *Dept. of Pediatrics, AIIMS, New Delhi*; Tanu Singhal, *Dept. of Pediatrics and Infectious Diseases, KDAHMRI, Mumbai*; Sindhu Sivanandan, *Dept. of Neonatology, JIPMER, Puducherry*; Parikshit Tank (*Joint Treasurer, FOGSI*), *Consultant Obstetrician and Gynecologist, Ashwini Maternity and Surgical Centre, Mumbai*.

Perinatal-Neonatal Management of COVID-19 Infection



Pregnant women with a history of overseas travel to designated countries or areas, or with exposure to a confirmed/suspected case of COVID-19 should be isolated by using the guidelines for non-pregnant adults.

In the absence of community spread, isolation at the designated facility and in the presence of community spread, isolation by home quarantine may be preferred.



The criteria for offering a laboratory test are the same for pregnant women and the non-pregnant population.

Pregnant women with active COVID-19 infection should be managed with supportive and specific therapy as recommended for non-pregnant adults.

Currently recommended management includes: - oxygen therapy/respiratory support, fluid therapy, antibiotics, shock management, and specific drugs in severe cases.

Options

- Hydroxychloroquine 200 mg thrice a day with meals x 10 days OR 400 mg twice a day on day 1 and 400 mg once a day x 4 days ± Azithromycin 500 mg twice a day x 7 days

Weak recommendation; Low quality evidence

- Lopinavir/ Ritonavir if any of the following criteria are met : hypoxia, hypotension, new onset organ dysfunction (one or more of Increase in creatinine by 50% from baseline, GFR reduction by >25% from baseline or urine output of <0.5 ml/kg for 6 hours), Reduction of GCS by 2 or more, or Any other organ dysfunction

➤ High Risk Groups:

- Age > 60 years
- Diabetes Mellitus, Renal Failure, Chronic Lung disease
- Immunocompromised persons

Dosage:

- Lopinavir/ Ritonavir (200 mg/ 50 mg) – 2 tablets twice daily Or Lopinavir 400mg/Ritonavir 100 mg – 5mL suspension twice daily
- Duration: 14 days or for 7 days after becoming asymptomatic

The choice of specific antiviral therapy is likely to change with rapidly emerging evidence and updated national guidance should be consulted.



- When providing healthcare to women in labor with confirmed or suspected COVID-19 infection, follow standard universal precautions to prevent contact with body fluids. In addition, use personal protective equipment (PPE) to prevent acquiring infection through respiratory droplets. The PPE should include masks such as the N95 masks and face protection by a face shield or at least goggles.**

- Reception and triage should be in the same room earmarked for admission in labor and delivery. Ideally, this should be a room with negative pressure (If not available, exhaust fans can be installed).
- Keep the room free from any unnecessary items which could act as infected fomites later.
- Restrict entry of visitors and staff into the room to only essentials.
- There should be facilities for health care providers to remove and safely discard PPE at the exit of the room in which the patient is being cared for.



- Separate delivery room and operation theatres are required for management of suspected or confirmed COVID-19 mothers. Both should have neonatal resuscitation corners located at least 2 m away from the delivery table. Resources required include space, equipment, supplies and trained healthcare providers for delivery, caesarean section and neonatal resuscitation.**

The standards and facilities required for infection control in these areas should be same as that for other adults with suspected or confirmed COVID-19 infection.



- Mode of delivery in pregnant women infected with COVID-19 should be guided by her obstetric assessment and her physiological stability (cardiorespiratory status and oxygenation). **COVID-19 infection itself is not an indication for induction of labor or operative delivery.**

- Continuous electronic fetal monitoring should be done during labor. If facilities for continuous electronic fetal monitoring are not available, manual monitoring by frequent auscultation of fetal heart rate should be done during the labor as indicated for a high-risk delivery.
- Adequate equipment and trained healthcare providers should be available for intrapartum monitoring and obstetric interventions as indicated in the separate childbirth facilities for infected pregnant women.
- Oxygenation status of women during labor should be monitored by a pulse oximeter and oxygen therapy should be titrated to maintain oxygen saturation of more than 94%.

Recommendations for neonatal resuscitation:

- **If possible, resuscitation of neonate may be done in a physically separate but inter-connected adjacent room earmarked for this purpose. If not feasible, the resuscitation warmer should be physically separated from the mother's delivery area by a distance of at least 2 meters.**
- **Minimum number of personnel should attend** (one in low-risk cases and two in high-risk cases where extensive resuscitation may be anticipated) **and wear a full set of personal protective equipment including N95 mask.**
- **Mother should perform hand hygiene and wear triple layer mask.**
- The umbilical cord should be clamped promptly and skin-to-skin contact avoided.
- Delivery team member should bring over the neonate to the resuscitation area for assessment by the neonatal team.
- **Follow standard NRP guidelines. If positive-pressure ventilation is needed, self-inflating bag and mask may be preferred over T-piece resuscitator**



- **Stable neonates exposed to COVID-19 infection from mothers or other relatives should be roomed-in with their mothers and be exclusively breastfed.**
- **If rooming-in is not possible because of the sickness in the neonate or the mother, the neonate should be fed expressed breast milk (EBM) of the mother by a nurse or family member who has not been in contact with the mother or other suspected/proven case**

**Scenario 1: If resources for isolation of normal, suspected to be infected and infected mothers can be made available AND there is no evidence of community spread**

1. **After immediate cord clamping, the neonate should be isolated from the mother.**
2. **During isolation, healthy neonates should preferably be cared for by a nurse or family member not in contact with mother or other suspected/proven case.** Such care can be provided in an isolation ward taking care that persons with suspected/proven infection are not allowed in the area. If safe, while mother is in isolation early discharge to home with healthy family member followed by telephonic follow-up or home visit by a designated nurse may be considered.
3. **Mother can express milk after washing hands and breasts and while wearing mask. This expressed milk can be fed to her own baby without pasteurization.**
4. Mother and baby can be roomed-in once mother has been tested and declared to be clear of infection.
5. To facilitate early rooming-in, viral testing in mothers with suspected infection should be conducted and reported on priority.
6. If mother cannot be discharged and it is considered safe, early discharge to home with healthy family member followed by telephonic follow-up or home visit by a designated healthcare worker can be considered.

**Scenario 2: Resources for isolation of normal, suspected to be infected and infected mothers not available OR healthcare facilities are overwhelmed because of large number of COVID-19 infections OR evidence of community spread is present**

1. **Stable neonate may be roomed-in with mother. The mother-baby dyad must be isolated from other suspected and infected cases and healthy uninfected mothers and neonates.**
2. **Direct breastfeeding can be given. Mother should wash hands frequently including before breastfeeding and wear mask. If needed due to neonatal condition, expressed breast milk may also be fed.**
3. If safe, early discharge to home followed by telephonic follow-up or home visit by a designated healthcare worker may be considered.

- **Symptomatic neonates born to a mother with suspected or proven COVID-19 infection should be managed in separate isolation NICU/SNCU.**
- This area should be away from the usual NICU/SNCU in a segregated area which is not frequented by other personnel. The access to isolation NICU/SNCU should be through dedicated lift or guarded stairs.
- Ideally, the isolation should be in single rooms. If not available, closed incubators (preferred) or radiant warmers can be placed in a common isolation NICU/SNCU. The neonatal beds should be at a distance of at least 1 meter from one another. Suspected COVID-19 cases and confirmed COVID-19 cases should ideally be managed in separate isolations. If it is not feasible to have separate facilities and the neonates with suspected and confirmed infection are in a single isolation facility, they should be segregated by leaving enough space between the two cohorts.
- Negative air borne isolation rooms are preferred for patients requiring aerosolization procedures (respiratory support, suction, nebulization). If not available, negative pressure could also be created by 2-4 exhaust fans driving air out of the room.



- **Respiratory support for neonates with suspected/proven COVID-19 infection is guided by usual principles of lung protective strategy recommended for neonates.**
- CPAP should be used with minimal required flow. However, due to high potential for aerosol generation, NIPPV and High Flow Nasal cannulas should preferably be avoided.
- Healthcare providers should practice contact and droplet isolation and wear N95 mask while providing care in the area where neonates with suspected/proven COVID-19 infection are being provided respiratory support.
- The area providing respiratory support should be a negative air pressure area.



- **At present, specific anti-COVID-19 treatment - antivirals or chloroquine/hydroxychloroquine – are NOT recommended in symptomatic or asymptomatic neonates with confirmed or suspected COVID-19.**
- **Use of adjunctive therapy such as systemic corticosteroids and intravenous gamma globulin is NOT recommended in symptomatic neonates with confirmed or suspected COVID-19**



Disinfection of Surfaces in the childbirth and neonatal care areas for patients with suspected or confirmed COVID-19 infection are not different from those for usual Labor room/OT/NICU/SNCU areas and include the following:



- Wear personal protective equipment before disinfecting.
- If equipment or surface is visibly soiled first clean with soap and water solution or soaked cloth as appropriate before applying the disinfectant.
- 0.5% sodium hypochlorite (equivalent to 5000 ppm) can be used to disinfect large surfaces like floors and walls at least once per shift and for cleaning after a patient is transferred out of the area.
- 70% ethyl alcohol can be used to disinfect small areas between uses, such as reusable dedicated equipment.
- Hydrogen peroxide (dilute 100 ml of H₂O₂ 10% v/v solution with 900 ml of distilled water) can be used for surface cleaning of incubators, open care systems, infusion pumps, weighing scales, standby equipment-ventilators, monitors, phototherapy units, and shelves. Use H₂O₂ only when equipment is not being used for the patient. Contact period of 1 hour is needed for efficacy of H₂O₂.

Minimal composition of a set of PPE for the management of suspected or confirmed cases of COVID-19



Protection	Suggested PPE
Respiratory protections	Triple layered surgical mask N95 facemasks are needed when performing an aerosol-generating procedure or in an area where neonates are being provided respiratory support by CPAP device/ventilator.
Eye protection	Goggles (not by those using prescription glasses or face shield)
Body protection	Long-sleeved water-resistant complete gown including head and shoe cover. A single piece head to toe water resistant body cover will be ideal for attending deliveries
Hand protection	Gloves



- **Follow routine biomedical waste disposal handling, segregation, transport and final disposal guidelines as prescribed by the Government of India.**



- **Parents and families of the COVID-19 exposed, suspected and infected mothers and neonates should receive informed healthcare. They should be aware of and understand the isolation, monitoring, diagnostic and treatment plans of the mothers/babies and be given a periodic update about the health condition.**
- Visitors to both routine and COVID-19 specific childbirth/neonatal care areas should be screened for symptoms of COVID-19 infection.
- Persons (including parents) with suspected or confirmed COVID-19 infection should not be allowed entry in the childbirth/neonatal care area where care to parturient women/sick neonates is being provided.
- For neonates roomed in with mother with suspect/confirmed COVID-19 infection, one healthy family member following contact and droplet precautions should be allowed to stay with her to assist in baby care activities.



- **Stable neonates exposed to COVID19 and being roomed-in with their mothers may be discharged together at time of mothers' discharge.**
- **Stable neonates in whom rooming-in is not possible because of the sickness in the mother and are being cared by a trained family member may be discharged from the facility by 24-48 hours of age.**



- Healthcare professional working in any childbirth or neonatal area should report to their supervisor if they have respiratory or other symptoms suggestive of COVID-19 infection. Such healthcare professional should not be put on clinical duty and should be replaced by a healthy healthcare professional to maintain appropriate patient-provider ratio.
- **Healthcare professional directly involved in the care of patients with suspect/proven COVID-19 infection may consider taking hydroxychloroquine (HCQ) prophylaxis as advised by Government of India, on medical prescription. However, this advisory is based on low-quality evidence and may change in near future.**



- **Follow routine immunization policy in healthy neonates born to mothers with suspected/proven COVID-19 infection.**
- **In neonates with suspected/proven infection, vaccination should be completed before discharge from the hospital as per existing policy.**

Developed jointly by



The guidelines in this document are based on limited evidence as available now. As new evidence accumulates, some of the recommendations may change. Users should use these guidelines in accordance with the latest government regulations and ICMR advisories.

Last updated: 26-03-2020

Contact: secnnf@nnfi.org

Design by Dr. Deepak Chawla

Fig. 1 Info-graphic on Perinatal-neonatal Management of COVID-19.

**INDIAN COUNCIL OF MEDICAL RESEARCH
DEPARTMENT OF HEALTH RESEARCH**

Strategy for COVID19 testing in India (Version 5, dated 18/05/2020)

1. All symptomatic (ILI symptoms) individuals with history of international travel in the last 14 days.
2. All symptomatic (ILI symptoms) contacts of laboratory confirmed cases.
3. All symptomatic (ILI symptoms) health care workers / **frontline workers involved in containment and mitigation of COVID19.**
4. All patients of Severe Acute Respiratory Infection (SARI).
5. Asymptomatic direct and high-risk contacts of a confirmed case to be tested once **between day 5 and day 10 of coming into contact.**
6. All symptomatic ILI within hotspots/containment zones.
7. **All hospitalised patients who develop ILI symptoms.**
8. **All symptomatic ILI among returnees and migrants within 7 days of illness.**
9. **No emergency procedure (including deliveries) should be delayed for lack of test. However, sample can be sent for testing if indicated as above (1-8), simultaneously.**

NB:

- *ILI case is defined as one with acute respiratory infection with fever $\geq 38^{\circ}\text{C}$ AND cough.*
- *SARI case is defined as one with acute respiratory infection with fever $\geq 38^{\circ}\text{C}$ AND cough AND requiring hospitalization.*
- *All testing in the above categories is recommended by real time RT-PCR test only.*
- **All changes incorporated in these guidelines as compared to the previous version have been indicated in bold.**

**Specimen Referral Form (SRF) ID information
for COVID-19 (SARS-CoV2), in RT-PCR app**

SRF ID

Patient Name _____

Phone number

Lab Name _____



भारतीय आयुर्विज्ञान अनुसंधान परिषद
स्वास्थ्य अनुसंधान विभाग, स्वास्थ्य और परिवार
कल्याण मंत्रालय, भारत सरकार

Indian Council of Medical Research
Department of Health Research, Ministry of Health
and Family Welfare, Government of India

Date: 25/06/2020

Total Operational (initiated independent testing) Laboratories reporting to ICMR:

Government laboratories : 737

Private laboratories : 279

- Real-Time RT PCR for COVID-19 : 560 (Govt: 359 + Private: 201)
- TrueNat Test for COVID-19 : 369 (Govt: 346 + Private: 23)
- CBNAAT Test for COVID-19 : 87 (Govt: 32 + Private: 55)

Total No. of Labs : 1016

*CSIR/DBT/DST/DAE/ICAR/DRDO Laboratories.

#Laboratories approved for both Real-Time RT-PCR and TrueNat/CBNAAT

\$Laboratories approved for both TrueNAT and CBNAAT

S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
1.	Andhra Pradesh (59) Govt: 53	RT-PCR	1. Sri Venkateswara Institute of Medical Sciences, Tirupati 2. Sri Venkateswara Medical College, Tirupati	1. Manipal Hospital, Tadepalli, Guntur 2. PathGene Health Care Pvt Ltd#2nd Floor, Srinivasapuram, Tiruchanoor Road, Opp LV kayanamandapam, Tirupathi

S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
	Private: 6		3. Rangaraya Medical College, Kakinada 4. #Sidhartha Medical College, Vijaywada 5. Govt. Medical College, Ananthpur 6. Guntur Medical College, Guntur 7. Rajiv Gandhi Institute of Medical Sciences, Kadapa 8. Andhra Medical College, Visakhapatnam 9. Govt. Kurnool Medical College, Kurnool 10. Govt. Medical College, Srikakulam 11. AIIMS, Mangalagiri	3. Apollo Health and Lifestyle Ltd, Vijayawada Diagnostics Lab, 40-5-6, Parmeshwara Complex, Tikkle Road, Vijayawada 4. Vijaya Diagnostic Centre Pvt. Ltd., Plot No: 43/198, Old Rainbow Hospital Lane, N R Peta, Kurnool 5. Maharaja Institute of Medical Sciences, Vizianagaram 6. Asram Medical College, Eluru
		TrueNat	12. Damien TB Research Centre, Nellore 13. SVRR Govt. General Hospital, Tirupati 14. Community Health Centre, Gadi Veedhi Saluru, Vizianagaram 15. Community Health Centre, Bhimavaram, West Godavari District 16. Community Health Centre, Patapatnam 17. Community Health Center, Nandyal, Banaganapalli, Kurnool 18. GSL Medical College & General Hospital, Rajahnagaram, East Godavari District 19. District Hospital, Madnapalle, Chittoor District 20. District Hospital, APVVP, Pulivendula, Kadapa District	



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
			21. District Hospital, Rajahmundry, East Godavari District	
			22. District Hospital, Noonepalli, Nandyal, Kurnool	
			23. District Hospital, Anakapalli, Vishakhapatnam	
			24. District Hospital, Hindupur, Anantpur	
			25. District Hospital, Proddatur	
			26. District Hospital, Machlipatnam	
			27. District Hospital, Atmakur	
			28. District Hospital, Markapur	
			29. District Hospital, Tekkali	
			30. Area Hospital, Rampachodavaram, East Godavari District	
			31. Area Hospital, Palamaner, Chittoor	
			32. Area Hospital, Amalapuram, East Godavari District	
			33. Area Hospital, Adoni, Kurnool	
			34. Area Hospital, Chirala	
			35. Area Hospital, Kandukuru	
			36. Area Hospital, Narsipatnam	
			37. Area Hospital, Parvathipuram	
			38. Area Hospital, Tadepalligudem	
			39. Area Hospital, Kavali	
			40. Area Hospital, Tenali	



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
			41. Area Hospital, Narasaraopet, Guntur 42. Area Hospital, Macheria, Guntur 43. Area Hospital, Kadiri 44. Area Hospital, Gandhinagar, Nuzividu 45. ACSR Govt. Medical College, Nellore 46. Rural Development Trust, Bathalpalli 47. Govt. General Hospital, Guntur 48. Govt. General Hospital/ RIMS, Ongole 49. DST Lab Govt. Chest Hospital, Vishakhapatnam 50. District Hospital, Vizianagram 51. District Hospital, Chittoor 52. District Hospital, Eluru 53. SHAR Hospital, Sriharikota, Nellore	
2.	Arunachal Pradesh (4)	RT-PCR	54. Tomo Riba Institute of Health & Medical Sciences, Naharlagun	
		TrueNAT	55. Intermediate Reference Laboratory, Directorate of Health Sciences, Naharlagun 56. Bakin Pertin General Hospital and Training Centre, Pasighat, East Siang District 57. KDS District Hospital, Tawang	

S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
3.	Assam (13) Govt: 11 Private: 2	RT-PCR	58. Gauhati Medical College, Guwahati 59. ICMR-Regional Medical Research Center, Dibrugarh 60. Jorhat Medical College, Jorhat 61. Silchar Medical College, Silchar 62. Fakkhruddin Ali Ahmed Medical College, Barpeta 63. Tezpur Medical College, Tezpur 64. Assam Medical College, Dibrugarh 65. *CSIR North East Institute of Science and Technology (NEIST), Jorhat 66. *Defence Research Laboratory, Tezpur 67. Diphu Medical College, Karbi Anglong	7. Ultracare Diagnostic Centre, Dept of Lab Services, Ashok Path, Survey, Beltola, Guwahati
		TrueNat		8. Molecular Testing LAB, GNRC Lab services, GNRC Hospitals, Dispur
4.	Bihar (44) Govt: 41 Private: 3	RT-PCR	68. ICMR-Rajendra Memorial Research Institute of Medical Sciences, Patna 69. Indira Gandhi Institute Medical Sciences, Patna 70. Patna Medical College, Patna 71. Darbhanga Medical College, Darbhanga 72. SKMCH, Muzaffarpur 73. All India Institute of Medical Sciences, Patna	9. Narayan Medical College, Sasaram 10. #Sara Pathlab Pvt. Ltd, 55B, Sector O, Sachiwalaya Colony, Kankarbagh, Patna



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
		TrueNAT	74. Anugrah Narayan Magadh Medical College (ANMMC), Gaya 75. Vardhman Institute of Medical Sciences, Pawapuri, Nalanda 76. District Hospital, Siwan 77. District Hospital, Rohtas 78. JanNayak Karpoori Thakur Medical College and Hospital, Madhepura 79. Govt. Medical College, Bettiah 80. District Hospital, Purnia 81. District Hospital, Katihar 82. District Hospital, East Champaran 83. District Hospital, Madhubani 84. District Hospital, Buxar 85. District Hospital, Khagaria 86. District Hospital, Begusarai 87. District Hospital, Banka, Bihar 88. District Hospital, Gopalganj, Bihar 89. District Hospital, Aurangabad, Bihar 90. District Hospital, Jehanabad, Bihar 91. District Hospital, Nawada, Bihar 92. District Hospital, Arwal 93. District Hospital, Saharsa, Bihar 94. District Hospital, Supaul, Bihar 95. District Hospital, Kaimur, Bihar	



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
			96. District Hospital, Saran, Bihar 97. District Hospital, Bhojpur, Bihar 98. District Hospital, Kishanganj, Bihar 99. District Hospital, Jamui, Bihar 100. District Hospital, Lakhisarai, Bihar 101. District Hospital, Munger 102. District Hospital, Sheikhpura 103. District Hospital, Vaishali 104. District Hospital, Araria 105. District Hospital, Samastipur 106. District Hospital, Sheohar 107. District Hospital, Sitamarhi	
		CB-NAAT	108. Jawaharlal Nehru Medical College, Bhagalpur	11. \$ Sen Diagnostics Pvt. Ltd., Budh Marg, Patna
5.	Chandigarh (3)	RT-PCR	109. Post Graduate Institute of Medical Education & Research, Chandigarh 110. Govt. Medical College, Chandigarh 111. *Institute of Microbial Technology, Chandigarh	
6.	Chhattisgarh (6) Govt: 5 Private: 1	RT-PCR	112. All India Institute of Medical Sciences, Raipur 113. Late Baliram Kashyap M Govt. Medical College, Jagdalpur	



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
			114. JNM Medical College, Raipur 115. Late Shri Lakhi Ram Agrawal Memorial Govt. Medical College, Raigarh	
		TrueNat	116. Intermediate Reference Laboratory, Lalpur, Raipur	12. Dept of Lab services, Balco Medical Centre (Vedanta Medical Research Foundation), Sector-36, Naya Raipur, PO: Uparwara, Raipur
7.	Delhi (48) Govt: 20 Private: 28	RT-PCR	117. All India Institute Medical Sciences 118. Lady Hardinge Medical College 119. National Centre for Disease Control 120. Ram Manohar Lohia Hospital 121. Institute of Liver & Biliary Sciences 122. Army Hospital Research & Referral 123. Maulana Azad Medical College 124. Vardhman Mahavir Medical College & Safdarjung Hospital 125. University College of Medical Sciences, New Delhi 126. Army Base Hospital, New Delhi 127. *IGIB, CSIR, New Delhi 128. Rajiv Gandhi Super Speciality Hospital, Taharpur, Delhi 129. Vallabhbhai Patel Chest Institute (VPCI), Delhi	13. Lal Path Labs, Block -E, Sector 18, Rohini, Delhi 14. #Dr Dangs Lab, C-2/1, Safadarjung Development Area, New-Delhi 15. Laboratory Services, Indraprastha Apollo Hospitals, Sarita Vihar, New Delhi 16. Max Lab, Max Super Speciality Hospital, Saket, New-Delhi 17. Sir Ganga Ram Hospital Clinical Lab Services, Sir Ganga Ram Hospital, Delhi 18. Oncquest Labs Ltd, 3-Factory Road, New-Delhi 19. Prognosis Laboratories, 515-16, Sector 19, Dwarka 20. City X-Ray & Scan Clinic Pvt Ltd, 4B/18, Tilak Nagar, New-Delhi 21. Lifeline Laboratory, H-11, Green Park Extension, New-Delhi



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
			130. *Defence Institute of Physiology & Allied Sciences (DIPAS), DRDO, Delhi 131. Institute of Nuclear Medicine & Allied Sciences (INMAS-DRDO), New Delhi	22. Dept of Lab Services, Dr. B.L. Kapur Memorial Hospital, 5, Pusa Road, New-Delhi 23. Dept of Laboratory Services, Action Cancer Hospital, A-4, Paschim Vihar (East), New-Delhi 24. Star Imaging & Path Lab Pvt Ltd, 4B/4, Tilak Nagar, New Delhi 25. Genestrings Diagnostic Centre Pvt Ltd, 3, MMTC, Geetanjali Enclave, New Delhi 26. Sterling Accuris Diagnostics, A division of Sterling Accuris Wellness Pvt Ltd, C-65, Block C, Phase I, Okhla, New Delhi 27. CRL Diagnostics Pvt Ltd, Plot No 10, Avtar Enclave, Opposite Metro Pillar 227, Paschim Vihar, Rohtak Road, New Delhi 28. Dept of Lab Medicine, HCMCT, Manipal Hospital, Main Road, Sector 6, Dwarka, New Delhi 29. Gen-X Diagnostics, 2/6, Sarvapriya Vihar, New Delhi 30. Noble Diagnostic Centre, WZ-409C, Janak Park, Hari Nagar, Opposite DDU Hospital, New Delhi



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
				31. Mahajan Imaging Pvt Ltd, E-19, Defence Colony, New-Delhi 32. #Dept of Lab Sciences, Rajiv Gandhi Cancer Institute & Research Centre, Sector 5, Rohini, New-Delhi 33. Metropolis Healthcare Ltd. E21, Block-B1, Mohan Cooperative Industrial Estate, South East Delhi 34. Gagan Pathology & Imaging Pvt Ltd F-26/21-22, Near Ayodhya Chowk, Sector 7, Rohini, Delhi 35. Saral Diagnostics, 2&3, Shakti Vihar, Pitampura
		TrueNat	132. ESIC Hospital, Basaidarapur 133. State TB Training and Demonstration Laboratory, New Delhi	36. Aakash Path Lab, Aakash Healthcare & Super speciality Hospital, Road No 201, Sector 3, Dwarka, New Delhi 37. Ganesh Diagnostic And Imaging Centre Pvt Limited 109 Pkt A-1 Sector 8 Rohini, Delhi
		CB NAAT	134. State TB Training and Demonstration Centre, Jawaharlal Nehru Marg, Delhi Gate	38. Dr P Bhasin Path Labs (P) Ltd, S 13 Greater Kailash Part 1, New Delhi 39. Venkateshwar Hospital, sector- 18A, Dwarka, New Delhi- 110075

S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
			135. Department of Microbiology, National Institute of TB and Respiratory Diseases (NITRD), New Delhi 136. Northern Railway Central Hospital, New Delhi	40. HAHC & HIMSR, Jamia Hamdard Campus, Guru Ravidas Marg, BLock D, Hamdard Nagar, New Delhi
8.	Gujarat (53) Govt: 34 Private: 19	RT-PCR	137. BJ Medical College, Ahmedabad 138. MP Shah Govt Medical College, Jamnagar 139. Govt. Medical College, Surat 140. Govt. Medical College, Bhavnagar 141. Govt. Medical College, Vadodara 142. Govt. Medical College, Rajkot 143. NHL Medical College, Ahmedabad 144. GMERS Medical College, Ahmedabad 145. GMERS Medical College, Gandhinagar 146. GMERS Medical College, Valsad 147. ICMR-National Institute of Occupational Health, Ahmedabad 148. Gujarat Cancer & Research Institute, Ahmedabad 149. Surat Municipal Institute of Medical Education & Research (SMIMER), Surat 150. GMERS Medical College and Hospital, Dharpur-Patan, Gujarat 151. Gujarat Adani Institute of Medical Sciences, Bhuj	41. Unipath Specialty laboratory limited, 102, Sanoma Plaza, Opposite Parimal Garden, Besides JMC House, Ellisbridge, Ahmedabad 42. Supratech Micropath Laboratory & Research Institute Pvt Ltd, Kedar, Ahmedabad 43. SN GeneLab Pvt Ltd, President Plaza -A, Near Mahavir Hospital, Nanpura, Surat 44. Pangenomics International Pvt Ltd, Ellis Bridge, Ahmedabad 45. #Dept of Lab Medicine, Zydus Hospitals & Healthcare Research Pvt Ltd, Zydus Hospital Road, Hebatpur, Off S.G. Highway, Thaltej, Ahmedabad 46. #Toprani Advanced Lab Systems, Suflam, 10, Haribhakti Colony, Race Course, Vadodra 47. Dept of Lab Medicine, Apollo Hospitals International Ltd, 1, Bhat, GIDC Estate, Ahmedabad 48. Divine lab, B 201/202, Mangalkirti Apartment, Fatehgunj, Vadodra



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
			152. Gujarat Biotechnology Research Center, Gandhinagar 153. Gujarat Forensic Sciences University, Gandhinagar 154. GMERS Medical College, Gotri, Vadodara 155. GMERS Medical College, Himmatnagar 156. Dr. H.L. Trivedi Institute of Transplantation Services, Ahmedabad 157. #GMERS Medical College, Junagadh 158. GMERS Medical College, Vadnagar	49. Green Cross Genetics Lab Pvt Ltd, 104, Sears Towers, Ahmedabad 50. #Sunflower Laboratory, Helmet Circle, Rudra Arcade, Drive In Road, Manav Mandir, MemNagar, Ahmedabad 51. Parul Institute of Medical Sciences & Research (PIMSR), Vadodara 52. Dhiraj Hospital, Smt. B.K. Shah Medical Institute & Research Centre, Vadodara 53. Gujarat Pathology Lab & Diagnostic Centre, 101/102, Span Trade Centre, Paldi, Ahmedabad 54. Scientific Diagnostic Centre Pvt.Ltd, 3,Venunand Raw House, Gulbai Tekra Road, Ellisebridge, Ahmedabad 55. #Salvus Bioresearch Solutions, 2nd Floor, Earth Retail, Science City Circle, S.P. Ring Road, Ahmedabad
		TrueNat	159. Shantaba Medical College and General Hospital, Amreli 160. Banas Medical College, Palanpur 161. District Hospital, Navsari 162. District Hospital, Vyara 163. District Hospital, Porbandar 164. District Hospital, Jamkhambhaliya	



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
			165. District Hospital, Rajpipla 166. General Hospital, Ahwa 167. General Hospital, Veraval	
		CB NAAT	168. GCS Medical College and Hospital, Ahmedabad 169. AMC MET Medical College and Hospital, Ahmedabad	56. Dept of Lab Medicine, Bhailal Amin Gen Hospital, Alembic Road, Gorwa, Vadodra 57. Microcare Lab & TRC, 105, Manthan Point, Unapani Road, Surat 58. Speciality Microtech Laboratory, 121 Akshar Arcade, Navrangpura, Ahmedabad 59. Sterling Accuris Diagnostics, Sterling Hospital, Phase 2, 1st Floor, Race Course Circle (West), Vadodra 60. Care Institute of Medical sciences (CIMS hospital), Department of Microbiology, Opp shukan mall, Science city road, Ahmedabad
9.	Goa (5)	RT-PCR	170. #Goa Medical College, Goa	
		TrueNat	171. North District Hospital, Mapusa 172. Subdistrict Hospital, Ponda 173. South Goa District Hospital (Hospicio Hospital), Margao 174. Sub- District Hospital, Chicalim, Vasco Da Gama	
10.	Haryana (22)	RT-PCR	175. Pt. B.D. Sharma Post Graduate Inst. Of Med. Sciences, Rohtak 176. Command Hospital, Chandimandir	61. Strand Life Sciences, A-17, Sector 34, Gurugram 62. SRL Limited, GP26, Sector 18, Gurugram



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
	Govt: 14 Private: 8		177. BPS Govt. Medical College, Sonipat 178. ESIC Hospital, Faridabad 179. Kalpana Chawla Govt. Medical College, Karnal 180. Govt. Civil Hospital, Panchkula 181. *ICAR-National Research Centre on Equines, Hisar 182. *Translational Health Science & Technology Institute, Faridabad 183. #SHKM, Govt. Medical College, Mewat 184. #District Civil Hospital, Ambala 185. Civil Hospital, Gurugram 186. #Maharaj Agrasen Medical College, Agroha, Hisar	63. Modern Diagnostic & Research Centre-Lab, 363-364/4, JAwarah Nagar. Gurgaon 64. Core Diagnostics Pvt Ltd, Udyog Vihar Phase-3, Gurgaon 65. MolQ Laboratory, Plot 28,29; Sector 18(P), Electronic city, Udyog Vihar, Phase IV, Gurgaon 66. Pathkind Diagnostics Pvt Ltd, Plot 55-56, Phase 4, Udyog Vihar, Sec 18, Gurgaon 67. Department of Pathology and Laboratory Medicine, Medanta-The Medicity, Sector 38, Gurgaon
		TrueNat	187. Civil Hospital, Sirsa	68. Apex Diagnostics - 12 Jacaranda Marg, Dlf City Phase - 2 , Gurgaon
		CB NAAT	188. IRL, Haryana Govt. Public Health Laboratory, Karnal	
11.	Himachal Pradesh (10)	RT-PCR	189. Indira Gandhi Medical College, Shimla 190. Dr. Rajendra Prasad Govt. Medical College, Tanda 191. Central Research Institute, Kasauli 192. Shri Lal Bahadur Shastri Govt. Medical College, Mandi	



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
			193. *CSIR Institute of Himalayan Bioresource Technology, Palampur 194. #Dr. Yashwant Singh Parmar Government Medical College, Nahan 195. #Pt. JLN Government Medical College and Hospital, Chamba	
		TrueNat	196. Zonal Hospital, Mandi 197. Dr. Radhakrishnan Government Medical College, Hamirpur 198. Regional Hospital, Una	
12.	Jammu & Kashmir (8)	RT-PCR	199. Govt. Medical College, Jammu 200. Command Hospital (NC) Udhampur 201. Sher-i-Kashmir Institute of Medical Sciences, Srinagar 202. Govt. Medical College, Srinagar 203. Sheri Kashmir Institute of Medical Science Medical College, Bemina, Srinagar 204. *CSIR Indian Institute of Integrative Medicine (IIIM), Jammu	
		CB NAAT	205. Intermediate Reference Laboratory, Chest Disease Hospital, Dalgate, Srinagar 206. 92 Base Hospital, Badami Bagh Cantonment, Srinagar	
13.	Jharkhand (31)	RT-PCR	207. MGM Medical College & Hospital, Jamshedpur	69. Tata Main Hospital (Dept of Pathology), Tata Steel, Bistupur, Jamshedpur



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
	Govt: 30 Private: 01		208. #Rajendra Institute of Medical Sciences, Ranchi 209. Patliputra Medical College & Hospital, Dhanbad 210. Itki Aarogyashala, Ranchi	
		TrueNat	211. District Hospital, Bokaro 212. District Hospital, Chatra 213. District Hospital, Deoghar 214. District Hospital, Dumka 215. District Hospital, Garhwa 216. District Hospital, Giridih 217. District Hospital, Godda 218. District Hospital, Hazaribag 219. District Hospital, Kodarma 220. District Hospital, Lathehar 221. District Hospital, Pakur 222. District Hospital, Palamu 223. District Hospital, Pashchimi Singhbhum 224. District Hospital, Ranchi 225. District Hospital, Sahibganj 226. District Hospital, Dhanbad 227. District Hospital, Gumla 228. District Hospital, Jamtara 229. District Hospital, Khunti 230. District Hospital, Lohardaga	



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
			231. District Hospital, Purbi Singhbhum 232. District Hospital, Ramgarh 233. District Hospital, Saraikela Kharsawan 234. District Hospital, Simdega 235. Central Hospital, CCL, Gandhinagar, Ranchi	
		CB NAAT	236. Military Hospital, Namkum, Ranchi	
14.	Karnataka (77) Govt: 44 Private: 33	RT-PCR	237. Hassan Inst. Of Med. Sciences, Hassan 238. Mysore Medical College & Research Institute, Mysore 239. Shivamogga Institute of Medical Sciences, Shivamogga 240. Command Hospital (Air Force), Bengaluru 241. Bangalore Medical College & Research Institute, Bengaluru 242. ICMR-National Institute of Virology, Bangalore Field Unit, Bengaluru 243. *Indian Institute of Science, Bengaluru (Department of Biochemistry, Centre for Infectious Disease Research) 244. Gulbarga Institute of Medical Sciences, Gulbarga 245. Vijaynagar Institute of Medical Sciences, Bellary	70. Neuberg Anand Reference Laboratory, Anand Tower, #54, Bowring Hospital Road, Bengaluru 71. Cancyte Technologies Pvt Ltd, Sri Shankara Research Centre, Bengaluru 72. Central Diagnostic Lab, Vydehi Institute of Medical Sciences and Research Centre, #82, E.P.I.P. Area, Whitefield, Bengaluru 73. Syngene International Limited, Biocon Park, SEZ, Bommasandra Industrial Area, Phase IV, Bommasandra-Jigani Link Road, Bengaluru 74. #Department of Lab Medicine, Narayana Hrudayalaya Ltd, 258/A, Bommasandra Industrial Area, Hosur Road, Bengaluru 75. Aster Clinical Lab LLP, No 24, Venkatappa Road, Tasker Town, Vasanthanagar, Bangalore 76. Microbiological Lab, 22-D 3, KIADB Industrial Area, 1st Phase, Kumbalagidu, Bengaluru



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
			246. National Institute of Mental Health and Neuro-Sciences, Bangalore	77. Yenepoya Medical College Hospital Lab, Nithyananda Nagar, Derlakatte, Mangaluru
			247. Wenlock District Hospital, Mangalore	78. Hybrinomics Life Science and diagnostics LLP, Site No 50, Maruthi Township, B. Hanumanthanagar, Bileshivale, Doddagubbi Post, Bengaluru
			248. Karnataka Institute of Medical Sciences, Hubli	79. Shamanur Shivashankarappa Institute of Medical Sciences and Research Centre (SSIMSRC), Davangere
			249. National Institute of Traditional Medicine, Belagavi	80. XCyton Diagnostics Pvt Ltd - Molecular Diagnostic Services, #449, 10th Cross, 4th phase, Peenya, Bengaluru
			250. Dharwad Institute of Mental Health & Neurosciences, Dharwad	81. St. Johns Medical College and Hospital, Bangalore
			251. Kidwai Memorial Institute of Oncology, Bengaluru	82. Kasturba Medical College Manipal
			252. *Instem, Bengaluru	83. Father Muller's Medical College, Mangalore
			253. Mandya Institute of Medical Sciences (MIMS), Mandya	84. JJM Medical College (JJMMC), Davangere
			254. Chamarajanagar Institute of Medical Sciences (CIMS), Chamarajanagar District	85. Manipal Hospital, Bangalore
			255. #Gadag Institute of Medical Sciences, Gadag	86. #Sakra World Hospital Lab Services, Devarabeesanahalli VArthur Hobli, Bengaluru
			256. Kodagu Institute of Medical Sciences (KOIMS), Kodagu District	87. Kasturba Medical College, Mangalore
			257. Government Virus Diagnostic Laboratory, Shimoga District	88. KS Hegde Medical Academy (KHEMA), Mangalore
			258. #Raichur Institute of Medical Sciences, Raichur	89. Narayana Nethralaya, Department of Molecular Diagnostics, Bangalore
			259. #Bidar Institute of Medical Sciences, Bidar	



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
			260. #Koppal Institute of Medical Sciences, Koppal 261. #Karwar Institute of Medical Sciences, Karwar 262. #Tumkur District Hospital, Tumkur 263. #Bowring Lady Curzon Medical College and Research Institute (BLCMRI), Bangalore 264. SNR District Hospital, Kolar 265. Chigateri District Hospital, Davangere District 266. Yadgir Institute of Medical Sciences, District Hospital, Yadgir 267. District Hospital, Haveri	90. #Lab Services, Apollo Hospitals, 154/11, Bannerghatta Road, Bengaluru 91. Kempegowda Institute of Medical Sciences, Bangalore 92. United Hospitals, Kalburgi 93. Medicluc Diagnostics, Bangalore 94. Sri Devaraj Urs Medical College, Kolar 95. JSS Medical College, Mysore
		TrueNAT	268. Public health Laboratory, Chikkaballapur District Hospital, Chikkaballapur 269. Public Health Laboratory, Chikmagalur District Hospital, Chikmagalur 270. Udupi District Hospital, Udupi 271. Yadgiri District Hospital, Yadgiri 272. Chitradurga District Hospital, Chitradurga 273. District Public Health Laboratory, Kolar District	



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
			274. District Public Health Laboratory, Chamarajanagar District 275. Bangalore Bruhat Mahanagara Palike (BBMP) Health Centre (Fever Clinic), Adugodi, Bangalore 276. District Public Health Laboratory, Ramanagara District 277. Jayadeva Institute of Cardiac Sciences, Bangalore	
		CB NAAT	278. Vijayapura District Hospital, Vijayapura 279. Belgaum Institute of Medical Sciences, Belgaum 280. Bagalkot District Hospital, Bagalkot	96. KLES Dr Prabhakar Kore Hospital & MRC Hi Tech Lab, NehruNagar, Belgaum, Belagavi 97. Dept of Pathology & Lab Medicine, Aster CMI Hospital, #43/2, NH 7, International Airport Rd, Sahakar Nagar, Bengaluru 98. Dept of Lab Medicine, Vikram Hospital Pvt Ltd, No 71/1, Millers Road, Bengaluru 99. Department of Laboratory Medicine and Pathology, Columbia Asia Referral Hospital, Yeshwantpur, #26/4, Brigade Gateway, Malleshwaram West, Bengaluru 100. SRL Limited at Fortis hospitals, 154/9, Bannerghatta Main Road, Bengaluru 101. Trident Diagnostics & Healthcare Pvt.Ltd, #313, 2nd main Jagajyothi Nagara, 80



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
				feet outer Ring Road, Kenchanapura Cross bus stop, Nagadevanahalli, Bengaluru
				102. NMR Diagnostics Pvt. Ltd, Maratha Mandal Building, P.B.Road, Dharwad
15.	Kerala (41) Govt: 25 Private: 16	RT PCR	281. National Institute of Virology, Field Unit, Allapuzha 282. Govt. Medical College, Thiruvananthapuram 283. Govt. Medical College, Kozhikode 284. Govt. Medical College, Thrissur 285. Rajiv Gandhi Center for Biotechnology, Thiruvananthapuram 286. Sree Chitra Tirunal Institute of Medical Sciences, Thiruvananthapuram 287. State Public Health Laboratory, Trivandrum 288. Inter University, Kottayam 289. Malabar Cancer Center, Thalassery 290. Central University of Kerala, Periyar, Kasaragod 291. Govt. Medical College, Ernakulam 292. Govt. Medical College, Manjeri 293. Govt. Medical College, Kottayam 294. Govt. Medical College, Kannur	103. DDRC SRL Diagnostics Pvt Ltd, Panampilly Nagar, Ernakulam 104. MIMS Lab Services, Govindapuram, Kozhikode 105. Lab Services of Amrita Institute of Medical Sciences & Research Centre, AIMS-Ponekkara, Kochi 106. Dane Diagnostics Pvt Ltd, 18/757 (1), RC Road, Palakkad 107. Medivision Scan & Diagnostic Research Centre Pvt Ltd, Sreekandath Road, Kochi 108. MVR Cancer Centre & Research Institute, CP 13/516 B, C, Vellalaserri NIT (via), Poolacode, Kozhikode 109. Aza Diagnostic Centre, Stadium Puthiyara Road, Kozhikode



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
			295. Indian Institute of Science Education and Research (IISER), Thiruvananthapuram 296. Government Medical College, Palakkad	
		TrueNat	297. Regional Public Health Laboratory, Pathanamthitta 298. Government Medical College Hospital, Kollam 299. Government TD Medical College, Alappuzha 300. District Public Health Laboratory, Wayanad 301. District TB Centre, Palakkad 302. INHS Sanjivani, Kochi 303. District Public Health Laboratory, Kollam 304. Government Medical College, Idukki	110. Department of Laboratory Medicine, Avitis Super Specialty Hospitals Private Limited, XX/882, Thrissur-Pollachi Main Road, Nemmara, Palakkad 111. Jubilee Mission Medical College & RI, Thrissur 112. Aswini Diagnostic Services, Ramnath Building, Jail Road, Kozhikode
		CB NAAT	305. Regional Cancer Centre, Thiruvananthapuram	113. Dept of Pathology and Lab Medicine, Aster Medcity, Aster DM Healthcare Ltd, Kutty Sahib Road, Kothad, Cochin 114. NIMS Medicity, Department of Laboratory Medicine, Aralumoodu, Neyyattinkara, Thiruvananthapuram 115. Rajagiri Hospital Laboratory Services, Rajagiri Hospital, Chunangamvely, Aluva 116. \$ Micro Health LABs, MPS Tower, Kozhikode



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
				117. \$Microbiology Section, Department Of Laboratory Medicine, Kerala Institute Of Medical Sciences, Anamukham, Anayara P.O. Thiruvananthapuram 118. \$ Believers Church Medical College Laboratory, St Thomas Nagar, Kuttapuzha P.O., Thiruvalla
16.	Maharashtra (106) Govt: 61 Private: 45	RT-PCR	306. ICMR-National Institute of Virology, Pune 307. Seth GS Medical College & KEM Hospital, Mumbai 308. Kasturba Hospital for Infectious Diseases, Mumbai 309. National Institute of Virology Field Unit, Mumbai 310. Armed Forces Medical College, Pune 311. BJ Medical College, Pune 312. Command Hospital (SC), Pune 313. Indira Gandhi Govt. Medical College, Nagpur 314. All India Institute of Medical Sciences, Nagpur 315. Govt. Medical College, Nagpur 316. Nagpur Veterinary College, MAFSU, Nagpur	119. Thyrocare Technologies Limited, D37/1, TTC MIDC, Turbhe, Navi Mumbai 120. Suburban Diagnostics (India) Pvt. Ltd., 306, 307/T, 3rd Floor, Sunshine Bld., Andheri (W), Mumbai 121. Metropolis Healthcare Ltd, Unit No. 409-416, 4th Floor, Commercial Building-1, Kohinoor Mall, Mumbai 122. Sir H.N. Reliance Foundation Hospital and Research Centre, Molecular Medicine, Reliance Life Sciences Pvt. Ltd., R-282, TTC Industrial Area, Rabale, Navi Mumbai 123. SRL Limited, Prime Square Building, Plot No 1, Gaiwadi Industrial Estate, SV Road, Goregaon, Mumbai 124. A.G. Diagnostics Pvt Ltd, Nayantara Building, Pune



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
			317. #Intermediate Reference Laboratory, Nagpur	125. Kokilaben Dhirubhai Ambani Hospital Laboratory, Four Bungalows, Mumbai
			318. Grant Medical College & Sir JJ Hospital, Mumbai	126. InfeXn Laboratories Private Limited, A/131, Therelek Compound, Road No 23, Wagle Industrial Estate, Thane (W)
			319. Govt. Medical College, Aurangabad	127. iGenetic Diagnostics Pvt Ltd, Krislon House, Andheri East, Mumbai
			320. V. M. Govt. Medical College, Solapur	128. Sahyadri Speciality Labs, Plot No 54, S.No. 89-90, Lokmanya Colony, Kothrud, Pune
			321. Haffkine Institute, Mumbai	129. Metropolis Healthcare Limited, Construction House, 796/189-B, Bhandarkar Institute Road, Pune
			322. Shree Bhausaheb Hire Govt. Medical College, Dhule	130. # SRL Diagnostics - Dr. Avinash Phadke (SRL Diagnostics Pvt Ltd), Mahalaxmi Engineering Estate, 2nd Floor, L.J. Cross Road No 1, KJ Khilnani High School, Mahim (West), Mumbai
			323. Govt. Medical College, Miraj	131. Department of Laboratory Medicine - P.D. Hinduja National Hospital and Medical Research Centre, Veer Savarkar Marg, Mahim, Mumbai
			324. Govt. Medical College, Akola	132. Vaidya Lab Thane, Unit of Millenium Special Lab Pvt Ltd, Odyssey Park, 2nd Floor, 201, Raghunath Nagar, Wagle Estate, Thane
			325. National Institute for Research on Reproductive Health, Mumbai	
			326. Rajiv Gandhi Medical College & CSM Hospital, Kalwa, Thane, Mumbai	
			327. ICMR-National AIDS Research Institute, Pune	
			328. Swami Ramanand Teerth Marathwada University, Nanded	
			329. Mahatma Gandhi Institute of Medical Sciences, Sevagram, Wardha	
			330. Vilasrao Deshmukh Govt. Institute of Medical Sciences, Latur	
			331. INHS Ashvini, Mumbai	



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
			332. *Tata Memorial Centre ACTREC, Mumbai	133. Genepath Diagnostics India Pvt Ltd, 4th Floor, Above Phadke Hospital, Pune
			333. *Tata Memorial Hospital, Mumbai	134. Daignostic Molecular Laboratory, Dept of Microbiology, Dr. Vasantrao Pawar Medical College Hospital & Research Centre, Vasantdada Nagar, Adgaon, Nashik
			334. *National Centre for Cell Sciences, Pune	
			335. *National Environmental Engineering Research Institute, Nagpur	135. Dept of Lab Medicine, Dr. Balabhai Nanavati Hospital, Swami Vivekananda Road, Mumbai
			336. Sant Gadge Baba Amravati University, Amravati	
			337. #RCSM Govt. Medical College, Kolhapur	136. Krsnaa Diagnostics Pvt Ltd, Lt. Jayabai Nanasaheb Sutar Maternity Home, Pune
			338. Model Rural Health Research Unit (MRHRU), Sub District Hospital, Agar, Dahanu, Palghar	137. Dhruv Pathology and Molecular Diagnostic Lab, Third Floor, Aditya Enclave, Central Bazaar Road, Ramdaspath, Nagpur
			339. *Indian Institute of Science Education and Research (IISER), Pune	138. Dept of Molecular Biology & Genetics, Krishna Institute of Medical Sciences, Karad, Satara
			340. Govt. Medical College, Jalgaon	139. Lab Services, Ayugen Biosciences Pvt Ltd, 562/1, Shivajinagar, Pune
			341. District General Hospital, Ahmednagar	140. MGM Medical College and Hospital, Navi Mumbai
			342. Government Medical College, Baramati	141. #Ruby Hall Clinic, Dept of Laboratory, Grant Medical Foundation, 40, Sassoon Road, Pune
			343. #Govt. Medical College, Chandrapur	142. D. Y. Patil Medical College, Kolhapur
			344. #Govt. Medical College, Yavatmal	
			345. Swami Ramanand Teerth Rural Government Medical College, Ambajogai	
			346. Government Medical College, Gondia	
			347. Agharkar Research Institute, Pune	
			348. District General Hospital, Ratnagiri	



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
			349. Dr. Shankarrao Chavan Govt. Medical College, Nanded	143. Metropolis Healthcare Limited, Shop No. 1, Ground Floor, Ahilya Building, Savarkar Marg, Thane West, Thane 144. Molecular Diagnostic Laboratory, Department of Pathology, LMMF's Deenanath Mangeshkar Hospital and Research Center, Erandwane, Pune 145. Datar Cancer Genetics Ltd, F-8, D-Road, Ambad MIDC, Nashik 146. Apoorva Diagnostic and Health Care, Bhaktivedanta Hospital and Research Institute, Bhaktivedanta Swami MArg, Sector 1, Mira Bhayandar 147. Dr. DY Patil Medical College Hospital and Research Centre, Pimpri, Pune 148. Molecular Laboratory, Jaslok Hospital and Research Centre, 15, Dr Deshmukh Marg, Peddar Road, Mumbai 149. NM Medical, Harchandrai House, Above Axis Bank, 2nd Floor, Maharshi Karve Road, Marine Lines (E), Mumbai 150. Bharati Vidyapeeth (Deemed to be University) Medical College, Pune



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
		TrueNat	350. Civil Surgeon, District Hospital, Parbhani 351. District Hospital, Satara 352. Daga Memorial Government Women Hospital, Nagpur 353. Navi Mumbai Municipal Corporation General Hospital, F.R.U. Vashi 354. District General Hospital, Gadchiroli 355. Darasha Maternity Home, Solapur Municipal Corporation, Solapur 356. District Hospital, Amravati 357. Sub district Hospital, Shahapur, Thane 358. RCH Room, N.N. Wadia Hospital, Malegaon, Nashik, Maharashtra 359. Dr. Zakir Hussain Hospital, Kathda, Municipal Corporation Nashik 360. Sub District Hospital, Gadhinglaj, Kolhapur 361. Late Indira Gandhi Memorial Hospital, Bhiwandi	151. Qualilife Diagnostics, Balaji Arcade, 1st Floor, 544/A, Netaji Subhash Road, Mulund (W), Mumbai 152. Rural Medical College, Pravara Institute of Medical Sciences, Loni, Ahmednagar 153. Clinicare Speciality Laboratory Pvt. Ltd., Lata Mangeshkar Hospital, Nagpur
		CB NAAT	362. Intermediate Reference Laboratory, Pune 363. Govt. Medical College, Baramati 364. Lokmanya Tilak Municipal General Hospital and Medical College, Mumbai 365. \$ Molecular Diagnostic Laboratory, District Hospital, Sindhudurg	154. Sunflower Lab & Diagnostic Center, Keshav Kunj, Marve Road, Malad West, Mumbai 155. Aditya Birla Memorial Hospital - Laboratory, Aditya Birla Marg, Chinchwad, Pune



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
			366. Gokuldas Tejpal Hospital, Mumbai	156. Dr. Jariwala Lab & Diagnostics LLP, 1st Floor, Rasraj Heights, Rokadia Lane, Off Mandpeshwar Road, Borivli (W), Mumbai 157. Su-Vishwas Diagnostic Lab, 1st floor Midas height, Ramdaspath, Nagpur 158. \$Jupiter Lifeline Hospitals Limited, Pune 159. Kingsway Hospitals ((A Unit of SPANV Medisearch Lifesciences Pvt Ltd), 44, Kingsway Road, Nagpur 160. \$ Jupiter Hospital, Eastern Express Highway, Thane West 161. Dr Ajay Shah's Pathology Lab & Microbiology Reference Center, 1st Floor, Amidrashti, Opposite Manav Kalyan Kendra, S V Road, Dahisar East. Mumbai 162. Dr. Lal Pathlabs Ltd. Dadar, Add: Shop no 2 to 6, Shilpa Apartment, Shankar ghanekar marg, off Ghokale road, Prabhadevi, Dadar west, Mumbai 163. Kamalnayan Bajaj Hospital Pathology Laboratory, Gut no.43, Satara Parisar, Bajaj marg, Beed bypass road, Aurangabad
17.	Madhya Pradesh (79)	RT-PCR	367. All India Institute of Medical Sciences, Bhopal	164. Chirayu Medical College & Hospital, Bhopal Indore Highway, Bhaisakhedi, Bhopal



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
	Govt: 71 Private: 8		368. ICMR-National Institute for Research on Tribal Health, Jabalpur 369. Mahatma Gandhi Memorial Medical College, Indore 370. Gandhi Medical College, Bhopal 371. Bhopal Memorial Hospital & research Centre, Bhopal 372. Gajra Raja Medical College, Gwalior 373. Bundelkhand Medical College, Sagar 374. SS Medical College, Rewa 375. *Defence Research & Development Organization, Gwalior 376. *ICAR-NIHSAD, Bhopal 377. Govt. Medical College, Ratlam 378. Netaji Subhash Chandra Bose Medical College, Jabalpur 379. Govt. Medical College, Khandwa 380. Atal Bihari Vajpayee Government Medical College (ABVGMC), Vidisha 381. *IISER, Bhopal	165. #Central Research Lab, R D Gardi Medical College, Surasa, Ujjain 166. CentraPath Labs Private Ltd, MZ 117-118, Yeshwant Plaza, Indore 167. Lab Medicine, Bansal Hospital, A unit of Ayushman Medical Diagnostics Pvt Ltd, C-sector Shahpura, Bhopal 168. Sri Aurobindo Institute of Medical Sciences, Indore 169. L. N. Medical College & J. K. Hospital, Bhopal
		TrueNAT	382. District Tuberculosis Centre, Bhopal 383. District Hospital Gwalior 384. District Hospital Morena 385. District Hospital Chhatarpur 386. District Hospital Damoh	170. Sampurna Sodani Diagnostic Clinic, LG-1, Morya Centre, 16/1, Race Course Road, Indore 171. Central Pathology Laboratory, People's Hospital, Bhanpur, Bhopal-462037



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
			387. District Hospital Sagar	
			388. District Hospital Tikamgarh	
			389. District Hospital, Mandasaur	
			390. District Hospital, Neemuch	
			391. District Tuberculosis Centre, Indore	
			392. District Hospital Chhindwara	
			393. District Hospital, Jabalpur	
			394. District Hospital, Shahdol	
			395. District Hospital, Burhanpur	
			396. District Hospital, Singrauli	
			397. District Tuberculosis Centre, Raisen	
			398. District Hospital, Bhind	
			399. District Hospital, Datia	
			400. District Hospital, Sheopur	
			401. District Hospital, Shivpuri	
			402. District Hospital, Alirazpur	
			403. District Hospital, Barwani	
			404. District Hospital, Dhar	
			405. District Hospital, Jhabua	
			406. District Hospital, Khargone	
			407. District Hospital, Agarmalwa	
			408. District Hospital, Shajapur	
			409. District Hospital, Ujjain	
			410. District Hospital, Dindori	
			411. District Tuberculosis Centre, Mandla	



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
			412. District Hospital, Seoni	
			413. District Hospital, Satna	
			414. District Hospital, Sidhi	
			415. District Hospital, Singrauli	
			416. District Hospital, Umaria	
			417. District Hospital, Panna	
			418. District Hospital, Rewa	
			419. District Hospital, Harda	
			420. JSR Hospital, Itarsi	
			421. CHC, Pipariya	
			422. District Hospital, Rajgarh	
			423. District Hospital, Sehore	
			424. District Hospital, Vidisha	
			425. District Hospital, Ashok Nagar	
			426. District Hospital, Dewas	
			427. District Hospital, Guna	
			428. District Hospital, Khandwa	
			429. District Hospital, Ratlam	
			430. District Government Hospital, Balaghat	
			431. District Hospital, Katni	
			432. MG Hospital, Dewas	
			433. JP Hospital, Bhopal	
			434. Government PC Sethi Hospital, Indore	
			435. District Hospital, Anuppur	
			436. District Hospital, Betul	



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
18.	Manipur (2)	RT-PCR	437. Civil hospital, Gadarwara, Narsinghpur	
			438. Jawaharlal Nehru Institute of Med. Sciences, Imphal-East, Manipur	
			439. Regional Institute of Medical Sciences, Imphal	
19.	Meghalaya (7) Govt: 6 Private: 1	RT-PCR	440. North Eastern Indira Gandhi Regional Institute of Health & Medical Sciences, Shillong, Meghalaya	
			441. #Civil Hospital, Tura	
		TrueNAT	442. Pasteur Institute, Shillong	
			443. Civil Hospital, Nongstoin	
			444. M.C.H. Hospital, Zowai	
		CB NAAT		172. \$ Nazareth Hospital, Shillong
20.	Mizoram (2)	RT-PCR	446. Zoram Medical College, Falkawn	
		TrueNat	447. Civil Hospital, Lunglei	
21.	Nagaland (12)	RT-PCR	448. State Referral BSL-3 Laboratory, Naga Hospital, Kohima	
			TrueNat	449. Imkongliba Memorial District Hospital, Mokokchung
		450. District Hospital, Mon		
		451. District Hospital, Dimapur, Nagaland		
		452. CHC, Jalunkie, Nagaland		
		453. District Hospital, Zunheboto		
454. District Hospital, Wokha				



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
			455. District Hospital, Tuensang 456. District Hospital, Phek 457. District Hospital, Kiphire 458. District Hospital, Longleng 459. PHC Chumukedima, Dimapur	
22.	Odisha (21) Govt: 16 Private: 05	RT-PCR	460. ICMR-Regional Medical Research Centre, Bhubaneswar (High-throughput Laboratory) 461. All India Institute of Medical Sciences, Bhubaneswar 462. SCB Medical College and Hospital, Cuttack 463. MKCG Medical College, Berhampur 464. Ispat General Hospital, Rourkela 465. Veer Surendra Sai institute of Medical Science & Research, Sambalpur 466. *Institute of Life Sciences, Bhubaneswar 467. *ICAR- International Centre for Foot and Mouth Disease, Khordha, Odisha 468. *Indian Institute of Science Education and Research (IISER), Berhampur 469. #Bhima Bhoi Medical College and Hospital, Bolangir 470. #Pandit Raghunath Murmu Medical College, Baripada	173. #Dept of Lab Services, Apollo Hospitals, Bhubaneswar 174. IMS & SUM Hospital, Bhubaneswar 175. InDNA Life Sciences Pvt Ltd, 2nd Floor, KIIT TBI, Bhubaneswar



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
		TrueNAT	471. SLN Medical College and Hospital, Koraput 472. Tribal Field Unit of ICMR-RMRC, Bhawanipatna, Kalahandi 473. Tribal Field Unit of ICMR-RMRC, Rayagada 474. Fakir Mohan Medical College and Hospital, Balasore 475. Old District Headquarter Hospital, Jharsuguda	
		CB NAAT		176. Central Lab, AMRI Hospitals, Plot No 1, Khandagiri, Bhubaneswar 177. Kalinga Institute of Medical Science (KIMS), Dept. of Microbiology, Bhubaneswar
23.	Puducherry (4) Govt: 3 Private: 1	RT-PCR	476. #Jawaharlal Institute of Postgraduate Medical Education & Research, Puducherry 477. Indira Gandhi Medical College, Puducherry	
		TrueNat		178. Pondicherry Institute of Medical Sciences, Ganapathichettikulam, Kalapet, Puducherry
		CB NAAT	478. Intermediate Reference Laboratory, Govt. Hospital for Chest Diseases, Gorimedu, Puducherry	



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
24.	Punjab (24) Govt: 20 Private: 4	RT-PCR	479. Govt. Medical College, Amritsar 480. Govt. Medical College, Patiala 481. Guru Gobind Singh Medical University, Faridkot	179. Tuli Diagnostic Centre, Majitha Road, Amritsar 180. Christian Medical College, Ludhiana
		TrueNat	482. District Hospital, Barnala 483. District Hospital, Jalandhar 484. District Hospital, Ludhiana 485. District Hospital, Mansa 486. District Hospital, Pathankot 487. District Hospital, Bhatinda 488. District Hospital, Fazilka 489. District Hospital, Gurdaspur 490. District Hospital, Hoshiarpur 491. District Hospital, Kapurthala 492. District Hospital, Moga 493. District Hospital, Rupnagar 494. District Hospital, Sangrur 495. District Hospital, SBS Nagar 496. District Hospital, Muktsar Sahib	
		CB-NAAT	497. Intermediate Reference Laboratory, Patiala 498. Military Hospital, Jalandhar	181. Department of Microbiology, Dayanand Medical College & Hospital, Tagore Nagar, Civil Lines, Ludhiana 182. Dr Bhasin Path labs , A 96,97,98, Ranjit Avenue , Amritsar

S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
25.	Rajasthan (28) Govt: 22 Private: 6	RT-PCR	499. Sawai Man Singh Medical College, Jaipur 500. Rajasthan University of Health Sciences Medical College, Jaipur 501. Dr. Sampurnan and Medical College, Jodhpur 502. Jhalawar Medical College, Jhalawar 503. RNT Medical College, Udaipur 504. SP Medical College, Bikaner 505. All India Institute of Medical Sciences, Jodhpur 506. JLN Medical College, Ajmer 507. Govt. Medical College, Kota 508. ICMR-National Institute for Implementation Research on Non-Communicable Diseases, Jodhpur 509. RVRs Govt. Medical College, Bhilwara 510. Govt. Medical College, Dungarpur 511. Pandit Deendayal Upadhyaya Medical College, Churu 512. Govt. Medical College, Bharatpur 513. Govt. Medical College, Sikar 514. Govt. Medical College, Barmer 515. Govt. Medical College, Pali 516. Govt. BDK District Hospital, Jhunjhunu 517. Military Hospital, Jaipur	183. Central Lab, The Mahatma Gandhi University of Medical Sciences and Technology, RIICO Institution Area, Sitapura, Tonk Road, Jaipur 184. Dr. B Lal Clinical Lab Pvt Ltd, 6-E, Malviya Industrial Area, Malviya Nagar, Jaipur 185. #Brig T.K. Narayanan Dept of Pathology, Santokaba Durlabhji Memorial Hospital Cum Medical Research Institute, Jaipur (TruNat and RTPCR) 186. Jaipur National University Institute for Medical Sciences and Research Centre, Jaipur 187. Goyal Hospital & Research Centre Pvt. Ltd., 961 Residency Road, Opp. Rotary Club, Jodhpur-342003 188. Krsnaa Diagnostics Pvt Ltd, National Institute of Ayurveda, Madhav Vilas Palace, Amer Road, Jaipur



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
			518. District Hospital, Sirohi 519. District Hospital, Jalore 520. Advanced Molecular Laboratory, MG Hospital, Banswara	
26.	Tamil Nadu (89) Govt: 47 Private: 42	RT-PCR	521. King Institute of Preventive Medicine & Research, Chennai 522. Madras Medical College, Chennai 523. Stanley Medical College, Chennai 524. Govt. Kilpauk Medical College, Chennai 525. ICMR-National Institute for Research in Tuberculosis, Chennai 526. State Public Health Laboratory, Chennai 527. ICMR-National Institute of Epidemiology, Chennai 528. Dr. MGR Medical University, Chennai 529. Dr. ALM PG Institute of Basic Medical Sciences, Chennai 530. Govt. Medical College & Hospital, Omandurar Govt. Estate, Chennai 531. Govt. Theni Medical College, Theni 532. Tirunelveli Medical College, Tirunelveli 533. Govt. Medical College, Thiruvavur 534. Kumar Mangalam Govt. Medical College, Salem 535. Coimbatore Medical College, Coimbatore	189. Dept. of Clinical Virology, CMC, Vellore 190. Department of Laboratory Services, Apollo Hospitals Enterprise Ltd, Chennai 191. Neuberg Ehrlich Lab Pvt Ltd, 46-48 Masilamani Road, Balaji Nagar, Chennai 192. Sri Ramachandra Medical College & Research Institute, Porur, Chennai 193. Microbiology Lab, Veerakeralam Road, Coimbatore 194. YRG CARE, Taramani, Chennai 195. Hitech Diagnostic Centre- A Unit of Dr. Ganesan's Hitech Diagnostic Centre Pvt Ltd, Poonamallee High Road, Chennai 196. PSG Hospitals Diagnostic Centre, Avinashi Road, Peelamedu, Coimbatore 197. Medall Healthcare Pvt Ltd, 17, Race View Colony, 2nd street, Race Course Road, Guindy, Chennai 198. Meenakshi Labs Madurai A unit of Sunmed Healthcare Pvt Ltd, 2nd Floor,

S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
			536. Govt. Medical College & ESIC Hospital, Coimbatore	Meenakshi Mission Hospital and Research Centre, Madurai
			537. Govt. Medical College, Villupuram	199. Metropolis Healthcare Limited, No 3, Jaganathan Road, Nungambakkam, Chennai
			538. Madurai Medical College, Madurai	
			539. K A P Viswanatham Govt. Medical College, Trichy	200. #Clinical Lab Services, Dr. Rela Institute & Medical Centre, #7, CLC Works Rd, Shankar Nagar, Chennai
			540. Perundurai Medical College, Perundurai	201. Doctors' Diagnostic Centre, 123/1, Puthur High Road, Thiruchirapalli
			541. Govt. Dharmapuri Medical College, Dharmapuri	202. Molecular Testing, Institute of Lab Medicine, Kovai Medical Center & Hospital, 99, Avinashi Road, Coimbatore
			542. Govt. Medical College, Vellore	203. Chettinad Hospital and Research Institute, Chengalpattu
			543. Thanjavur Medical College, Thanjavur	204. Nu-Med Labs, 15A, Nellukara Street, Kanchipuram
			544. Kanyakumari Govt. Medical College, Nagercoil	205. BioLine Laboratory, 43B-1, Cowley Brown Road, RS Puram, Coimbatore
			545. Govt. Thoothukudi Medical College, Thoothukudi	206. Premier Health Center, Crescent Court, Ground Floor No 963, Poonamallee High Road, Purasawalkam, Chennai
			546. Institute of Vector Control & Zoonoses, Hosur	207. Dept of Lab Medicine, Royalcare Super Speciality Hospital Ltd, 1/520, L&T Road, Neelambur, Coimbatore
			547. Pasteur Institute of India, Coonoor	
			548. Rajah Muthiah Medical College, Chidambaram	
			549. Govt. Medical College, Karur	
			550. Govt. Tiruvannamalai Medical College & Hospital, Tiruvannamalai	
			551. Chengalpattu Govt. Medical College, Kancheepuram	



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
			552. Govt. Medical College and Hospital, Pudukkottai	208. #VRR Diagnostics, #87, Burkit Road, T. Nagar, Chennai
			553. Govt. Shivagangai Medical College, Shivagangai	209. Lab Services, Apollo Speciality Hospitals, P 3, KK Nagar East 1st Street, Madurai
			554. Govt. District Headquarters Hospital, Virrudhu Nagar	210. Orbito Asia diagnostics, Puliyakulam road, Coimbatore
			555. Govt. District Headquarters Hospital, Ramanathapuram	211. Lifecell International Pvt Ltd, No 26, Vandalur - Kelambakkam Main Road, Keelakottaiyur, Chennai
			556. Govt. District Headquarters Hospital, Ariyalur	212. Vivek Laboratories, 1159, K.P. Road, Nagercoil, Kanniyakumari
			557. Govt. District Headquarters Hospital, Tiruppur	213. Krsnaa Diagnostics Pvt Ltd, Krsnaa Diagnostics Coimbatore Medical College & Hospital, No 1619 A, Trichy Road, Coimbatore
			558. Govt. Kallakruichi Hospital, Kallakurichi	214. Central Laboratory, Sree Balaji Medical College and Hospital, Chennai
			559. Govt. District Headquarters Hospital, Tiruvallur	215. Aarthi Scans and Labs. No 60, 100 feet road, Vadapalani, Chennai
			560. Govt. District Headquarters Hospital, Namakkal	216. Balaji Medical Centre, Old No 18, New No 4, Jagadeeswaran Street, T.Nagar, Chennai
			561. *Central Leather Research Institute, Adyar, Chennai	217. Anderson Diagnostics and Labs, Kilpauk
			562. Government Headquarters Hospital, Dindigul	
			563. C.D Hospital, Greater Chennai Corporation, Chennai	
			564. Government District Head Quarters Hospital, Nagapattinam	



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
			565. Government Hospital, Tirupattur 566. Government Head Quarters Hospital, Krishnagiri	218. Aarthi Scans and Labs, No. 177(177A/22/1,177A/22/2), Trivandrum Road, Vannarpet, Tirunelveli, Tamilnadu 219. Velammal medical College Hospital & RI, Anuppanadi , Madurai 220. PrimeGen Healthcare Laboratories Private Limited, Old no 7, New no 3, Inner ring road, 37th Street, Thillai Ganga Nagar, Nanaganallur, Chennai 221. Meenakshi Medical College Hospital and Research Institute, Kanchipuram 222. Endocare Diagnostic Centre, No. 128, East 5 th Street, K.K.Nagar, Madurai
		TrueNat		223. Karpaga Vinayaga Institute of Medical Sciences, Madhuranthgam Chengalpet 224. Suriyaa Diagnostics, 81, Broadway main road, Chennai-600108
		CB NAAT	567. Government Hospital of Thoracic Medicine, Sanatorium, Chennai Tambaram	225. MIOT Hospitals - Dept of Lab Medicine, 4/112, Mount Poonamallee Road, Manapakkam, Chennai 226. \$ Madras Medical Mission Clinical Lab Services, 4-A, Dr. J. Jayalalitha Nagar, Mogappair East, Chennai



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
				227. \$Clinical Lab Services, Sundaram Medical Foundation, Dr. Rangarajan Memorial Hospital, 9C, 4th Avenue, Shanthi Colony, Anna Nagar, Chennai 228. VHS Lab Services, VHS Hospital, Rajiv Gandhi Salai, Taramani, Chennai 229. Laboratory Services, Sri Ramakrishna Hospital, 395, Sarojini Naidu Road, Sidhapudur, Coimbatore 230. Microbiology Lab, CSI, Scudder Memorial Hospital, Kelly's Road, Ranipet
27.	Telangana (32) Govt: 13 Private: 19	RT-PCR	568. Gandhi Medical College, Secunderabad 569. Osmania Medical College, Hyderabad 570. Sir Ronald Ross of Tropical & Communicable Diseases, Hyderabad. 571. Nizam's Institute of Medical Sciences, Hyderabad 572. Institute of Preventive Medicine, Hyderabad 573. ESIC Medical College, Hyderabad 574. Kakatiya Medical College, Warangal 575. *Centre for Cellular & Molecular Biology, Hyderabad	231. #Laboratory Services, Apollo Hospitals, 6th Floor, Health Street Building, Jubilee Hills, Hyderabad 232. Vijaya Diagnostic Centre Pvt Ltd, Street No 19, Himayath Nagar, Hyderabad 233. Vimta Labs Ltd, Plot No 142, Phase 2, IDA Cherlapally, Hyderabad 234. Apollo Health and Lifestyle Limited, Diagnostic Laboratory, Bowenpally, Secunderabad 235. Dr. Remedies Labs Private Ltd, A3, Titus Plaza, Sharma Commercial Complex, Punjagutta, Hyderabad



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
			576. *Centre for DNA Fingerprinting & Diagnostics, Hyderabad	236. Pathcare Labs Pvt Ltd, Medchal, Hyderabad 237. American Institute of Pathology And Lab Sciences Pvt Ltd, Citizens Hospital, Serilingampally, Hyderabad 238. Medcis Pathlabs India Pvt Ltd, Plot No 16 & 17, Swathi Plaza, Anand Nagar, New Bowenpally, Secunderabad 239. Department of Lab Medicine, Yashoda Hospital, 9th Floor, 1-1-156 & 157, Alexander Road, Secunderabad 240. Biognosys Technologies (India) Pvt Ltd, #8-148/174/11, NRI Colony, Near Aleap Industrial Area, Medchal, Malkajgiri 241. Tenet Diagnostics, Plot No 51, Kineta Towers, Journalist Colony, Road No 3, Banjara Hills, Hyderabad 242. AIG Hospitals, Survey No 136, Plot No 2/3/4/5, 1, Mindspace Rd, Gachibowli, Hyderabad 243. Cell Correct Diagnostics, Virinchi Hospitals, Road No 1, Banjara Hills, Hyderabad 244. Krishna Institute of Medical Sciences Ltd, Dept of Lab Services, 1-8-31/1, Minister Road, Secunderabad



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
				245. MAPMYGENOME India Ltd, Royal Demeure, Plot No 12/2, Sector-1, HUDA Techno Enclave, Madhapur, Hyderabad 246. LEpra Society-Blue Peter Public Health and Research Centre, Cherlapally, Near TEC Building, Hyderabad 247. Lucid Medical Diagnostics Pvt Ltd, Plot No 203,203A, Vasavi Nagar, Karkhana, Secunderabad
		TrueNAT		248. Dept of Lab Medicine, Star Hospital, A Unit of UniMed Healthcare Pvt Ltd, 8-2-594/B, Road No 10, Banjara Hills, Hyderabad
		CB NAAT	577. Rajiv Gandhi Institute of Medical Sciences, Adilabad 578. Government General Hospital, Nizamabad, Telangana 579. Government General Hospital, Suryapet, Telangana 580. AH Hospital, Gadwal, Telangana	249. Department of Laboratory Medicine, Gleneagles Global Hospital, Lakdi-kapul, Hyderabad
28.	Tripura (1)	RT-PCR	581. Govt. Medical College, Agartala	
29.	Uttar Pradesh (112) Govt: 99 Private: 13	RT-PCR	582. King George Medical University, Lucknow 583. Institute of Medical Sciences, Banaras Hindu University, Varanasi	250. RML Mehrotra Pathology Pvt Ltd, Nirala Nagar, Lucknow 251. Dept of Lab Medicine, Jaypee Hospital, Sector 128, Noida

S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
			584. Jawaharlal Nehru Medical College, Aligarh	252. Central Lab, Sharda Hospital, Plot no 32,34, Knowledge Park-III, Greater Noida
			585. Command Hospital, Lucknow	253. Medical Testing Lab, Yashoda Superspeciality Hospital, H-1, 24, 26-27, Kaushambi, Ghaziabad
			586. Lala Lajpat Rai Memorial Medical College, Meerut	
			587. Sanjay Gandhi Post Graduate Institute, Lucknow	
			588. MLN Medical College, Allahabad	
			589. Uttar Pradesh University of Medical Sciences (Formerly Uttar Pradesh RIMS), Saifai	
			590. MLB Medical College, Jhansi	
			591. ICMR-Regional Medical Research Centre, Gorakhpur	
			592. SN Medical College, Agra	
			593. #ICMR-National JALMA Institute for Leprosy & Other Mycobacterial Diseases, Agra	
			594. RML Institute of Medical Sciences, Lucknow	
			595. Govt. Institute of Medical Sciences, Noida	
			596. #GSVM Medical College, Kanpur	
			597. National Institute of Biologicals, Noida (High-throughput Laboratory)	
			598. BRD Medical College, Gorakhpur	



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
			599. *Indian Institute of Toxicology Research, Lucknow 600. *Birbal Sahni Institute of Palaeosciences, Lucknow 601. *Central Drug Research Institute, Lucknow 602. *ICAR- Indian Veterinary Research Institute (IVRI), Izatnagar 603. Super Specialty Pediatric Hospital and Postgraduate Teaching Institute (SSPHPGTI), Noida 604. College of Veterinary Sciences and Animal Husbandry, UP Pt. Deen Dayal Upadhyaya Pashu Chikitsa Vishwavidyalaya evam Go Anusandhan Sansthan, Mathura	
		TrueNat	605. District Combined Hospital, District Balrampur 606. District Combined Hospital, District Basti 607. Sarojani Naidu Samarak Hospital, District Firozabad 608. Babu Eswar Saran District Hospital, Gonda	254. Heritage Speciality Lab, Lanka, Varanasi 255. Central Lab, Subharti Medical College, Meerut 256. DR Chopra's Path Clinic, III F/8 Rakesh Marg, Nehru Nagar, Ghaziabad 257. Saral Diagnostics Classic Pvt. Ltd., E-1B, Sector 39, Gautam Budh Nagar, Noida



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
			609. Amar Shahid late Uma Nath Singh District Hospital, Jaunpur	
			610. District Hospital, Bahraich	
			611. District Male Hospital, Ayodhya	
			612. District Combined Hospital, Mahrajganj	
			613. District Femal Hospital, Muzaffarnagar	
			614. District Male Hospital, Pratapgarh	
			615. District Hospital, Ballia	
			616. Pt.Ramprasad Bismil, District Combined Hospital Shahjahanpur	
			617. Bairister Yusuf Emam, Divisional Hospital, Mirzapur	
			618. Mahatama Gandhi, District Combined Hospital, Siddharth Nagar	
			619. Balrampur Hospital, Lucknow	
			620. Malkhan Singh Joint District Hospital, Aligarh	
			621. District Hospital, Ambedkar Nagar	
			622. Pt. Din Dayal Upahadhy, District Combined Hospital, Moradabad	
			623. Motilal Nehru Divisional Hospital, Prayagraj	
			624. Divisional Hospital, Azamgarh	



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
			625. District Male Hospital, Budaun	
			626. Babu Mohan Singh, Joint District Hospital, Deoria	
			627. Bheemrao Ambedkar Multi Superspeciality District Hospital, G. B Nagar	
			628. Netaji Subhash Chandra Bose District Hospital, Gorakhpur	
			629. Rana Devi Madhav Singh, District Hospital, Raebareli	
			630. District Hospital, Sultanpur	
			631. Maharana Pratap Joint District Hospital, Bareilly	
			632. Rafi Ahmad Kidwai memorial District Hospital, Barabanki	
			633. District Hospital, Etah	
			634. M.M.G District Hospital, Ghaziabad	
			635. Joint District Hospital, Manjhanpur, Kaushambi	
			636. District Male Hospital, Sitapur	
			637. District Male Hospital, Kheri	
			638. Babu Banarasi Das govt. District Hospital, Bulandsahar	



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
			639. District Hospital, Agra 640. Joint District Hospital, Amethi 641. District Hospital, Baghpat 642. District Male & Eye Hospital, Padrauna, Kushinagar 643. U.H.M District Male Hospital, Kanpur Nagar 644. P.L. Sharma District Hospital, Meerut 645. Shadilal Memorial Community Health Centre, Shamli 646. Uma Shankar Dixit Joint District Hospital, Unnao 647. S.S.P.G District Hospital, Varanasi 648. 100 Bedded District Hospital, Auraiya 649. District Hospital, Banda 650. District Combined Hospital, Bijnor 651. Pt. Kamlapati Tripathi Joint District Hospital, Chandauli 652. Joint District Hospital, Chitrakoot 653. Dr. Bheemrao Ambedkar District Hospital, Etawah 654. Dr. Ram Manohar Lohia District Hospital, Farrukabad	

S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
			655. District Hospital, Fatehpur	
			656. Dr. Mukhtar Ansari District Hospital, Ghazipur	
			657. Deewan Satrugghan District Hospital, Hamirpur	
			658. District Hospital, Hapur	
			659. Pt. Ramdayal Trivedi District Hospital, Hardoi	
			660. Bangla District Hospital, Hathras	
			661. Joint District Hospital, J.P Nagar	
			662. District Male Hospital, Jalaun	
			663. Divisional District Hospital, Jhansi	
			664. 100 Beded District Hospital, Kannauj	
			665. Joint District Hospital, Akbarpur, Kanpur Dehat	
			666. Joint District Hospital, Kanshiram Nagar	
			667. Manywar Kanshiram Joint District Hospital, Lalitpur	
			668. District Hospital, Mahoba	
			669. Maharaja Tez Singh District Hospital, Mainpur	
			670. Mahrishi Dayanad Saraswati District Hospital, Mathura	



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
			671. District Hospital, Ghazipur Tiraha, Mau 672. Joint District Hospital, Pilibhit 673. District Hospital, Rampur 674. Seth Baldev Das District Hospital, Saharanpur 675. Joint District Hospital, Manjhanpur, Sambhal 676. Joint District Hospital, Sant Kabir Nagar 677. Maharaja Balwant District Hospital, Santravidas Nagar 678. Joint District Hospital, Bhinga, Shrawasti 679. Joint District Hospital, Robertsganj, Sonbhadra 680. 12 Air Force Hospital, Gorakhpur	
		CB NAAT		258. \$ Gian Life Care Ltd, 7/216(6), Swaroop Nagar, Kanpur 259. \$ Dept of Microbiology, Apollomedics Super Speciality Hospitals, KBC-31, Sector B, LDA Colony, Kanpur Road, Lucknow 260. Scientific Pathology Agra, Durga Commercial Complex, Hariparwat Delhi Gate, Agra



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
				261. \$ Department of Lab Sciences, Regency Hospital, A-2, Sarvodaya Nagar, Kanpur 262. \$ Charakdhar Diagnostics Pvt. Ltd. Basement, 292/05 Tulsidas Marg, Chowk, Near King George Medical University, Lucknow
30.	Uttarakhand (12) Govt: 11 Private: 1	RT-PCR	681. Govt. Medical College, Haldwani 682. All India Institute of Medical Sciences, Rishikesh 683. Doon Medical College, Dehradun 684. Veer Chandra Singh Garhwali Govt. Institute of Medical Science & Research, Srinagar, Pauri, Garhwal 685. *CSIR- Indian Institute of Petroleum, Dehradun 686. *ICAR- Indian Veterinary Research Institute (IVRI), Mukteswar	263. #Dr. Ahuja's Pathology and Imaging Centre, 7-B, Astley Hall, Dehradun
		TrueNat	687. Mela Hospital, Haridwar 688. JLN Hospital, Rudrapur, USNagar 689. District Hospital, Pithoragarh, 690. District Hospital, Uttarkashi	
		CB NAAT	691. Military Hospital, Dehradun	
31.	West Bengal (52)	RT-PCR	692. ICMR-National Institute of Cholera & Enteric Diseases, Kolkata	264. Apollo Gleneagles Hospitals, 58 Canal Circular Road, Kolkata 265. Tata Medical Center, Rajarhat, Kolkata

S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
	Govt: 36 Private: 16		693. Institute of Post Graduate Medical Education & Research, Kolkata 694. Midnapore Medical College, Midnapore 695. North Bengal Medical College, Darjeeling 696. School of Tropical Medicine, Kolkata 697. Malda Medical College & Hospital, Malda 698. Command Hospital, Kolkata 699. Chittaranjan National Cancer Institute, Kolkata 700. R.G. Kar Medical College & Hospital, Kolkata 701. Murshidabad Medical College, Behrampore, Murshidabad 702. Nil Ratan Sircar Medical College, Kolkata 703. Bankura Medical College, Bankura 704. Suri Sadar Hospital, Birbhum 705. #Medical College, Kolkata 706. College of Medicine and JNM Hospital, Kalyani, Nadia 707. ESI-Postgraduate Institute of Medical Science and Research (PGIMSR), Joka, Kolkata	266. Suraksha Diagnostic Pvt Ltd (Dept of Lab Services), 12/1, Premises No 02/0327, DG Block (Newtown), Action Area 1D, Newtown, Kolkata 267. Dr. Lal Pathlabs Ltd - Kolkata Reference lab, Plot No CB-31/1, Premises No 031-0199, Street No 199, Action Area 1C, Newtown, Kolkata 268. Dept of Lab Services, Medica Superspeciality Hospital, 127, Mukundpur, E.M. Bypass, Kolkata 269. Remedy Life Care, Plot 6, Nani Gopal Roy Chowdhury Avenue, Entally, Padmapukur On Main Road, Kolkata 270. #Shri Ramkrishna Institute of Medical Sciences & Sanaka Hospitals, Malandighi, P.S. Kanksha, Durgapur 271. #Laboratory Services, Peerless Hospitex Hospital & Research Centre, 360, Panchasayar, Kolkata 272. Desun Reference Lab - A Unit of Desun Healthcare and Research Institute Limited (Department of Laboratory Services), S-16, Kasba Industrial Estate, Phase III, Kolkata



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
				273. # IICS Laboratory Services, Rabindranath Tagore International Institute of Cardiac Sciences, Premises No 1489, (124) Mukundapur, EM Bypass, Kolkata
		TrueNAT	708. Calcutta National Medical College and Hospital, Kolkata 709. Raiganj Govt. Medical College and Hospital, Raiganj 710. Falakata SSH Hospital, District Alipurduar 711. Jhargram District Hospital, Jhargram District 712. Rampurhat Govt. Medical College and Hospital, Rampurhat, Birbhum 713. Diamond Harbour Govt. Medical College and Hospital, Diamond Harbour 714. Asansol District Hospital, Asansol 715. Balurghat District Hospital, Dakshin Dinajpur 716. Jangipur Sub-Divisional Hospital, Murshidabad 717. Uluberia Sub Divisional Hospital, Howrah	274. Anandaloke Sonoscan Centre Pvt. Ltd., 3/3 Hill Cart Road, Near Mahananda Bridge, Siliguri



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
			718. Serampore Walsh Sub-divisional Hospital, Hugli 719. Biswa Bangla Krirangan SARI/COVID Hospital, Jalpaiguri 720. Chanchal Sub-divisional Hospital (SDH), Malda 721. Purulia Government Medical College and Hospital, Purulia 722. M R Bangur District Hospital, Kolkata 723. Cooch Behar Government Medical College, Cooch Behar 724. Alipurduar District Hospital, Alipurduar 725. Basirhat District and Super-Speciality Hospital, Basirhat	
		CB-NAAT	726. Burdwan Medical College, Burdwan 727. College of Medicine and Sagore Dutta Hospital, Kolkata	275. AMRI Hospitals, Dept of Lab Medicine, JC 16-17, Sector III, Salt Lake City, Kolkata 276. The Calcutta Medical Research Institute (Dept of Pathology), 7/2 Diamond Harbour Raod, Kolkata 277. \$Dept of Lab Medicine, AMRI Hospital, 38/1A, Gariahat Road, Kolkata 278. SRL Limited, P S Srijan Tech Park, DN-52, Saltlake Sector V, Kolkata



S. No.	Names of States	Test Category	Names of Government Institutes	Names of Private Institutes
				279. Woodlands Multispeciality Hospital Limited (Department Of Pathology), 8/5 Alipore Road, Kolkata
32.	Andaman & Nicobar Islands (3)	RT-PCR	728. ICMR-Regional Medical Research Centre, Port Blair	
		TrueNat	729. A&N Islands Institute of Medical Sciences, Port Blair	
		CB NAAT	730. GB Pant Hospital, Port Blair	
33.	Dadra & Nagar Haveli (1)	RT-PCR	731. Shri Vinoba Bhave Civil Hospital, Silvassa	
34.	Sikkim (2)		732. Virus Research and Diagnostic Laboratory, STNM Hospital, Gangtok	
		TrueNAT	733. Intermediate Reference Laboratory, STNM Hospital, Gangtok	
35.	Leh-Ladakh (1)	RT-PCR	734. Sonam Nurboo Memorial Hospital, Leh	
36.	Lakshadweep (3)	TrueNat	735. Lakshadweep Medical Store, Kochi 736. Indira Gandhi Hospital, Kavaratti Island 737. Rajiv Gandhi Specialty Hospital, Agatti	



भारतीय आयुर्विज्ञान अनुसंधान परिषद
स्वास्थ्य अनुसंधान विभाग, स्वास्थ्य और परिवार

कल्याण मंत्रालय, भारत सरकार

Indian Council of Medical Research
Department of Health Research, Ministry of Health
and Family Welfare, Government of India

Date: 12/06/2020

Status of new COVID-19 Govt. & Private laboratories.

Government Medical College, Category 1

S. No.	State	Name of the Laboratory	Category	Update Status
1.	Chhattisgarh (1)	Chhattisgarh Institute of Medical Sciences, Bilaspur	1	Email sent to Dean/Mentor Ins/PS health on 14/04/2020
2.	Delhi (1)	IBHAS Delhi	1	Email sent to Dean/Mentor Ins/PS health on 15/04/2020
3.	Maharashtra (2)	Topiwala National Medical College, Mumbai	1	Email sent to Dean/Mentor Ins/Municipal Commis/PS health on 15/04/2020. Telephonic discussion made with Dean
		HBT Medical College & Cooper Hospital Mumbai	1	Email sent to Dean/Mentor Ins/Municipal Commis. /PS, Health. on 15/04/2020.



Private Medical Colleges/ Private Laboratories:

S. No.	State	Name of the Medical College / Laboratory	Requirements	Status
1	Madhya Pradesh (2)	Index Medical College Hospital & Research Institute	NABL certificate reqd	Email sent to Dean/Mentor Ins/PS health on 15/04/2020 Follow-up call on 29 th May, NABL certificate expected in a week of time
		RKDF Medical College and Research centre, Bhopal	NABL certificate reqd	
2	Karnataka (1)	JN Medical College, KAHER Belagavi	NABL certificate reqd	Email sent to Dean/Mentor Ins/PS health on 15/04/2020 Follow-up call on 29 th May, No Update
3	Uttarakhand (2)	Mahantra Indresh Medical College, Dehradun	NABL certificate reqd	Email sent to Dean/Mentor Ins/PS health on 15/04/2020, NABL certificate expected in a week of time
		Himalayan Institute of Medical Sciences, Dehradun	NABL certified but not for Realtime PCR based testing	Email sent to Dean/Mentor Ins/PS health on 15/04/2020 Follow-up call on 29 th May, NABL certificate pending.
4	Telangana (1)	RVM Institute of Medical Sciences And Resarech Center, Siddipet	NABL certificate reqd	Email sent to Dean/Mentor Ins/PS health on 15/04/2020 Follow-up call on 29 th May, NABL certificate expected in a two weeks time.
5	Uttar Pradesh (1)	Subharti Medical College, Meerut	NABL certified but not for Realtime PCR based testing	Email sent to Dean/Mentor Ins/PS health on 15/04/2020 Follow-up call on 29 th May, Undergoing laboratory assessment
6	Haryana (1)	M.M. Institute of Medical Sciences and Research, Ambala	NABL certificate reqd	Email sent to Dean/Mentor Ins/PS health on 15/04/2020 Follow-up call on 29 th May, NABL certificate expected in a week time
7	Maharashtra (16)	ORANGE CITY HOSPITAL & RESEARCH INSTITUTE, Nagpur	NABL certified Scope pending	Email sent to Dean/Mentor Ins/PS health on 15/04/2020 Follow-up call on 29 th May, Call not connected
		K.J Somaiya Medical College, Sion Mumbai	NABL certificate not received	Email sent to Dean/Mentor Ins/PS health on 15/04/2020 Follow-up call on 29 th May. Call not answered
		Terna Medical College Talegaon Dabhade, Pune	NABL certificate reqd	Email sent to Dean/Mentor Ins/PS health on 15/04/2020.
		Annasaheb Chudaman Patil Memorial Medical College, Dhule	NABL certificate reqd	Email sent to Dean/Mentor Ins/PS health on 15/04/2020 Follow-up call on 29 th May. Update pending
		Dr. VVPF's Medical College, Ahmednagar	NABL certificate reqd	Email sent to Dean/Mentor Ins/PS health on 15/04/2020 Follow-up call on 29 th May, NABL certification pending
		Smt. Kashibai Navale Medical	NABL certificate reqd	Email sent to Dean/Mentor Ins/PS



S. No.	State	Name of the Medical College / Laboratory	Requirements	Status
		College, Pune		health on 15/04/2020 Follow-up call on 29 th May, RTPCR facility not available
		Dr. Ulhas Patil Medical College, Jalgaon	NABL certificate reqd	Email sent to Dean/Mentor Ins/PS health on 15/04/2020, Follow-up call on 29 th May, Call not answered
		BKL Walawalkar Rural Medical College, Ratanagiri	NABL certificate reqd	Email sent to Dean/Mentor Ins/PS health on 15/04/2020
		Prakash Institute of Medical Sciences & Research, Sangli	NABL certificate reqd	Email sent to Dean/Mentor Ins/PS health on 15/04/2020
		SMBT insitute of Medical Sciences & Research Centre, Nashik	NABL certificate reqd	Email sent to Dean/Mentor Ins/PS health on 15/04/2020, Follow-up call on 29 th May, Call not answered
		Vedanta Institute of Medical Sciences, Palghar	NABL certificate reqd	Email sent to Dean/Mentor Ins/PS health on 15/04/2020
		NKP Salve Medical College, Nagpur	NABL certificate reqd	Email sent to Dean/Mentor Ins/PS health on 15/04/2020
		MIMSR Medical College, Latur	NABL certificate reqd	Email sent to Dean/Mentor Ins/PS health on 15/04/2020, Follow-up call on 29 th May, Not applied for NABL certificate.
		Indian Institute of Medical Sciences & Research, Jalna	NABL certificate reqd	Email sent to Dean/Mentor Ins/PS health on 15/04/2020, Follow-up call on 29 th May, NABL certificate not received.
		Ashwini Rural Medical College, Hospital & Research Centre	NABL certificate reqd	Email sent to Dean/Mentor Ins/PS health on 15/04/2020, Follow-up call on 29 th May, Not applied for NABL, Facility not ready for COVID-19 testing
		Datta Meghe Medical College & Shalinitai Meghe Hospital and Research Centre, Nagpur	NABL certificate reqd	
8	Tamil Nadu (2)	Velammal Medical College Hospital & Research Institute, Madurai	NABL certificate reqd	Email sent to Dean/Mentor Ins/PS health on 16/04/2020, Follow-up call on 29 th May, NABL certificate pending.
		Dhanalakshmi Srinivasan Medical College & Hospital	NABL certificate reqd	Email sent to Dean/Mentor Ins/PS health on 15/04/2020, Follow-up call on 29 th May, Call not answered
9	Sikkim (1)	Sikkim Manipal College of Medical Sciences, Gangtok	NABL certificate reqd	Email sent to Dean/Mentor Ins/PS health on 15/04/2020, Follow-up call on 29 th May, NABL status is pending
10	Andhra Pradesh (2)	Alluri Sitarama Raju Academy of Medical Sciences, Eluru, West Godavari	NABL certificate reqd	
		Narayana Medical College, Nellore	NABL certificate reqd	

Protocol for approving a COVID-19 testing facility in view of National Emergency

ICMR is willing to facilitate establishment of a full-fledged COVID-19 testing facility in all Government Medical Colleges and Private Medical Colleges (for private MCs: NABL accreditation for real-time PCR of RNA viruses is required).

A laboratory will be considered fit for assessment by ICMR when the following basic requirements will be available:

1. Real Time RT-PCR machine which is calibrated and functional.
2. Biosafety Level 2 cabinet which is calibrated and functional.
3. Cold centrifuge
4. Pipettes, RNA extraction kits, plasticware and other basic consumables.
5. Autoclave for sterilizing the waste.
6. Staff is available and has some previous experience of work using real-time PCR machine.
7. Biomedical waste management policy in place and understanding on segregation of infectious waste.

Once the above requirements are met, only then ICMR may be approached for approval.

Steps of Approval from ICMR:

Categories	Nomenclature
Category 1: Any of the above-mentioned requirements 1-7 are not met.	Cannot be considered in the present form. State Govt. support is required for meeting the above criteria.
Category 2: All the above requirements 1-7 are fulfilled.	Under review
Category 3: Staff trained at nearest VRDL and the trainer recommends the lab.	Approved
Category 4: First test is run independently and successfully by the lab and results are shared with ICMR.	Functional Lab. Fit to start independent testing

**As and when the labs will move from category 1 to 2, ICMR will consider facilitating a COVID-19 testing facility.*

INDIAN COUNCIL OF MEDICAL RESEARCH

DEPARTMENT OF HEALTH RESEARCH

Date: 09/05/2020

Advisory for use of Cartridge Based Nucleic Acid Amplification Test (CBNAAT) using Cepheid Xpert Xpress SARS-CoV2

1. Cepheid Xpert Xpress SARS-CoV2 is a FDA approved Cartridge Based Nucleic Acid Amplification Test (CBNAAT) for use under an emergency use authorization (EUA) only
<https://www.fda.gov/media/136314/download>.
2. Specimen collection and transfer of sample for CBNAAT must be performed using appropriate PPE and following all applicable biosafety requirements.
3. ICMR recommends that any testing with the Cepheid Xpert Xpress SARS CoV-2 is carried under Biosafety 2 level (BSL-2) conditions and with appropriate biosafety precautions.
4. Any laboratory which is already functional for SARS CoV2 testing by real-time PCR with the appropriate BSL-2 setup may initiate testing using Cepheid Xpert Xpress SARS- CoV2 without any further approval from ICMR. The results of the testing need to be entered on the ICMR COVID-19 portal.
5. Any new Government laboratory seeking to initiate CBNAAT must satisfy the following minimum requirements:
 - a. **Availability of a BSL-2 level laboratory facility including a molecular biology setup for virological diagnosis and a functioning and calibrated Biosafety cabinet type 2A/2B in the laboratory.**
 - b. Staff Requirements:
 - i. Availability of following minimum staff: trained microbiologist for handling Molecular Virology work.
 - ii. Technicians – At least 2-3 with experience of work on respiratory pathogens.
 - iii. Multi-Task Staff – 1 or more for washing / cleaning
 - c. Desired expertise of the staff:
 - i. Good understanding of laboratory biosafety and biosecurity, trained for handling respiratory samples for viral diagnosis
 - ii. Experience of work in virology and handling clinical specimens, especially respiratory samples.
 - d. **A robust Institutional policy on biomedical waste management of human origin.**
 - e. **Well defined arrangement for segregation and discarding of biomedical waste.**
6. In addition to the above, private laboratories which intend to initiate testing using CBNAAT should have NABL accreditation for molecular detection of RNA viruses either by Real Time PCR or by CBNAAT.
7. ICMR guidelines and testing strategy for testing may be strictly followed.
8. Since the guidance evolves periodically, the latest revised version should be followed. Testing laboratories to ensure immediate/ real-time reporting to State officials of IDSP (Integrated Disease Surveillance Program of Govt. of India) for timely initiation of contact tracing. Additionally, as mandated by PMO, a report should also be uploaded on the online portal of ICMR. Each laboratory initiating COVID-19 testing should essentially register on the ICMR portal and get a username and password. Data entry should be ensured on a daily real-time basis.
9. All applications may be submitted by email at: arvind.nccs@gmail.com

**INDIAN COUNCIL OF MEDICAL RESEARCH
NEW DELHI**

May 11, 2020

LIST OF MENTOR INSTITUTES ALONG WITH ALLOCATED STATES:

The following Mentor Institutes have been identified for various States (mentioned in table below). These Institutes are mandated to review the requests for approving any new laboratory for COVID testing

S.No.	Name of the Mentor Institute	States Allocated	Head of the Institute
1.	Post Graduate Institute of Medical Education & Research (PGIMER), Chandigarh	Jammu & Kashmir, Ladakh, Punjab, Haryana, Himachal Pradesh, Chandigarh, Uttarkhand	Prof. Jagat Ram Director, PGIMER, Chandigarh pgimer-chd@nic.in
2.	All India Institute of Medical Science (AIIMS), Delhi	Delhi & Bihar	Dr. Randeep Guleria Director, AIIMS, New Delhi director@aiims.edu
3.	All India Institute of Medical Science (AIIMS), Jodhpur	Rajasthan & Gujarat	Dr. Sanjeev Misra Director, AIIMS, Jodhpur director@aiimsjodhpur.edu.in
4.	Armed Force Medical College (AFMC), Pune	Mumbai & Pune	Lt Gen Nardeep Naithani Director & Commandant, Armed Forces Medical College, Pune coladm.afmc@nic.in
5.	All India Institute of Medical Science (AIIMS), Nagpur	Maharashtra (except Mumbai and Pune) & Goa, Dadra & Nagar Haveli, Daman & Diu	Maj Gen (Dr) Vibha Dutta, SM Director and CEO, AIIMS Nagpur directoraiimsnagpur@gmail.com
6.	National Institute of Mental Health & Neurosciences, Bengaluru	Karnataka	Dr. B. N. Gangadhar Director, NIMHANS, Bengaluru dirstaff@nimhans.ac.in
7.	Sree Chitra Tirunal Institute for Medical Sciences & Technology (SCTIMST), Thiruvananthapuram	Kerala, Andaman & Nicobar Islands, Lakshwadeep.	Dr. Asha Kishore Director, SCTIMST, Thiruvananthapuram Email: director@sctinst.ac.in
8.	Jawaharlal Institute of Postgraduate medical Education & Research (JIPMER), Puducherry	Tamil Nadu, Andhra Pradesh, Telangana, Puducherry	Dr. Rakesh Aggarwal, Director, JIPMER, Puducherry director@jipmer.edu.in

S.No.	Name of the Mentor Institute	States Allocated	Head of the Institute
9.	All India Institute of Medical Sciences (AIIMS), Bhubaneswar	Odisha & West Bengal	Dr. Gitanjali Batmanabane Director, AIIMS, Bhubaneswar director@aiimsbhubaneswar.edu.in
10.	King George Medical University (KGMU), Lucknow	Uttar Pradesh	Dr. M.L.Bhatt Vice Chancellor, KGMU, Lucknow vc@kgmcindia.edu
11.	All India Institute of Medical Sciences (AIIMS), Bhopal	Madhya Pradesh	Prof. Sarman Singh Director & CEO, AIIMS, Bhopal director@aiimsbhopal.edu.in
12.	All India Institute of Medical Sciences (AIIMS), Raipur	Chattisgarh & Jharkhand	Prof. (Dr.) Nitin M. Nagarkar Director, AIIMS, Raipur director@aiimsraipur.edu.in
13.	North- Eastern Indira Gandhi Regional Institute of Health & Medical Science (NEIGRIHMS), Shillong	Assam, Meghalaya, Sikkim, Tripura, Manipur, Mizoram, Arunachal Pradesh, Nagaland	Prof. (Dr.) D. M. Thappa Director, NEIGRIHMS, Shillong director-neigrihms@gov.in
14.	Nizam's Institute of Medical Science (NIMS), Hyderabad	Telangana	Dr. K. Manohar Director director@nims.edu.in, NIMS, Hyderabad

Guidance on rapid antibody kits for COVID-19

Till date, 42 antibody based rapid tests have been validated, and the following were found to be satisfactory. 10 of these kits are manufactured in India.

S.No.	Kit Detail	Lot no./Batch no.
1.	COVID-19 IgM IgG Rapid Test: BioMedomics (CE-IVD)	20200226
2.	New Coronavirus (COVID-19) IgG/IgM Rapid Test: Voxtur Bio Ltd, India	PCCV200301S
3.	COVID-19 IgM/IgG Antibody Detection Card Test: VANGUARD Diagnostics, India	RCOVID200301T
4.	Makesure COVID-19 Rapid test: HLL Lifecare Limited, India	CVCT030420 CVCT0204203 CVCT0104202
5.	YHLO iFlash-SARS-CoV-2 IgM and IgG detection kit (additional equipment required): CPC Diagnostics	20200206
6.	ACCUCARE IgM/IgG Lateral Flow Assay kit: LAB-CARE Diagnostics (India Pvt. Ltd)	CVC 200401
7.	Abchek COVID-19 IgM/IgG Antibody Rapid Test: NuLifecare	NUL/COV-19/R&D/001
8.	One Step Corona Virus (COVID-19) IgM/IgG Antibody Test: ALPINE BIOMEDICALS	A10420 A20420
9.	COVID 19 IgM/IgG Rapid Test Kit; Medsource Ozone Biomedicals (ver 2.0)	COV-002
10.	Immuno Quick Rapid Test for Detection of Novel Coronavirus (COVID-19) IgM/IgG Antibodies: Immuno Science India Pvt. Ltd	E142001
11.	Standard Q Covid -19 IgM/IgG Duo test – One Step Rapid Antibody test: SD Biosensors	E054002 E054004
12.	COVID-19 IgG/IgM Rapid Test Kit Rafael Diagnostic: BMT Diagnostics	COV20030059 COV20030059-1
13.	One Step COVID-19 IgM/IgG Antibody: SIDAK Life Care Pvt. Ltd.	COVID19S004A COVID19S004B COVID19S004C

Rapid antibody tests are not recommended for diagnosis of COVID-19 infection

- Can be done on blood/serum/plasma samples
 - Test result is available within 30 minutes
 - Test may come positive after 7-10 days of infection
 - The test may remain positive for several weeks after infection
 - Positive test indicates exposure to SARS-CoV-2
 - Negative test does not rule out COVID-19 infection
-
- **These rapid antibody test kits have been validated in the laboratory. However, the performance of the kits may be subject to variation under field conditions.**
 - **Above listed kits are validated with the mentioned batch number only. Responsibility for batch to batch consistency lies with the manufacturer.**

Guidance on rapid antibody kits for COVID-19

S.No.	Kit Detail	Lot no./Batch no.
14.	SARS-CoV-2 Antibody test (Lateral flow method): Guangzhou Wondfo Biotech, Mylan Laboratories Limited (CE-IVD) M R Roofs Private Ltd Abbott Laboratories Zydus Cadilla	# W19500309 W19500302 W19500351 W19500338
15.	COVID-19 IgM/IgG Antibody Rapid Test: ZHUHAI LIVZON DIAGNOSTICS (CE-IVD)	# CK2003010410

The marketing licenses to the distributors of these 2 companies have been **cancelled** by the Central Drugs Standard Control Organization (CDSCO).

Antibody based rapid tests which are CE-IVD approved

The complete list of CE-marked rapid SARS-CoV-2 antibody tests is available at (<https://www.finddx.org/covid-19/pipeline/>). CE-IVD approved kits can be used directly after due marketing approval from DCGI.

Guideline for RT-PCR based pooled sampling for migrants/returnees from abroad/green zones

The following guideline is in pursuance of letter of Secretary, MoHFW dated 12th May 2020 on the subject.

A decision has been taken to use one time RT-PCR based pooled sampling for surveillance purposes for migrant workers in institutional quarantine facilities, international passengers in institutional quarantine facilities/hotels ear-marked for quarantine and for surveillance purposes in green zones (districts with no case/no case reported in last 21 days).

The following guidelines would be followed for pooling of samples:

1. A cohort of 25 people will be identified
2. Throat/nasal swab will be collected following laid down protocol by trained laboratory personnel under appropriate protective gear (apron, hand glove, face-shield/goggles, N-95 mask), as per ICMR protocol (available at:
https://www.mohfw.gov.in/pdf/5Sample%20collection_packaging%20%202019-nCoV.pdf)
3. Proper labelling (name/age/gender/specimen ID) needs to be done on specimen container.
4. 25 such samples of such cohort would be packed in triple layer packaging and will be transported to the identified laboratory under cold-chain as per ICMR guidelines, link of which is provided under para -2. The outer container mentioning “be tested for SARS-CoV-2” will also bear the details of sender (name/address/phone number).
5. The samples will be aliquoted and thereafter pooled samples from 25 specimens shall be tested in the laboratory by RT-PCR method.
6. The report will be conveyed to the quarantine/concerned facility within 24 hours.
7. If any of the pooled samples tests positive, individual samples would be tested from the aliquoted samples preserved in the laboratory.



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Indian Council of Medical Research
Department of Health Research, Ministry of Health
and Family Welfare, Government of India

Dated: 14.05.2020

INFORMATION FOR VALIDATION OF KITS FOR COVID-19

Request for validation of RT-PCR/RNA Extraction kits/VTM may be directly sent to ICMR Headquarters, New Delhi to the following email ID:

gstoteja@gmail.com

ICMR will respond to your request and will let you know where you will have to submit the kits for validation.

Additional Director General
ICMR, New Delhi

**INDIAN COUNCIL OF MEDICAL RESEARCH
NEW DELHI**

Date: 08/05/2020

Validation Centres for Diagnostics for COVID-19

SN	Name of the Institute	Head of the Institute	Nodal Person	Validation for
1	ICMR – National Institute of Virology (NIV), Pune	Dr. Priya Abraham Director director.niv@icmr.gov.in	Dr. Varsha Potdar , Scientist D & HOD potdarvarsha9@gmail.com 9890307757	<ul style="list-style-type: none"> • RT-PCR • RNA Extraction Kits • VTM
2	CSIR – Centre of Cellular & Molecular Biology, Hyderabad	Dr. Rakesh K Mishra , Director mishra@ccmb.res.in	Dr. N. Madhusudana Rao Chief Scientist madhu@ccmb.res.in 9949973404	<ul style="list-style-type: none"> • RT-PCR • RNA Extraction Kits • VTM
3	ICMR- National Institute of Malaria Research (NIMR), Dwarka , Delhi	Dr. Amit Sharma Director directornimr@gmail.com	Dr. Himmat Singh , Scientist D himmatpawar@gmail.com 9414242471	<ul style="list-style-type: none"> • RT-PCR • RNA Extraction Kits • VTM
4	ICMR-National Institute of Epidemiology (NIE), Chennai	Dr. Manoj Murhekar Director directornie@icmr.org.in	Dr.C.P.Girish Kumar , Scientist –E girishmicro@gmail.com9840304596	<ul style="list-style-type: none"> • RT-PCR • RNA Extraction Kits • VTM
5	ICMR-National Institute of Virology (NIV), field unit in Bengaluru	Dr. Ashok Office In-charge ashokmniv@gmail.com	Dr. Ashok , Office Incharge ashokmniv@gmail.com 9844250897	<ul style="list-style-type: none"> • RT-PCR • VTM
6	ICMR-Regional Medical Research Centre (RMRC), Bhubaneswar, Odisha	Dr. Sanghmitra Pati Director drsanghamitra12@gmail.com	Dr Jyotirnayee Turuk Scientist C, Microbiology drjyotirmayeetruk@gmail.com 7653915589	<ul style="list-style-type: none"> • RT-PCR • RNA Extraction Kits • VTM
7	ICMR-National Institute for Research in Reproductive Health (NIRRH) , Mumbai	Dr. Smita Mahale Director drsanghamitra12@gmail.com	Dr. Dhanashree Jagtap Scientist 'C' dhanashreedj@rediffmail.com 9321341919	<ul style="list-style-type: none"> • RT-PCR • RNA Extraction Kits • VTM
8	Postgraduate Institute of Medical Education & Research (PGIMER), Chandigarh	Dr. Jagat Ram Director pgimer-chd@nic.in	Prof Mini P Singh Professor of Virology minipsingh@gmail.com; covidmentordrmini@gmail.com 09357784144	<ul style="list-style-type: none"> • RT-PCR • RNA Extraction Kits • VTM
9	King George’s Medical University (KGMU), Lucknow	Dr. M.L.Bhatt Vice Chancellor vc@kgmcindia.edu	Prof. Amita Jain , HoD, Microbiology amita602002@yahoo.com 9415023928	<ul style="list-style-type: none"> • RT-PCR • RNA Extraction Kits • VTM
10	ICMR-Rajendra Memorial Research	Dr. Pradeep Das Director	Dr. Abhik Sen Scientist D abhiksen78@gmail.com	<ul style="list-style-type: none"> • RT-PCR • RNA Extraction Kits • VTM

SN	Name of the Institute	Head of the Institute	Nodal Person	Validation for
	Institute of Medical Science (RMRIMS), Patna	drpradeep.das@gmail.com		
11	ICMR-National Institute of Virology (NIV) field unit in Alapuzha, Kerala	Dr. A.P. Sugunan Scientist 'G' & Officer-in-Charge NIV Kerala Unit Govt. TD Medical College Hospital, Vandanam Alappuzha 688005 Kerala	Dr. A.P. Sugunan Scientist 'G' & apsugunan@gmail.com 9444389233	<ul style="list-style-type: none"> • RT-PCR • RNA Extraction Kits
12	ICMR - National AIDS Research Institute (NARI), Pune	Dr. Samiran Panda , Director	Dr. Vandana Saxena , Scientist - D vsaxena@nariindia.org 8554052508 Dr. Swarali Kurle , Scientist - C skurle@nariindia.org 9881155250	<ul style="list-style-type: none"> • RT-PCR
13	ICMR-National Institute of Pathology (NIP), New Delhi	Dr. Nasreen Z Ehtesham Director- in-Charge nzehtesham@gmail.com	Dr. Usha Agrawal Scientist F ushakaggarwal.nip@gov.in 8810439746	<ul style="list-style-type: none"> • RT-PCR
14	ICMR – National Institute of Cholera and Enteric Diseases (NICED), Kolkata	Dr. Shanta Dutta Director shanta.niced@icmr.gov.in	Dr. Mamta Chawla Sarkar Scientist-F chawlam70@gmail.com 9830660999	<ul style="list-style-type: none"> • RT-PCR • RNA Extraction Kits



भारतीय आयुर्विज्ञान अनुसंधान परिषद
स्वास्थ्य अनुसंधान विभाग, स्वास्थ्य और परिवार
कल्याण मंत्रालय, भारत सरकार

Indian Council of Medical Research
Department of Health Research, Ministry of Health
and Family Welfare, Government of India

Date: 19/05/2020

Revised Guidelines for TrueNat testing for COVID-19

The TrueNat system is now a comprehensive assay for screening and confirmation of COVID-19 cases.

- 1) The sample is collected in viral lysis buffer and hence biosafety and biosecurity requirements for use of TrueNat machines are minimal.
- 2) Assay: The assay comprises of following two steps.
 - A) **Step 1:** This is E gene screening assay. All samples of suspect COVID-19 should be first tested by this assay. All negatives are to be considered as **true negatives**. All positive samples should be subjected to confirmation by step 2 assay.
 - B) **Step 2:** RdRp gene confirmatory assay. All samples that test positive by this assay must be considered as **true positive**.
- 3) No further RT-PCR based confirmation is required for samples that are positive after step 2 of the assay above.
- 4) All positive and negative results must be reported to ICMR portal in real time manner.



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स्वास्थ्य अनुसंधान विभाग, स्वास्थ्य और परिवार
कल्याण मंत्रालय, भारत सरकार

Indian Council of Medical Research
Department of Health Research, Ministry of Health
and Family Welfare, Government of India

Date: 22/05/2020

Advisory for the DBT, DST, CSIR, DAE, ICAR, DRDO Labs

It is hereby notified that ICMR has no objection to initiation of COVID19 testing in Government laboratories operational under the Department of Biotechnology (DBT), Department of Science & Technology (DST), Council of Scientific & Industrial Research (CSIR), Department of Atomic Energy (DAE), Indian Council of Agricultural Research (ICAR) and Defence Research and Development Organisation (DRDO).

Since these research Institutes are of eminence under other research organizations, ICMR will not conduct any site assessment nor accord approval for initiation of testing at these laboratories. Secretary to the Government of India of the concerned Departments may accord approval for initiation of testing as deemed appropriate. Responsibility of these laboratories will lie with the concerned departments and not ICMR.

Caution: SARS-CoV-2 is a high-risk pathogen with high transmissibility and infectivity. Sample handling at too many points and by inadequately trained staff can lead to spills and laboratory outbreaks.

ICMR hereby advises the DBT, DST, CSIR, DAE, ICAR and DRDO laboratories to ensure the following safeguards before initiation of COVID19 testing:

- Availability of BSL-2 level laboratory including a molecular biology setup for virological diagnosis.
- Availability of a functioning and calibrated Biosafety cabinet type 2A/2B in the laboratory.
- Availability of cold centrifuge/microfuge for RNA extraction
- Availability of a functioning and calibrated real-time PCR machine.
- Availability of staff with good understanding of laboratory biosafety and biosecurity, trained for handling respiratory samples for viral diagnosis, RNA extraction and realtime PCR.
- Available staff with experience of work in virology and handling clinical specimens, especially respiratory samples.
- A robust Institutional policy on biomedical waste management of human origin.
- Well defined arrangement for segregation and discarding of biomedical waste.

Additional advice is as follows:

- ICMR advisory on use of commercial kits may also be accessed at www.icmr.gov.in. SoPs available with ICMR will be shared on request.
- Laboratory test should be only offered when the sample is referred by the State health officials or State IDSP.
- ICMR guidelines for testing (available at www.icmr.gov.in) may be strictly followed. Since the guidance evolves periodically, the latest revised version should be followed.
- Testing laboratories to ensure immediate/ real-time reporting to State officials of IDSP (Integrated Disease Surveillance Program of Govt. of India) for timely initiation of contact tracing. Additionally, as mandated by PMO, a report should also be uploaded on the online portal of ICMR. Each laboratory initiating COVID-19 testing should essentially register on the ICMR portal and get a username and password. Data entry should be ensured on a daily real-time basis. Contact points for registration at ICMR are:

support.dmu@bmi.icmr.gov.in

(Kindly note that all data has to be reported to IDSP and ICMR)



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कल्याण मंत्रालय, भारत सरकार
Indian Council of Medical Research
Department of Health Research, Ministry of Health
and Family Welfare, Government of India

Date: May 22, 2020

ICMR has initiated a multi-center clinical trial, titled “A Phase II, Open Label, Randomized Controlled Trial to Assess the Safety and Efficacy of Convalescent Plasma to Limit COVID-19 Associated Complications in Moderate Disease” (PLACID Trial). The PLACID trial protocol has been registered with the Clinical Trial Registry of India (CTRI) and the registration number is CTRI/2020/04/024775. The study has also received approval from the COVID-19 National Ethics Committee (CONEC), vide letter no. CoNEC 002/2020, dated 29th April 2020. The generic protocol for this study has also been approved by the DCGI, CDSCO vide letter no X.11026/78/2020-BD, dated 26th April 2020. The sample size of the study is 452. The clinical trial liability insurance has been bought centrally by ICMR.

ICMR launched a call inviting letters of interest from sites which had the facilities to undertake the study. Expression of interest was received from 113 institutions. As of 22nd May 2020, ICMR has approved the following 46 institutions in the PLACID Trial.

S No.	State/UT	Names of Medical Institutions
1.	Gujarat	Smt. NHL Municipal Medical College, Ahmedabad
2.	Gujarat	B.J. Medical College and Civil Hospital, Ahmedabad
3.	Gujarat	Government Medical College, Bhavnagar
4.	Gujarat	Government Medical College, Surat
5.	Gujarat	Gujarat Medical Education & Research Society Medical College, Vadodara
6.	Gujarat	Sumandeep Vidyapeeth and Institution, deemed to be University & Dhiraj Hospital, Vadodara
7.	Rajasthan	Sawai Man Singh Medical College, Jaipur
8.	Rajasthan	Mahatma Gandhi Medical College and Hospital, Jaipur
9.	Rajasthan	Santokba Durlabhji Memorial Hospital, Jaipur
10.	Rajasthan	Dr. S.N. Medical College, Jodhpur
11.	Rajasthan	All India Institute of Medical Sciences, Jodhpur
12.	Punjab	a. Satguru Pratap Singh Hospital, Ludhiana b. Christian Medical College & Hospital, Ludhiana c. Dayanand Medical College & Hospital, Ludhiana d. Guru Gobind Singh Medical College and Hospital, Faridkot e. Sri Guru Ram Das Institute of Medical Sciences and Research, Amritsar f. Government Medical College, Amritsar

S No.	State/UT	Names of Medical Institutions
		g. Government Medical College, Patiala
13.	Maharashtra	B. J. Government Medical College, Pune
14.	Maharashtra	Sir H. N. Reliance Foundation Hospital and Research Centre, Mumbai
15.	Maharashtra	Rajarshree Chhatrapati Shahu Maharaj Government Medical College and CPR Hospital, Kolhapur
16.	Maharashtra	TMC & BYL Nair Hospital, & Kasturba Hospital, Mumbai
17.	Maharashtra	Government Medical College, Nagpur
18.	Maharashtra	Aditya Birla Memorial Hospital, Pune
19.	Maharashtra	Poona Hospital and Research Center, Pune
20.	Tamil Nadu	Madurai Medical College, Madurai
21.	Tamil Nadu	Madras Medical College, Chennai
22.	Tamil Nadu	Tirunelveli Medical College Hospital, Tirunelveli
23.	Tamil Nadu	Christian Medical College, Vellore
24.	Tamil Nadu	PSG Institute of Medical Sciences & Research, Coimbatore
25.	Puducherry	Jawaharlal Institute of Postgraduate Medical Education & Research, Puducherry
26.	Madhya Pradesh	Gandhi Medical College, Bhopal
27.	Madhya Pradesh	Mahatma Gandhi Memorial Medical College, Indore
28.	Madhya Pradesh	Chirayu Medical College and Hospital, Bhopal
29.	Madhya Pradesh	Sri Aurobindo Institute of Medical Sciences, Indore
30.	Uttar Pradesh	Government Institute of Medical Sciences, Noida
31.	Uttar Pradesh	Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow
32.	Uttar Pradesh	Super Specialty Pediatric Hospital and Post Graduate Teaching Institute, Noida
33.	Uttar Pradesh	King George Medical University, Lucknow
34.	Karnataka	Karnataka Institute of Medical Sciences, Hubli
35.	Karnataka	Mysore Medical College, Mysuru
36.	Karnataka	Hassan Institute of Medical Sciences, Hassan
37.	Karnataka	Mandya Institute of Medical Sciences, Mandya

S No.	State/UT	Names of Medical Institutions
38.	Karnataka	Bangalore Medical College and Research Institute, Bengaluru
39.	Telangana	Gandhi Medical College, Secunderabad
40.	Telangana	ESIC Medical College, Hyderabad
41.	Chandigarh	Postgraduate Institute of Medical Education and Research, Chandigarh
42.	Delhi	Lady Hardinge Medical College, Delhi
43.	Bihar	All India Institute of Medical Sciences, Patna
44.	Haryana	Medanta Medicity, Gurugram
45.	Haryana	ESIC Medical College, Faridabad
46.	Chhattisgarh	All India Institute of Medical Sciences, Raipur

These additional hospitals have applied and are under consideration:

S No.	State/UT	Names of Medical Institutions
1.	Delhi	All India Institute of Medical Sciences, New Delhi
2.	Delhi	Indraprastha Apollo Hospital, New Delhi
3.	Delhi	Batra Hospital and Medical Research Centre, New Delhi
4.	Delhi	Atal Bihari Vajpayee Institute of Medical Sciences and Dr. Ram Manohar Lohia Hospital, New Delhi
5.	Delhi	Max Hospital, Saket, New Delhi
6.	Delhi	Indian Red Cross Society, New Delhi
7.	Haryana	Artemis Hospital, Gurugram
8.	Haryana	Fortis Hospital, Gurugram
9.	Gujarat	M P Shah Government Medical College, Jamnagar
10.	Gujarat	Smt. SMS Multispecialty Hospital, Ahmedabad
11.	Gujarat	Surat Municipal Institute of Medical Education & Research (SMIMER), Surat
12.	Gujarat	Sterling Hospital, Vadodara
13.	Uttar Pradesh	Banaras Hindu University, Varanasi
14.	Uttar Pradesh	Dr. Ram Manohar Lohia Institute of Medical Sciences, Lucknow
15.	Rajasthan	Jindal Super Specialty Hospital, Bharatpur

S No.	State/UT	Names of Medical Institutions
16.	Rajasthan	Government Medical College, Kota
17.	Maharashtra	Tata Memorial Centre ACTREC, Navi Mumbai
18.	Maharashtra	Noble hospital, Pune
19.	Maharashtra	ICMR-National Institute of Immunohematology, Mumbai and KEM Hospital, Mumbai
20.	Maharashtra	Sahyadri Hospitals, Pune
21.	Maharashtra	Dr. Vaishampayan Memorial Govt Medical College, Solapur
22.	Maharashtra	Symbiosis Hospital, Pune
23.	Maharashtra	Fortis Hospitals Ltd. Mulund, Mumbai
24.	Maharashtra	Global Hospital - Super Specialty and Transplant Centre, Parel, Mumbai
25.	Maharashtra	Sir J.J. Mahanagar Raktapedhi, Mumbai
26.	Maharashtra	Apollo Hospital, Navi Mumbai
27.	Maharashtra	Government Medical College, Miraj
28.	Maharashtra	Bombay Hospital & Medical Research Centre
29.	Maharashtra	Lokmanya Tilak Memorial Medical College and Municipal General Hospital, Mumbai
30.	West Bengal	CliniMed Life Sciences Pvt. Ltd, Salt Lake, Kolkata
31.	West Bengal	AMRI Hospitals Salt Lake, Kolkata
32.	West Bengal	Apollo Gleneagles Hospitals, Kolkata
33.	West Bengal	Tata Memorial Center, Kolkata
34.	Tamil Nadu	Vijaya Medical and Educational Trust, Chennai
35.	Tamil Nadu	KMC Specialty Hospital, Trichy
36.	Tamil Nadu	Dr. Rela Institute & Medical Centre, Chennai
37.	Tamil Nadu	Vivek Institute of Laboratory Medicine, Kanyakumari
38.	Tamil Nadu	Gleneagles Global, Chennai
39.	Tamil Nadu	Vivek Laboratories, Nagercoil
40.	Tamil Nadu	Apollo Specialty Hospital- Vanagaram/Chennai
41.	Karnataka	Vydehi Institute of Medical Sciences and Research Centre, Bengaluru

S No.	State/UT	Names of Medical Institutions
42.	Karnataka	Kasturba Medical College, Manipal
43.	Karnataka	Manipal Hospital, Bengaluru
44.	Karnataka	St John's Medical College and Hospital, Bengaluru
45.	Karnataka	Apollo Hospitals (A unit of Imperial Hospital & Research Centre) Banerghatta Road, Bengaluru
46.	Karnataka	Apollo hospitals, Sheshadripuram, Bengaluru
47.	Karnataka	Chamarajanagar Institute of Medical Sciences, Yadapura
48.	Karnataka	Vijayanagar Institute of Medical Sciences, Bellary
49.	Karnataka	Gulbarga Institute of Medical Sciences, Kalaburagi
50.	Madhya Pradesh	R D Gardi Medical College, Ujjain
51.	Madhya Pradesh	All India Institute of Medical Sciences, Bhopal
52.	Madhya Pradesh	Netaji Subhash Chandra Bose Medical College, Jabalpur
53.	Telangana	AIG Hospitals, Gachibowli, Hyderabad
54.	Telangana	Apollo Hospitals, Hyderabad
55.	Uttarakhand	All India Institute of Medical Sciences, Rishikesh
56.	Kerala	Amrita Institute of Medical Sciences and Research Center, Cochin
57.	Kerala	Government Medical College, Kozhikode
58.	Kerala	Malabar Cancer Centre, Thalassery
59.	Kerala	Baby Memorial Hospital, Kozhikode
60.	Kerala	Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram
61.	Kerala	Government Medical College, Thiruvananthapuram
62.	Andhra Pradesh	All India Institute of Medical Sciences, Mangalagiri
63.	Jharkhand	Rajendra Institute of Medical Sciences, Ranchi
64.	Jammu and Kashmir	Sher-i-Kashmir Institute of Medical Sciences, Srinagar

For more technical information please contact:

PLACID Trial Coordinating Team, ICMR

Email: plasmaconvalescenticmr@gmail.com

ICMR Specimen Referral Form for COVID-19 (SARS-CoV2)

INTRODUCTION

This form is for collection centres/ labs to enter details of the samples being tested for Covid-19. It is mandatory to fill this form for each and every sample being tested. It is essential that the collection centres/ labs exercise caution to ensure that correct information is captured in the form.

INSTRUCTIONS:

- ⊙ Inform the local / district / state health authorities, especially surveillance officer for further guidance
- ⊙ Seek guidance on requirements for the clinical specimen collection and transport from nodal officer
- ⊙ This form may be filled in and shared with the IDSP and forwarded to a lab where testing is planned
- ⊙ Fields marked with asterisk (*) are mandatory to be filled

SECTION A – PATIENT DETAILS

A.1 TEST INITIATION DETAILS

* Doctor Prescription: Yes No

(If yes, attach prescription; If No, test cannot be conducted)

* Follow up Sample: Yes No

If Yes, Patient ID:

A.2 PERSONAL DETAILS

* Patient Name:

* Age: Years/Months age <1 yr, pls. tick months checkbox)

* Patient in quarantine facility: Yes No

* Gender: Male Female Others

* Present Village or Town:

* Mobile Number:

* District of Present Residence:.....

* Mobile Number belongs to: Self Family

* State of Present Residence:.....

* Nationality:

* Present patient address:

* Downloaded Aarogya Setu App: Yes No

.....

(These fields to be filled for all patients including foreigners)

Pincode:

Aadhar No. (For Indians):

Passport No. (For Foreign Nationals):

* A.3 SPECIMEN INFORMATION FROM REFERRING AGENCY

* Specimen type Throat Swab Nasal Swab BAL ETA Nasopharyngeal swab

* Collection date

* Sample ID (Label)

* A.4 PATIENT CATEGORY (PLEASE SELECT ONLY ONE)

Cat 1: Symptomatic international traveller in last 14 days.....

Cat 2: Symptomatic contact of lab confirmed case.....

Cat 3: Symptomatic Healthcare worker / Frontline workers

Cat 4: Hospitalized SARI (Severe Acute Respiratory Illness) patient.....

Cat 5a: Asymptomatic direct and high risk contact of lab confirmed case - family member

Cat 5b: Asymptomatic healthcare worker in contact with confirmed case without adequate protection.....

Cat 6: Symptomatic Influenza like Illness (ILI) in Hospital.....

Cat 7: Pregnant woman in / near labour.....

Cat 8: Symptomatic (ILI) among returnees and migrants (within 7 days of illness).....

Cat 9: Symptomatic Influenza Like Illness(ILI) patient in Hotspot / Containment zones.....

Other: (please specify) * (Select "other" only if the patient doesn't belong to category 1-8)

SECTION B- MEDICAL INFORMATION

B.1 CLINICAL SYMPTOMS AND SIGNS

Symptoms: Yes NO If No please go to B.2 section

Symptoms	Yes	Symptoms	Yes	Symptoms	Yes	Symptoms	Yes	Symptoms	Yes
Cough	<input type="checkbox"/>	Diarrhoea	<input type="checkbox"/>	Vomiting	<input type="checkbox"/>	Fever at evaluation	<input type="checkbox"/>	Abdominal pain	<input type="checkbox"/>
Breathlessness	<input type="checkbox"/>	Nausea	<input type="checkbox"/>	Haemoptysis	<input type="checkbox"/>	Body ache	<input type="checkbox"/>		
Sore throat	<input type="checkbox"/>	Chest pain	<input type="checkbox"/>	Nasal discharge	<input type="checkbox"/>	Sputum	<input type="checkbox"/>		

Which of the above mentioned was First Symptom:..... Date of onset of First Symptom: (dd/mm/yy)

B.2 PRE-EXISTING MEDICAL CONDITIONS

Condition	Yes	Condition	Yes	Condition	Yes	Condition	Yes
Chronic lung disease	<input type="checkbox"/>	Malignancy	<input type="checkbox"/>	Heart disease	<input type="checkbox"/>	Chronic liver disease	<input type="checkbox"/>
Chronic renal disease	<input type="checkbox"/>	Diabetes	<input type="checkbox"/>	Hypertension	<input type="checkbox"/>		
Immunocompromised condition: YES <input type="checkbox"/> NO <input type="checkbox"/>				Other underlying conditions:			

B.3 HOSPITALIZATION DETAILS

Hospitalized: Yes <input type="checkbox"/> No <input type="checkbox"/>	Hospital State:
Hospital ID / number <input type="text"/>	Hospital District:
Hospitalization Date: <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/> (dd/mm/yy)	Hospital Name:

B.4 REFERRING DOCTOR DETAILS

*Name of Doctor:	Doctor Mobile No.:
	Doctor Email ID:

* Fields marked with asterisk are mandatory to be filled

TEST RESULT (To be filled by Covid-19 testing lab facility)

Date of sample receipt(dd/mm/yy)	Sample accepted/ Rejected	Date of Testing (dd/mm/yy)	Test result (Positive / Negative)	Repeat Sample required (Yes / No)	Sign of Authority (Lab in charge)



ICMR-DCGI

GUIDELINES FOR VALIDATION AND BATCH TESTING OF COVID-19 DIAGNOSTIC KITS

4 JUNE 2020

DEPARTMENT OF HEALTH RESEARCH
MINISTRY OF HEALTH AND FAMILY WELFARE,
GOVERNMENT OF INDIA



GUIDELINES FOR VALIDATION AND BATCH TESTING OF COVID-19 DIAGNOSTIC KITS

*(This is recommendatory and dynamic document without prejudice to
statutory provisions)*

1. VALIDATION

1.1 RT-PCR Kits

1.1.1 US-FDA approved kits will not require validation.

1.1.2 CE-IVD approved/ Non US-FDA approved/ Indigenous Kits: First batch of kits will require validation from any of ICMR identified validation centres (Annexure I) prior to DCGI approval; thereafter for post marketing; additional two batches should be tested as per medical device rule in four months time.

1.2 RNA Extraction and VTM Kits

1.2.1 US-FDA approved kits will not require validation.

1.2.2 CE-IVD approved/ Non US-FDA approved/ Indigenous Kits: One batch of kits will require validation from any of ICMR identified validation centres prior to DCGI approval.

1.3 Rapid Antibody Test; ELISA and CLIA Kits

1.3.1 US-FDA approved kits will not require validation.

1.3.2 CE-IVD approved/ Non US-FDA approved/ Indigenous Kits: The testing of three batches of kits will be required for validation from any of ICMR identified validation centres prior to DCGI approval.

2. BATCH TESTING FOR RT-PCR, RNA EXTRACTION KITS, VTM, RAPID ANTIBODY TEST, ELISA AND CLIA KITS

2.1 The firm will be required to provide batch testing certificate while delivering the consignment.

2.2 ICMR identified validation centre will undertake random samples testing of batches of kits for quality assurance



3. PROCEDURE FOR VALIDATION

3.1 The requests for validation of kits for RT-PCR; RNA Extraction, VTM, Rapid Antibody Test, ELISA and CLIA will be sent by the manufacturer/supplier through e-mail (**gstoteja@gmail.com**) to **Dr. G. S. Toteja, Additional Director General, ICMR and National Nodal Officer for validation**. The request from the manufacturer/supplier should mandatorily be accompanied with information as per Annexure II

3.2 The request after receipt and scrutiny will be :

3.2.1 Forwarded to any one of the ICMR identified validation centres depending upon the work load and other logistics issue if it is **first time validation**.

3.2.2 If the kit is for second time validation or subsequent validation or in case of any other issue; the manufacturer has to provide justification which will be reviewed at ICMR, New Delhi and decision will be communicated to manufacturer/supplier within a week. The request for re-validation will only be considered if there is any significant change in the composition or type of reagents in the kit.

3.3 Once the kit is delivered to the validation centre with adequate number of test reactions required, reagents, methodology etc; validation report will be sent to the manufacturer/supplier within 15 days.



ANNEXURE I

Centres for Validation and Batch Testing of COVID-19 Diagnostic Kits

S.No	Name of the Institute
ICMR INSTITUTES	
1.	ICMR – National Institute of Virology (NIV), Pune
2.	ICMR- Regional Medical Research Centre (RMRC), Bhubaneswar
3.	ICMR- National Institute for Research in Reproductive Health (NIRRH) , Mumbai
4.	ICMR- Rajendra Memorial Research Institute of Medical Science (RMRIMS), Patna
5.	ICMR- National Institute of Virology (NIV) field unit, Alappuzha
6.	ICMR- National AIDS Research Institute (NARI), Pune
7.	ICMR- National Institute of Pathology (NIP), New Delhi
8.	ICMR - National Institute of Cholera and Enteric Diseases (NICED), Kolkata
9.	ICMR- National Institute for Implementation Research on Non-Communicable Diseases (NIIRNCD), Jodhpur
DBT INSTITUTES	
10.	DBT- Translational Health Science and Technology Institute (THSTI), Faridabad
11.	DBT- International Centre for Genetic Engineering and Biotechnology (ICGEB), New Delhi
12.	DBT- Rajiv Gandhi Centre for Biotechnology (RGCB), Thiruvananthapuram
13.	DBT- Institute of Life Sciences (ILS), Bhubaneswar
14.	DBT- Institute for Stem Cell Science and Regenerative Medicine (InSTEM), Bengaluru
CSIR INSTITUTES	
15.	CSIR- Institute of Genomics and Integrative Biology (IGIB), New Delhi
16.	CSIR- Institute of Microbial Technology (IMTECH), Chandigarh
17.	CSIR- Centre for Cellular & Molecular Biology (CCMB), Hyderabad
OTHERS	
18.	Kasturba Hospital for Infectious Diseases, Mumbai
19.	Institute of Liver and Biliary Sciences, New Delhi
20.	Postgraduate Institute of Medical Education & Research (PGIMER), Chandigarh
21.	King George's Medical University (KGMU), Lucknow
22.	National Institute of Biologicals (NIB), Noida
23.	The King Institute of Preventive Medicine and Research, Chennai
24.	Sawai Man Singh Medical College, Jaipur



ANNEXURE II

FORMAT FOR INFORMATION FOR VALIDATION OF RT-PCR/RNA EXTRACTION KITS/VTM AND RAPID ANTIBODY TEST, ELISA AND CLIA

A. RT-PCR KITS

Name of the Company (manufacturer)	Name of the supplier	Name of the Kit & Batch No.	Multiplex or *Singleplex with no. of genes	First Time Validation by ICMR (Yes/No)	If it is not first time validation	
					Details of last validation along with validation report	Difference in Kit composition as compared to first validation

* Only kit with minimum two gene targets will be considered

B. RNA EXTRACTION KITS

Name of the Company (manufacturer)	Name of the supplier	Name of the Kit & Batch No.	Magnetic or Column Based	First Time Validation by ICMR (Yes/No)	If it is not first time validation	
					Details of last validation along with validation report	Difference in Kit composition as compared to first validation

C. VTM, RAPID ANTIBODY TEST, ELISA AND CLIA

Name of the Company (manufacturer)	Name of the supplier	Name of the KIT & Batch No.	First Time Validation by ICMR (Yes/No)	If it is not first time validation	
				Details of last validation along with validation report	Difference in product as compared to first validation



INDIAN COUNCIL OF MEDICAL RESEARCH
Department of Health Research
(Ministry of Health & Family Welfare)
V Ramalingaswami Bhawan, Post Box 4911,
Ansari Nagar-AIIMS, New Delhi – 110029 Delhi, India
Website: <http://www.icmr.gov.in>



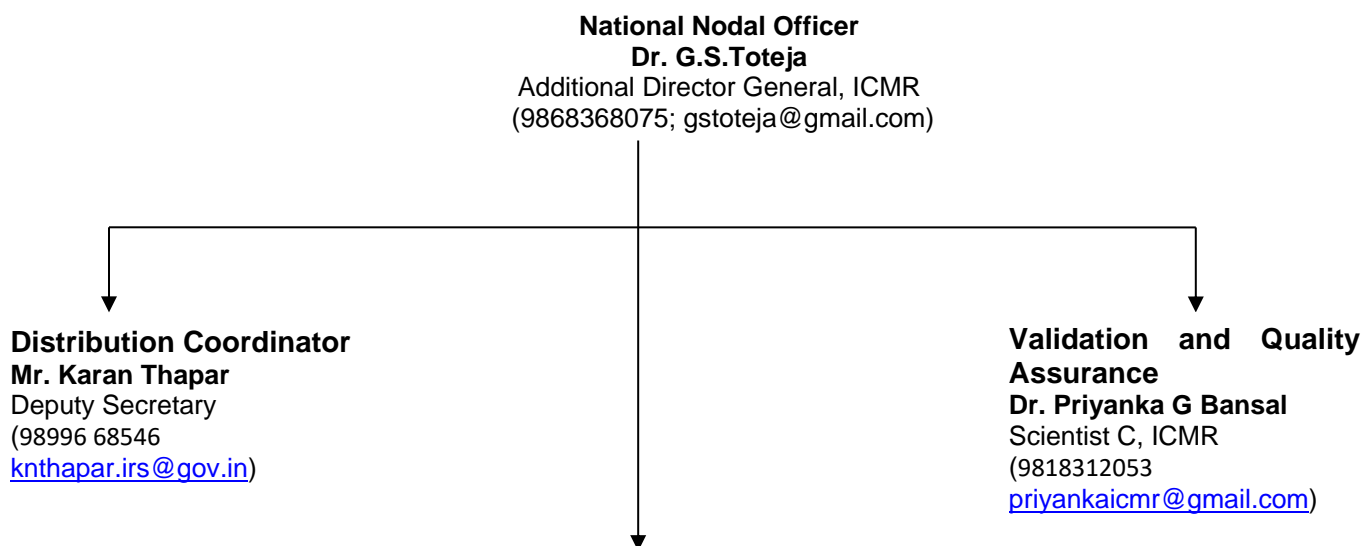
भारतीय आयुर्विज्ञान अनुसंधान परिषद
स्वास्थ्य अनुसंधान विभाग, स्वास्थ्य और परिवार
कल्याण मंत्रालय, भारत सरकार

Indian Council of Medical Research
Department of Health Research, Ministry of Health
and Family Welfare, Government of India

Date: 08/06/2020

OFFICE ORDER

Subject: Details about ICMR depots; distribution; coordination and Validation teams



Regional depots and laboratories covered

DEPOT 1: ICMR- National Institute of Malaria Research (NIMR), Sector 8 Dwarka, Dwarka, New Delhi- 110077
Depot Head: Dr Amit Sharma, Director, ICMR-NIMR (directornimr@gmail.com)

States and Laboratories covered under ICMR-NIMR, New Delhi (35 Laboratories)

State	Name of laboratories	Contact Person
Delhi (14 labs)	<ol style="list-style-type: none">All India Institute Medical SciencesLady Hardinge Medical CollegeNational Centre for Disease ControlRam Manohar Lohia HospitalInstitute of Liver & Biliary SciencesArmy Hospital Research & ReferralMaulana Azad Medical CollegeVardhman Mahavir Medical College & Safdarjung HospitalUniversity College of Medical SciencesArmy Base HospitalIGIB-CSIRRajiv Gandhi Super Speciality Hospital, TaharpurVallabhbhai Patel Chest Institute (VPCI)Defence Institute of Physiology & Allied Sciences (DIPAS), DRDO	<p>Depot Team:</p> <p>*Dr. Ram Das, Scientist C (drdas_3@yahoo.co.in; 9958883739)</p> <p>*Mr. Peeyush Mittal, NIMR (mittalpeeyush1991@gmail.com; 8395959484)</p> <p>*Mr. Anurag Gautam, PWC (9910014097)</p> <p>Central Team at ICMR:</p>



Western U.P. (NCR only) (7 labs)	15. Govt. Institute of Medical Sciences, Noida 16. National Institute of Biologicals, Noida (High throughput Laboratory) 17. Lala Lajpat Rai Memorial Medical College, Meerut 18. Jawaharlal Nehru Medical College, Aligarh 19. SN Medical College, Agra 20. ICMR-National JALMA Institute for Leprosy & Other Mycobacterial Diseases, Agra 21. Superspeciality Pediatrics Hospital and Postgraduate Teaching Institute (SSPHPGTI), Noida 22. College of Veterinary Sciences and Animal Husbandry, UP Pt. Deen Dayal Upadhyaya Pashu Chikitsa Vishwavidyalaya evam Go Anusandhan Sansthan, Mathura	**Dr. Harmanmeet Kaur , Scientist C, ICMR (harmanmeet.kaur@gmail.com ; 9999707557) Mr. Ashok Kumar , IPS, Director Mr. Harsh Nagpal , PWC
Haryana (Other labs of Haryana covered by PGIMER Chandigarh depot) (7 labs)	23. Pt. B.D. Sharma Post Graduate Inst. Of Med. Sciences, Rohtak 24. BPS Govt. Medical College, Sonapat 25. ESIC Hospital, Faridabad 26. Kalpana Chawla Govt. Medical College, Karnal 27. ICAR-National Research Centre on Equines, Hisar 28. Translational Health Science & Technology Institute, Faridabad 29. SHKM, Govt. Medical College, Mewat	
Uttarakhand (5 labs)	30. Govt. Medical College, Haldwani 31. All India Institute of Medical Sciences, Rishikesh 32. Doon Medical College, Dehradun 33. Veer Chandra Singh Garhwali Govt. Institute of Medical Science & Research, Srinagar, Pauri, Garhwal 34. CSIR- Indian Institute of Petroleum, Dehradun	
Rajasthan (Other labs of Rajasthan covered by NIIRNCD, Jodhpur depot) (1 lab)	35. Government Medical College, Bharatpur	

DEPOT 2: Postgraduate Institute of Medical Education & Research (**PGIMER**), **Chandigarh**, Madhya Marg, Sector 12, Chandigarh, 160012

Depot Head: Dr. Jagat Ram, Director, PGIMER, Chandigarh

States and Laboratories covered under PGIMER, Chandigarh (20 Laboratories)

State	Name of laboratories	Contact Person
Punjab (3 Labs)	1. Govt. Medical College, Amritsar 2. Govt. Medical College, Patiala 3. Guru Gobind Singh Medical University, Faridkot	Depot Team: *Dr. Mini P Singh , Professor, Department of Virology, PGIMER (minipsingh@gmail.com ; 9357784144)
Haryana (2 Labs) Other labs covered by NIMR, New Delhi	4. Command Hospital, Chandimandir 5. Government Civil Hospital, Panchkula	
Jammu & Kashmir (6 Labs)	6. Govt. Medical College, Jammu 7. Command Hospital (NC) Udhampur 8. Sher-i-Kashmir Institute of Medical Sciences, Srinagar 9. Govt. Medical College, Srinagar 10. Sheri Kashmir Institute of Medical Science Medical	*Dr. Kapil Goyal , Assistant Professor, PGIMER (kapilgoyalpgi@gmail.com ; 8872288864)

Note:* The laboratory should coordinate with their respective Depot team for any logistic issues. The Depot Team should coordinate with the Central Team at ICMR.

****Person identified for communication at ICMR with the Depot team**



	College, Bemina, Srinagar 11. CSIR Indian Institute of Integrative Medicine, (IIIM), Srinagar	*Mr. Somnath Mitra, PWC 7003252362
Ladakh (1 Lab)	12. Sonam Norboo Memorial Hospital (SNMH), Leh	Central Team at ICMR: **Dr. Tanu Anand, Scientist D, ICMR (drtanu.anand@gmail.com ; 98110 28964) Mr. Ashok Kumar, IPS, Director Mr. Harsh Nagpal, PWC
Himachal Pradesh (5 Labs)	13. Indira Gandhi Medical College, Shimla 14. Dr. Rajendra Prasad Govt. Medical College, Tanda 15. Central Research Institute, Kasauli 16. Shri Lal Bahadur Shastri Govt. Medical College, Mandi 17. CSIR Institute of Himalayan Bioresource Technology, Palampur	
Chandigarh (3 Labs)	18. Postgraduate Institute of Medical Education & Research 19. Govt. Medical College 20. Institute of Microbial Technology	

DEPOT 3: King George's Medical University (**KGMU**), Shah Mina Road, Chowk, **Lucknow, UP**
Depot Head: Prof. M.L. Bhatt, Vice Chancellor (vc@kgmcindia.edu; drmlbhatt@yahoo.com)

States and Laboratories covered under KGMU, Lucknow (15 Laboratories)

State	Name of laboratories	Contact Person
Uttar Pradesh (other than Western UP) (15 Labs)	1. King George Medical University, Lucknow 2. Command Hospital, Lucknow 3. Sanjay Gandhi Post Graduate Institute, Lucknow 4. RML Hospital, Lucknow 5. Institute of Medical Sciences, Banaras Hindu University, Varanasi 6. MLN Medical College, Allahabad 7. BRD Medical College, Gorakhpur 8. MLB Medical College, Jhansi 9. ICMR-Regional Medical Research Centre, Gorakhpur 10. GSVM Medical College, Kanpur 11. Uttar Pradesh University of Medical Sciences, Saifai 12. ICAR- Indian Veterinary Research Institute (IVRI), Izatnagar 13. Central Drug Research Institute, Lucknow 14. Birbal Sahni Institute of Palaeosciences, Lucknow 15. Indian Institute of Toxicology Research, Lucknow	Depot Team: *Prof. Amita Jain, HoD, Microbiology (amita602002@yahoo.com ; 9415023928) *Prof. A.A. Mahdi, HoD, Biochemistry (abbasalimahdi@gmail.com ; 9889838100) Central Team at ICMR: **Dr. N C Jain, Scientist G, ICMR (drencejain@gmail.com ; 9868807284) Mr. Ashok Kumar, IPS, Director Mr. Ankur Mishra, PWC

DEPOT 4: ICMR- National Institute for Research in Environmental Health (**NIREH**), Bhopal Bypass Road, Bhauri
Bhopal-462030, Madhya Pradesh, India
Depot Head: Dr. R. R. Tiwari, Director (tiwari.rr@gov.in)

State and Laboratories covered under ICMR-NIREH, Bhopal (24 Laboratories)

State	Name of laboratories	Contact Person
Madhya Pradesh (14 Labs)	1. All India Institute of Medical Sciences, Bhopal 2. ICMR-National Institute for Research on Tribal Health, Jabalpur 3. Mahatma Gandhi Memorial Medical College, Indore	Depot Team: *Dr. Anil Prakash, Scientist- G (anilprakashin@yahoo.co.in ; 9425403828)

Note:* The laboratory should coordinate with their respective Depot team for any logistic issues.
The Depot Team should coordinate with the Central Team at ICMR.
**Person identified for communication at ICMR with the Depot team



	<ol style="list-style-type: none"> 4. Gandhi Medical College, Bhopal 5. ICMR-Bhopal Memorial Hospital & research Centre, Bhopal 6. Gajra Raja Medical College, Gwalior 7. Bundelkhand Medical College, Sagar 8. SS Medical College, Rewa 9. Defence Research and Development Organization, Gwalior. 10. ICAR-NIHSAD, Bhopal 11. Govt. Medical College, Ratlam 12. Netaji Subhash Chandra Bose Medical College, Jabalpur 13. Govt. Medical College, Khandwa 14. Atal Bihari Vajpayee Government Medical College (ABVGMC), Vidisha 	<p>*Dr. Y. D. Sabde, Scientist- E (sabdeyogesh@gmail.com; 9926329273)</p> <p>Central Team at ICMR: **Dr. N C Jain, Scientist G, ICMR (drencejain@gmail.com; 9868807284)</p> <p>Mr. Ashok Kumar, IPS, Director</p> <p>Mr. Ankur Mishra, PWC</p>
<p>Vidharbha Region (Maharashtra) (10 Labs)</p>	<ol style="list-style-type: none"> 15. Indira Gandhi Govt. Medical College, Nagpur 16. All India Institute of Medical Sciences, Nagpur 17. Govt. Medical College, Nagpur 18. Nagpur Veterinary College, MAFSU, Nagpur 19. Intermediate Reference Laboratory, Nagpur 20. Mahatma Gandhi Institute of Medical Sciences, Sevagram, Wardha 21. Sant Gadge Baba Amravati University, Amravati 22. National Environmental Engineering Research Institute, Nagpur 23. Govt. Medical College, Chandrapur 24. Govt. Medical College, Yavatmal 25. Government Medical College, Gondia 	

DEPOT 5: ICMR-National Institute for Implementation Research on Non-Communicable Diseases (**NIIR-NCD**), New Pali Road, Jodhpur
Depot Head: Dr. G.S.Toteja, Director (gstoteja2019@gmail.com)

State and Laboratories covered under ICMR-NIIR-NCD, Jodhpur (18 Laboratories)

State	Name of laboratories	Contact Person
<p>Rajasthan (Bharatpur lab will be covered by NIMR, New Delhi depot) (18 Labs)</p>	<ol style="list-style-type: none"> 1. Sawai Man Singh Medical College, Jaipur 2. Rajasthan University of Health Sciences, Medical College, Jaipur 3. Dr. Sampurnan and Medical College, Jodhpur 4. Jhalawar Medical College, Jhalawar 5. RNT Medical College, Udaipur 6. SP Medical College, Bikaner 7. All India Institute of Medical Sciences, Jodhpur 8. JLN Medical College, Ajmer 9. Govt. Medical College, Kota 10. ICMR-National Institute for Implementation Research on Non-Communicable Diseases, Jodhpur 11. RVRS Govt. Medical College, Bhilwara 12. Government Medical College, Dungarpur 13. Pandit Deendayal Upadhyaya Medical College, Churu 14. Govt. Medical College, Sikar 15. Govt. Medical College, Barmer 16. Govt. Medical College, Pali 17. Govt. BDK District Hospital, Jhunjhunu 18. Military Hospital, Jaipur 	<p>Depot Team: *Dr. S.S.Mohanty, Scientist E (ssnimr@gmail.com; 8058642995)</p> <p>*Engineer Ramesh Hudda, Scientist B (ramesh.hudda@gmail.com; 9602755600)</p> <p>Central Team at ICMR: **Dr. Hemlata, Scientist C, ICMR (hemlata.jaint@gmail.com; 98187 43598)</p> <p>Mr. Prankur Gupta, IRSS</p> <p>Mr. Abhinav Sharma, PWC</p>

Note:* The laboratory should coordinate with their respective Depot team for any logistic issues. The Depot Team should coordinate with the Central Team at ICMR.
**Person identified for communication at ICMR with the Depot team



DEPOT 6: ICMR- National Institute for Occupational Health (**NIOH**), near Raksha Shakti University, Meghaninagar, Ahmedabad, Gujarat 380016

Depot Head: Dr. Kamalesh Sarkar, Director (director-nioh@gov.in; kamalesh.sarkar@gmail.com)

State and Laboratories covered under ICMR-NIOH, Ahmedabad (20 Laboratories)

State	Name of laboratories	Contact Person
Gujarat (20 Labs)	<ol style="list-style-type: none"> 1. BJ Medical College, Ahmedabad 2. MP Shah Govt Medical College, Jamnagar 3. Govt. Medical College, Surat 4. Govt. Medical College, Bhavnagar 5. Govt. Medical College, Vadodara 6. Govt. Medical College, Rajkot 7. NHL Medical College, Ahmedabad 8. GMERS Medical College, Ahmedabad 9. GMERS Medical College, Gandhinagar 10. GMERS Medical College, Valsad 11. ICMR-National Institute of Occupational Health, Ahmedabad 12. Gujarat Cancer & Research Institute, Ahmedabad 13. Surat Municipal Institute of Medical Education & Research (SMIMER), Surat 14. GMERS Medical College and Hospital, Dharpur Patan 15. Gujarat Adani Institute of Medical Sciences, Bhuj 16. Gujarat Biotechnology Research Center, Gandhinagar 17. Gujarat Forensic Sciences University, Gandhinagar 18. GMERS Medical College, Gotri, Vadodara 19. GMERS Medical College, Himmatnagar 20. Dr. H.L. Trivedi Institute of Transplantation Services, Ahmedabad 	<p>Depot Team:</p> <p>*Dr. P. Sivaperumal, Scientist D (sivaperumal.p@gov.in; sivaperum2003@yahoo.co.in; 9904721778)</p> <p>*Dr Kuldeep Upadhyay, Scientist B (drkuldeep_upadhyay@rediffmail.com; 8780829397)</p> <p>*Mr. Danish Syed, PWC (7977151805)</p> <p>Central Team at ICMR:</p> <p>**Dr. Hemlata, Scientist C, ICMR (hemlata.jaint@gmail.com; 98187 43598)</p> <p>Mr. Prankur Gupta, IRSS</p> <p>Mr. Abhinav Sharma, PWC</p>

DEPOT 7: ICMR-National Institute of Virology (**NIV**), 20-A, Dr Ambedkar Road, Pune

Depot Head: Dr. Priya Abraham, Director (director.niv@icmr.gov.in)

State and Laboratories covered under ICMR-NIV, Pune (17 Laboratories)

State	Name of laboratories	Contact Person
Maharashtra (17 Labs)	<ol style="list-style-type: none"> 1. ICMR-National Institute of Virology, Pune 2. Armed Forces Medical College, Pune 3. BJ Medical College, Pune 4. Command Hospital (SC), Pune 5. Govt. Medical College, Aurangabad 6. V. M. Government Medical College, Solapur 7. Govt. Medical College, Miraj 8. Govt. Medical College, Akola 9. ICMR-National AIDS Research Institute, Pune 10. Swami Ramanand Teerth Marathwada, University, Nanded 11. Vilasrao Deshmukh Govt. Institute of Medical Sciences, Latur 12. RCSI Govt. Medical College, Kolhapur 13. National Center for Cell Sciences, Pune 14. Indian Institute of Science Education and Research (IISER), Pune 15. District General Hospital, Ahmednagar 	<p>Depot Team:</p> <p>*Dr. Varsha Potdar, Scientist D & HOD (Potdarvarsha9@gmail.com; 9890307757)</p> <p>*Mrs Sheetal Jadhav Technical Assistant (sheetalk86@gmail.com; 9011529385)</p> <p>Central Team at ICMR:</p> <p>**Dr. Hemlata, Scientist C, ICMR (hemlata.jaint@gmail.com; 98187 43598)</p>

Note:* The laboratory should coordinate with their respective Depot team for any logistic issues. The Depot Team should coordinate with the Central Team at ICMR.

**Person identified for communication at ICMR with the Depot team



	16. Government Medical College, Baramati 17. Swami Ramanand Teerth Rural Government Medical College, Ambajogai	Mr. Prankur Gupta, IRSS Mr. Abhinav Sharma, PWC
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DEPOT 8: ICMR-National Institute For Research in Reproductive Health (**NIRRH**), J Merwanji St, Parel East, Parel, **Mumbai**, Maharashtra 400012

Depot Head: Dr. Vainav Patel, Scientist E (vainavp@gmail.com)

State and Laboratories covered under ICMR-NIRRH, Mumbai (15 Laboratories)

State	Name of laboratories	Contact Person
Maharashtra (other than Vidharbha) (13 Labs)	1. Seth GS Medical College & KEM Hospital, Mumbai 2. Kasturba Hospital for Infectious Diseases, Mumbai 3. National Institute of Virology Field Unit, Mumbai 4. Grant Medical College & Sir JJ Hospital, Mumbai 5. Shree Bhausahab Hire Govt. Medical College, Dhule 6. Haffkine Institute, Mumbai 7. ICMR-National Institute for Research on Reproductive Health, Mumbai 8. Rajiv Gandhi Medical College & CSM Hospital, Kalwa, Thane, Mumbai 9. INHS Ashvini, Mumbai 10. Tata Memorial Centre ACTREC, Mumbai 11. Tata Memorial Hospital, Mumbai 12. Model Rural Health Research Unit (MRHRU), Sub District Hospital, Agar, Dahanu, Palghar 13. Govt. Medical College, Jalgaon	Depot Team: *Dr Rajendra Katkam , Sr Technical Officer III (katkamrajendra@gmail.com ; +919967416155) *Dr Kiran Munne , Scientist B (dr.kiranmunne@gmail.com ; +919923334435) Central Team at ICMR: **Dr. Hemlata , Scientist C, ICMR (hemlata.jaint@gmail.com ; 98187 43598) Mr. Prankur Gupta, IRSS
Goa (1 Lab)	14. Goa Medical College	Mr. Abhinav Sharma, PWC
Dadra & Nagar Haveli (1)	15. Shri Vinoba Bhave Civil Hospital, Silvassa	

DEPOT 9: ICMR-National Institute of Nutrition (**NIN**), Beside Tarnaka Metro Station, Osmania University, PO, **Hyderabad**, Telangana 500007

Depot Head: Dr. Hemalatha, Director (rhemalathanin@gmail.com)

State and Laboratories covered under ICMR-NIN, Hyderabad (9 Laboratories)

State	Name of laboratories	Contact Person
Telangana (9 Labs)	1. Gandhi Medical College, Secunderabad 2. Osmania Medical College, Hyderabad 3. Sir Ronald Ross of Tropical & Communicable Diseases, Hyderabad 4. Nizam's Institute of Medical Sciences, Hyderabad 5. Institute of Preventive Medicine, Hyderabad 6. ESIC Medical College, Hyderabad 7. Kakatiya Medical College, Nizampura, Warangal 8. Centre for Cellular & Molecular Biology, Hyderabad 9. Centre for DNA Fingerprinting and Diagnostics,	Depot Team: *Dr. B. Dinesh Kumar , Scientist G (nindineshpct@gmail.com ; 9849082088) *Dr. P. Uday Kumar Scientist G (putchaudaykumar@yahoo.com ; 9247339143) Dr. A Laxmaiah , Scientist G (laxmanavula09@gmail.com ; 9395113419) Mr. Nikhil Abraham, PWC (9539804320) Central Team at ICMR:

Note:* The laboratory should coordinate with their respective Depot team for any logistic issues. The Depot Team should coordinate with the Central Team at ICMR.

****Person identified for communication at ICMR with the Depot team**



	Hyderabad	<p>**Dr. Gitika Kharkwal, Scientist C, ICMR (gitikagk7@gmail.com; 7838912620)</p> <p>Mr. S. Rajesh, Director, NITI Aayog</p> <p>Mr. Haider, PWC</p>
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DEPOT 10: ICMR-National Institute of Virology Bangalore Unit (NIV-BU)
Depot Head: Dr. Ashok, Office Incharge (ashokmniv@gmail.com)

State and Laboratories covered under ICMR-NIV Bangalore Unit (28 Laboratories)

State	Name of laboratories	Contact Person
Karnataka (28 Labs)	<ol style="list-style-type: none"> 1. Hassan Inst. Of Med. Sciences, Hassan 2. Mysore Medical College & Research Institute, Mysore 3. Shivamogga Institute of Medical Sciences, Shivamogga 4. Command Hospital (Air Force), Bengaluru 5. Bangalore Medical College & Research Institute, Bengaluru 6. ICMR-National Institute of Virology, Bangalore Field Unit, Bengaluru 7. Gulbarga Institute of Medical Sciences, Gulbarga 8. Vijaynagar Institute of Medical Sciences, Bellary 9. National Institute of Mental Health and Neuro-Sciences, Bengaluru 10. Wenlock District Hospital, Mangalore 11. Karnataka Institute of Medical Sciences, Hubli 12. ICMR-National Institute of Traditional Medicine, Belagavi 13. Dharwad Institute of Mental Health & Neurosciences, Dharwad 14. Kidwai Memorial Institute of Oncology, Bengaluru 15. Mandya Institute of Medical Sciences (MIMS), Mandya 16. Instem, Bengaluru 17. Chamarajanagar Institute of Medical Sciences (CIMS), Chamarajanagar District 18. Indian Institute of Science, Bengaluru (Department of Biochemistry, Centre for Infectious Disease Research) 19. Gadag Institute of Medical Sciences, Gadag 20. Kodagu Institute of Medical Sciences, Kodagu District 21. Government Viral Diagnostic Laboratory, Shimoga District 22. Raichur Institute of Medical Sciences, Raichur 23. Bidar Institute of Medical Sciences, Bidar 24. Koppal Institute of Medical Sciences, Koppal 25. Karwar Institute of Medical Sciences, Karwar 26. Tumkur District Hospital, Tumkur 27. Bowring Lady Curzon Medical College and Research Institute (BLCMRI), Bangalore 28. SNR District Hospital, Kolar 	<p>Depot Team:</p> <p>*Mr Srinivas Vilasagaram (Vilasagar.srinivas@gmail.com; 9581808969)</p> <p>*Mr Basavaraj HM (nivbng@gmail.com; 9739857549)</p> <p>Central Team at ICMR:</p> <p>**Dr. Gitika Kharkwal, Scientist C, ICMR (gitikagk7@gmail.com; 7838912620)</p> <p>Mr. S. Rajesh, Director, NITI Aayog</p> <p>Mr. Haider, PWC</p>

Note:* The laboratory should coordinate with their respective Depot team for any logistic issues.
The Depot Team should coordinate with the Central Team at ICMR.
**Person identified for communication at ICMR with the Depot team



DEPOT 11: ICMR-National Institute of Epidemiology (**NIE**), R 127, 3rd Avenue, 2nd Main Rd, near Ambattur, Ayapakkam, **Chennai**, Tamil Nadu
Depot Head: Dr. Manoj Murhekar, Director (mmurhekar@nieicmr.org.in)

State and Laboratories covered under ICMR-NIE, Chennai (71 Laboratories)

State	Name of laboratories	Contact Person
Tamil Nadu (43 Labs)	<ol style="list-style-type: none"> King Institute of Preventive Medicine & Research, Chennai Madras Medical College, Chennai Stanley Medical College, Chennai Govt. Kilpauk Medical College, Chennai ICMR-National Institute for Research in Tuberculosis, Chennai State Public Health Laboratory, Chennai ICMR-National Institute of Epidemiology, Chennai Dr. MGR Medical University, Chennai Dr. ALM PG Institute of Basic Medical Sciences, Chennai Govt. Medical College & Hospital, Omandurar Govt. Estate, Chennai Govt. Theni Medical College, Theni Tirunelveli Medical College, Tirunelveli Govt. Medical College, Thiruvaur Kumar Mangalam Govt. Medical College, Salem Coimbatore Medical College, Coimbatore Govt. Medical College & ESIC Hospital, Coimbatore Government Medical College, Villipuram Madurai Medical College, Madurai K A P Viswanatham Govt. Medical College, Trichy Perundurai Medical College, Perundurai Govt. Dharmapuri Medical College, Dharmapuri Govt. Medical College, Vellore Thanjavur Medical College, Thanjavur Kanyakumari Govt. Medical College, Nagercoil Govt. Thoothukudi Medical College, Thoothukudi Institute of Vector Control & Zoonoses, Hosur Pasteur Institute of India, Coonoor Rajah Muthiah Medical College, Chidambaram Government Medical College, Karur Govt. Tiruvannamalai Medical College & Hospital, Tiruvannamalai Chengalpattu Government Medical College, Kancheepuram Government Medical College and Hospital, Pudukkottai Government Shivagangai Medical College, Shivagangai Government District Headquarters Hospital, Virrudhu Nagar Government District Headquarters Hospital, Ramanathapuram Government District Headquarters Hospital, Ariyalur Government District headquarter Hospital. Tiruppur Government Kallakruichi Hospital, Kallakurichi Government District Headquarters Hospital, Tiruvallur Government District Headquarters, Namakkal Centre Leather Research Institute, Adyar, Chennai Government Headquarters Hospital, Dindigul C.D Hospital, Greater Chennai Corporation, Chennai Government District Head Quarters Hospital, Nagapattinam 	<p>Depot Team: *Dr.C.P.Girish Kumar, Scientist –E (girishmicro@gmail.com; 9840304596) *Dr.S.M.Jeyakumar, Scientist – E (smikumar@gmail.com; 9440520475) *Mr. Muthu Raman, PWC (9940384010) Central Team at ICMR: **Dr. Gitika Kharkwal, Scientist C, ICMR (gitikagk7@gmail.com; 7838912620) Mr. S. Rajesh, Director, NITI Aayog Mr. Haider, PWC</p>
Puducherry (02 Labs)	<ol style="list-style-type: none"> Jawaharlal Institute of Postgraduate Medical Education & Research, Puducherry Indira Gandhi Medical College, Puducherry 	

Note:* The laboratory should coordinate with their respective Depot team for any logistic issues.

The Depot Team should coordinate with the Central Team at ICMR.

**Person identified for communication at ICMR with the Depot team



Andhra Pradesh (10 labs)	47. Sri Venkateswara Institute of Medical Sciences, Tirupati 48. Rangaraya Medical College, Kakinada 49. Sidhartha Medical College, Vijaywada 50. Govt. Medical College, Ananthpur 51. Guntur Medical College, Guntur 52. Rajiv Gandhi Institute of Medical Sciences, Kadapa 53. Andhra Medical College, Visakhapatnam 54. Govt. Kurnool Medical College, Kurnool 55. Govt. Medical College, Srikakulam 56. Sri Venketeshwar Medical College, Tirupati	
Kerala (14 Labs)	57. National Institute of Virology, Field Unit, Allapuzha 58. Govt. Medical College, Thiruvananthapuram 59. Govt. Medical College, Kozhikode 60. Govt. Medical College, Thrissur 61. Rajiv Gandhi Center for Biotechnology, Thiruvananthapuram 62. Sree Chitra Tirunal Institute of Medical Sciences, Thiruvananthapuram 63. State Public Health Laboratory, Trivandrum 64. Inter University, Kottayam 65. Malabar Cancer Center, Thalassery 66. Central University of Kerala, Periyar, Kasaragod 67. Govt. Medical College, Ernakulum 68. Govt. Medical College, Manjeri 69. Govt. Medical College, Kottayam 70. Govt. Medical College, Kannur	
Andaman and Nicobar (1 Lab)	71. ICMR- Regional Medical Research Centre, Port Blair	

DEPOT 12: ICMR-Rajendra Memorial Research Institute of Medical Sciences (RMRIMS), Agam Kuan, Sadikpur, Patna, Bihar

Depot Head: Dr. Pradeep Das, Director (drpradeep.das@gmail.com)

State and Laboratories covered under ICMR-RMRIMS, Patna (6 Laboratories)

State	Name of laboratories	Contact Person
Bihar (6 Labs)	1. ICMR-Rajendra Memorial Research Institute of Medical Sciences, Patna 2. Indira Gandhi Institute Medical Sciences, Patna 3. Patna Medical College, Patna 4. Darbhanga Medical College, Darbhanga 5. SKMCH, Muzaffarpur 6. All India Institute of Medical Sciences, Patna	Depot Team: *Dr. Ashish Kumar , Scientist C (ashish2k8@gmail.com; 8210353361) *Dr. Manas R Dikhit , ICMR-PDF (manasranjandikhit@gmail.com; 9304657119) Central Team at ICMR: **Dr. Harpreet Sandhu , Scientist F, ICMR (sandhuh.hq@icmr.gov.in; 9810332718) Mr. H S Pahuja , IAS, Deputy Secretary Mr. Pranjal , PWC

Note:* The laboratory should coordinate with their respective Depot team for any logistic issues. The Depot Team should coordinate with the Central Team at ICMR.

****Person identified for communication at ICMR with the Depot team**



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DEPOT 13: ICMR-National Institute for Cholera and Enteric Diseases (**NICED**), P- C.I.T. Scheme XM, 33, CIT Rd, Subhas Sarobar Park, Phool Bagan, Belehghata, **Kolkata**, West Bengal

Depot Head: Dr. Shanta Dutta, Director (drshantadutta@gmail.com)

State and Laboratories covered under ICMR-NICED, Kolkata (20 Laboratories)

State	Name of laboratories	Contact Person
West Bengal (14 Labs)	1. ICMR-National Institute of Cholera & Enteric Diseases, Kolkata 2. Institute of Post Graduate Medical Education & Research, Kolkata 3. Midnapore Medical College, Midnapore 4. North Bengal Medical College, Darjeeling 5. School of Tropical Medicine, Kolkata 6. Malda Medical College & Hospital, Malda 7. Command Hospital, Kolkata 8. Chittaranjan National Cancer Institute, Kolkata 9. R.G. Kar Medical College & Hospital, Kolkata 10. Murshidabad Medical College, Behrampore, Murshidabad 11. Nil Ratan Sircar Medical College, Kolkata 12. Bankura Medical College, Bankura 13. Suri Sadar Hospital, Birbhum 14. Medical College, Kolkata	Depot Team: *Dr. Mamta Chawla Sarkar , Scientist F (chawlam70@gmail.com; 9830660999) *Dr. Provash Chandra Sadhukhan, Scientist E (provash2000@gmail.com; 9830546338) *Mr. Pranavesh Kumar , PWC (9439732199)
Tripura (1 Labs)	15. Govt. Medical College, Agartala	Central Team at ICMR: **Dr. Joy Kumar Chakma , Scientist E, ICMR (drjkna@yahoo.com; 7210660508) Mr. H S Pahuja , IAS, Deputy Secretary Mr. Pranjal , PWC
Jharkhand (4 Labs)	16. MGM Medical College & Hospital, Jamshedpur 17. Rajendra Institute of Medical Sciences, Ranchi 18. Patliputra Medical College & Hospital, Dhanbad 19. Itki Aarogyashala, Ranchi	
Sikkim (1 Lab)	20. IRL, STNM Hospital, Gangtok	

DEPOT 14: ICMR-Regional Medical Research Centre (**RMRC**), NALCO Nagar, Chandrasekharpur, **Bhubaneswar**, Odisha 751023

Depot Head: Dr. Sanghamitra Pati, Director (drsanghamitra12@gmail.com)

State and Laboratories covered under ICMR-RMRC, Bhubaneswar (14 Laboratories)

State	Name of laboratories	Contact Person
Odisha (10 Labs)	1. ICMR-Regional Medical Research Centre, Bhubaneswar (High-throughput Laboratory) 2. All India Institute of Medical Sciences, Bhubaneswar 3. SCB Medical College and Hospital, Cuttack 4. MKCG Medical College, Berhampur 5. Ispat General Hospital, Rourkela 6. Veer Surendra Sai institute of Medical Science & Research, Sambalpur 7. Institute of Life Sciences, Bhubaneswar 8. ICAR- International Centre for Foot and Mouth Disease, Khordha,	Depot Team: *Dr.G Bulliyya , Scientist-F (gbrmrcicmr@gmail.com; 9861321469) *Dr S K Palo , Scientist-D (drpalsubrat@gmail.com; 8763590449)
		Central Team at ICMR:

Note:* The laboratory should coordinate with their respective Depot team for any logistic issues. The Depot Team should coordinate with the Central Team at ICMR.

****Person identified for communication at ICMR with the Depot team**



	<p>Odisha</p> <p>9. Indian Institute of Science Education and Research (IISER), Berhampur</p> <p>10. Bhima Bhoi Medical College and Hospital, Bolangir</p> <p>11. Pandit Raghunath Murmu Medical College, Baripada</p>	<p>**Dr. Harpreet Sandhu, Scientist F, ICMR (sandhuh.hq@icmr.gov.in; 9810332718)</p>
<p>Chhattisgarh (4 Labs)</p>	<p>12. All India Institute of Medical Sciences, Raipur</p> <p>13. Late Baliram Kashyap M Govt. Medical College, Jagdalpur</p> <p>14. JNM Medical College, Raipur</p> <p>15. Late Shri Lakhi Ram Agrawal Memorial Govt. Medical College, Raigarh</p>	<p>Mr. H S Pahuja, IAS, Deputy Secretary</p> <p>Mr. Pranjal, PWC</p>

DEPOT 15: ICMR-Regional Medical Research Centre (**RMRC**), Bokul, Lahowal, Dibrugarh, Assam
Depot Head: Dr. Kanwar Narain, Director (kanwar_narain@hotmail.com)

State and Laboratories covered under ICMR-RMRC, Dibrugarh (5 Laboratories)

State	Name of laboratories	Contact Person
<p>Arunachal Pradesh (1 Lab)</p>	<p>1. Tomo Riba Institute of Health & Medical Sciences, Naharlagun</p>	<p>Depot Team:</p> <p>*Dr. Dipankar Biswas, Scientist F (dbiswas1967@gmail.com; +91-94351-31976)</p>
<p>Upper Assam (4 Labs)</p>	<p>2. ICMR-Regional Medical Research Center, Dibrugarh</p> <p>3. Assam Medical College, Dibrugarh</p> <p>4. Jorhat Medical College, Jorhat</p> <p>5. CSIR North East Institute of Science and Technology (NEIST), Jorhat</p>	<p>*Dr. S.K. Sharma, Scientist G (sksharma.rmcne@gov.in; +91-94351-31953)</p> <p>Central Team at ICMR:</p> <p>**Dr. Joy Kumar Chakma, Scientist E, ICMR (drjkna@yahoo.com; 7210660508)</p> <p>Mr. H S Pahuja, IAS, Deputy Secretary</p> <p>Mr. Pranjal, PWC</p>

DEPOT 16: **Gauhati Medical College and Hospital (GMC)**, Narakasur Hilltop, Bhangagarh, Guwahati, Assam
Depot Head: Prof. Lahari Saikia, HOD, Microbiology (Lahari.saikia@yahoo.com)

State and Laboratories covered under GMC, Guwahati (10 Laboratories)

State	Name of laboratories	Contact Person
<p>Lower Assam (5 Labs)</p>	<p>1. Gauhati Medical College, Guwahati</p> <p>2. Silchar Medical College, Silchar</p> <p>3. Fakkhruddin Ali Ahmed Medical College, Barpeta</p> <p>4. Tezpur Medical College, Tezpur</p> <p>5. Defence Research Laboratory, Tezpur</p>	<p>Depot Team:</p> <p>*Dr. Dina Raja, Associate Professor (dinaraja2016@gmail.com; 9864039629)</p>
<p>Mizoram (1 Lab)</p>	<p>6. Zoram Medical College, Falkhawn, Aizawl</p>	<p>*Dr. Shashank Sekhar, Assistant Professor (drshashank79@gmail.com; 9435033258)</p>
<p>Nagaland</p>	<p>7. State Referral BSL-3 Laboratory, Naga Hospital,</p>	

Note:* The laboratory should coordinate with their respective Depot team for any logistic issues. The Depot Team should coordinate with the Central Team at ICMR.

**Person identified for communication at ICMR with the Depot team



(1 Lab)	Kohima	Central Team at ICMR: **Dr. Joy Kumar Chakma , Scientist E, ICMR (drjkna@yahoo.com; 7210660508) Mr. H S Pahuja , IAS, Deputy Secretary Mr. Pranjal , PWC
Meghalaya (1 Lab)	8. North Eastern Indira Gandhi Regional Institute of Health & Medical Sciences (NEIGRIHMS), Shillong, Meghalaya	
Manipur (2 Labs)	9. Jawaharlal Nehru Institute of Med. Sciences, Imphal East 10. Regional Institute of Medical Sciences, Imphal	

Note:* The laboratory should coordinate with their respective Depot team for any logistic issues. The Depot Team should coordinate with the Central Team at ICMR.

****Person identified for communication at ICMR with the Depot team**



Dated: 11/06/2020

Revised guidelines for positive sample storage by ICMR approved private labs that are doing COVID-19 testing by Real time RT-PCR/CB-NAAT/TrueNat

1. All private labs that are doing COVID-19 testing by Real time RT-PCR/CB-NAAT/TrueNat are to send all positive samples to NIV, Pune as per earlier guidelines (Order no Z 28015/23/2020-EMR, dated 21st March 2020).
2. With the surge in testing across the country, the total number of positive samples has gone up considerably. Keeping this in view, ICMR advises of the following.
 - a) Labs that have been mapped with ICMR validation centres should periodically (on a regular basis) seek the requirements of these centres. The validation centres will tell labs that are mapped with them, to send the required number of positive and negative samples to help such centres validate different kits that become available for validation.
 - b) All labs will send 10 random positive and 5 random negative samples per month to QC labs. ICMR has mapped testing private labs to different QC labs (Annexure I). All testing labs will liaise with the recommended QC labs and will ensure regular participation in QC activity.
 - c) All testing labs will ensure storage of samples at -80C (or at least at -20C) and will ensure regular monthly transfer to QC labs. Don't forget to include your lab name and sample ID. While shipping, place samples in screw capped vials and proper Biosafety and Biosecurity precautions should be followed as per IATA.
 - d) In case of any discordance, additional 5 positive and 3 negative samples will need to be sent for QC check.
 - e) If QC results are concordant, all the samples will be destroyed and labs will keep record of destruction.
 - f) There is no need to send all positive samples to NIV, Pune.



Annexure I

QC lab	All private testing labs in
RMRC, Dibrugarh Contact: Dr. Biswa Borkakoty, Email: biswaborkakoty@gmail.com	Assam
SVMS, Tirupati Contact: Dr. Usha Kalawat, Email: ukalawat@yahoo.com	Andhra Pradesh and Puducherry
RMRIMS, Patna Contact: Dr. Pradeep das, Email: drpradeep.das@gmail.com	Bihar
AIIMS, New-Delhi Contact: Dr. Lalit Dar, Email: lalitdaraiims@gmail.com	Delhi
BJMC, Ahmedabad Contact: Dr. M.M. Vegad, Email: mahendravegad@rediffmail.com	Gujarat
BPS, Sonapat Contact: Dr. Sarita Yadav, Email: yadav78sarita@yahoo.com	Haryana
RIMS, Ranchi Dr. Manoj Kumar, Email: icmrvirologyrim@gmail.com	Jharkhand
AIIMS, Bhopal Dr. Debasis Biswas, Email: debasis.microbiology@aiimsbhopal.edu.in	Madhya Pradesh
NIV Field unit, Bengaluru Contact: Dr. Ashok Email: ashokmniv@gmail.com	Karnataka
NIV Field unit, Allapuzha Contact: A.P. Sugunan, Email: apsugunan@gmail.com	Kerala
Kasturba Hospital for Infectious Diseases, Mumbai. Contact: Dr. Jayanthi Shastri, Email: jsshastri@gmail.com	Mumbai
NIV, Pune Contact: Dr. Varsha Potdar Email: potdarvarsha9@gmail.com	Rest of Maharashtra



QC lab	All private testing labs in
RMRC, Bhubaneswar Contact: Dr. Jyoti Turuk Email: drjyotirmayuturuk@gmail.com	Odisha
PGI, Chandigarh Contact: Dr. Mini Singh Email: minipsingh@gmail.com	Punjab
GMC, Haldwani Contact: Dr. Vinita Rawat, Email: drvinitarawat@gmail.com	Uttarakhand
SMS Medical College, Jaipur Contact: Dr. Bharti Malhotra, Email: drbhartimalhotra@gmail.com	Rajasthan
KIPM, Chennai Contact: Dr. K. Kaveri, Email: kaveri_raj1967@yahoo.com	Tamilnadu
GMC, Secunderabad Contact: Dr. K. Nagamani, Email: nagamaniy2k03@rediffmail.com	Telangana
KGMU, Lucknow Contact: Dr. Amita Jain, Email: amita602002@yahoo.com	UP
NICED, Kolkata Contact: Dr. Shanta Dutta Email: shanta1232001@yahoo.co.in,	West Bengal



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कल्याण मंत्रालय, भारत सरकार

Indian Council of Medical Research
Department of Health Research, Ministry of Health
and Family Welfare, Government of India

Advisory on Use of Rapid Antigen Detection Test for COVID-19

Dated: 14th June 2020

Background:

1. Real time RT-PCR is the gold standard frontline test for diagnosis of COVID19. Various open and closed RT-PCR platforms (Open systems RT-PCR machines, TrueNat and CBNAAT) are currently being used for COVID19 diagnosis in India. All these platforms require specialized laboratory facilities in terms of equipment, biosafety & biosecurity. Minimum time taken for the test varies between different systems with a minimum of 2-5 hours including the time taken for sample transportation. These specifications limit the widespread use of the RT-PCR test and also impedes quick augmentation of testing capacity in various containment zones and hospital settings.
2. In view of this, there is urgent need of a reliable point-of-care rapid antigen detection test with good sensitivity and specificity for early detection of the disease.
3. There are no reliable antigen detection tests available worldwide, which could be used as rapid point of care tests for quick detection of COVID-19 positive patients. Such tests would help in proper implementation of the Govt. strategy to test, track and treat. Such tests will also help in allaying the anxiety and fear of healthcare workers and aid in better clinical management of the patients. In view of this, an independent two site evaluation of the only available or standalone antigen detection assay: **Standard Q COVID-19 Ag detection kit**, was conducted with an aim to evaluate its sensitivity, specificity and feasibility of use as a point-of-care test for early detection of SARS-CoV-2.

4. Brief description of the Standard Q COVID-19 Ag detection:

- i) **Standard Q COVID-19 Ag detection kit** is a rapid chromatographic immunoassay for qualitative detection of specific antigens to SARS-CoV-2. has been developed by SD Biosensor, a South Korea based company, having its manufacturing unit in Manesar, Gurugram, India.
- ii) Each test kit comes with an inbuilt COVID antigen test device, viral extraction tube with viral lysis buffer and sterile swab for sample collection.
- iii) One Nasopharyngeal swab needs to be collected using the customized sample collection swab provided with the kit. No other sample (throat swab, bronchoalveolar lavage or sputum) should be used.
- iv) After sample collection, the swab should be immersed and squeezed in the viral extraction buffer, provided with the kit. This buffer inactivates the virus thereby reducing biosafety and



biosecurity requirements. The test does not work if the sample is collected in the usual Viral Transport Media (VTM), routinely used for collection of OP/NP swabs.

- v) Once the sample is collected in the extraction buffer, it is stable only for one hour. Therefore, the antigen test needs to be conducted at the site of sample collection in the healthcare setting. Transportation to the lab is not recommended.
- vi) Once the sample goes into the buffer and is mixed properly, the buffer tube cap needs to be replaced with a nozzle provided with the kit and 2-3 drops of the sample with buffer are put into the well of the test strip.
- vii) The test can be interpreted as positive or negative after 15 minutes of putting the sample into the well by appearance of test and control lines, which can be read with a naked eye, requiring no specialized equipment. Maximum duration for interpreting a positive or negative test is 30 minutes. After that the test strip should be discarded.
- viii) The test kit should be stored between 2° to 30° C.
- ix) Detailed instructions for use can be accessed through the video link: <https://youtu.be/mBdaOHJWxI4>

5. Validation of the Test:

I. Sites:

Standard Q COVID-19 Ag detection assay by SD Biosensor was evaluated independently by the following agencies:

- i) Indian Council of Medical Research, Delhi; and
- ii) All India Institute of Medical Sciences, Delhi

II. Results:

- i) Standard Q COVID-19 Ag rapid antigen detection test has a very high specificity (i.e. ability to detect true negatives). Specificity ranged from 99.3 to 100% at the two sites.
- ii) Sensitivity of the test (i.e. ability to detect true positives) ranged from 50.6% to 84% in two independent evaluations, depending upon the viral load of the patient. Higher viral load correlated with higher sensitivity.

6. Conclusions and Recommendations:

- i) Standard Q COVID-19 Ag detection assay by SD Biosensor is the standalone antigen detection test which is available in India and has been validated.
- ii) ICMR encourages other manufacturers / developers who have antigen detection assays to come forward for validation.



iii) **In view of its high specificity while relatively low sensitivity, ICMR recommends the use of Standard Q COVID-19 Ag detection assay as a point of care diagnostic assay for testing in the following settings in combination with the gold standard RT-PCR test:**

A. Containment zones or hotspots (to be performed onsite under strict medical supervision and maintaining kit temperature between 2° to 30° C.):

- i) All symptomatic Influenza Like Illness (ILI).
- ii) Asymptomatic direct and high-risk contacts with co-morbidities (lung disease, heart disease, liver disease, kidney disease, diabetes, neurological disorders, blood disorders) of a confirmed case to be tested once between day 5 and day 10 of coming into contact.

B. Healthcare settings (to be performed onsite under strict medical supervision and maintaining kit temperature between 2° to 30° C):

- i) All symptomatic ILI patients presenting in a healthcare setting and are suspected of having COVID19 infection.
- ii) Asymptomatic patients who are hospitalized or seeking hospitalization, in the following high-risk groups:
 - Patients undergoing chemotherapy
 - Immunosuppressed patients including those who are HIV+;
 - Patients diagnosed with malignant disease;
 - Transplant patients;
 - Elderly patients (>65 yrs of age) with co-morbidities (lung disease, heart disease, liver disease, kidney disease, diabetes, neurological disorders, blood disorders)
- iii) Asymptomatic patients undergoing aerosol generating surgical / non-surgical interventions:
 - Elective/emergency surgical procedures like neurosurgery, ENT surgery, dental procedures;
 - Non-surgical interventions like bronchoscopy, upper GI endoscopy and dialysis;

***ILI case is defined as one with acute respiratory infection with fever $\geq 38^{\circ}\text{C}$ AND cough.**

Use of the rapid antigen test is recommended in A & B categories above subject to the following conditions:

- i) **Suspected individuals who test negative for COVID-19 by rapid antigen test should be definitely tested sequentially by RT-PCR to rule out infection, whereas a positive test should be considered as a true positive and does not need reconfirmation by RT-PCR test.**
- ii) Samples (only nasopharyngeal swabs) to be collected by a trained healthcare worker following full infection control practices including use of proper PPE.
- iii) The test should be conducted **onsite** under strict medical supervision and within one hour of sample collection in extraction buffer.



Date: 19/06/2020

Guidance on rapid antibody kits for COVID-19

Till date, 56 antibody based rapid tests have been validated, and the following were found to be satisfactory. 11 of these kits are manufactured in India.

S.No.	Name of Company	Name of Kit	Lot no./Batch no.
1.	BioMedomics (CE-IVD), China	Biomedomics COVID-19 IgM IgG Rapid Test	20200226
2.	Voxtur Bio Ltd, Surat (Gujarat), India	Coronavirus (COVID-19) IgG/IgM Rapid Test	PCCV200301S
3.	VANGUARD Diagnostics, Delhi, India	COVID-19 IgM/IgG Antibody Detection Card Test	RCOVID200301T
4.	HLL Lifecare Limited, Gurugram (Haryana) India	Makesure COVID-19 Rapid test	CVCT030420 CVCT0204203 CVCT0104202
5.	Lab Care Diagnostics India Pvt. Ltd, Mumbai (Maharashtra), India	ACCUCARE IgM/IgG Lateral Flow Assay kit	CVC 200401
6.	NuLifecare, Noida (Uttar Pradesh), India	Abchek COVID-19 IgM/IgG Antibody Rapid Test	NUL/COV-19/R&D/001
7.	Alpine Biomedicals, Ambala (Haryana), India	One Step Corona Virus (COVID-19) IgM/IgG Antibody Test	A10420 A20420
8.	Medsorce Ozone Biomedicals, Haryana, India	COVID 19 IgM/IgG Rapid Test Kit (ver 2.0)	COV-002
9.	Immuno Science India Pvt. Ltd, Pune (Maharashtra), India	Immuno Quick Rapid Test for Detection of Novel Coronavirus (COVID-19) IgM/IgG Antibodies	E142001
10.	SD Biosensors, Healthcare Pvt. Ltd., Gugugram (Haryana), India	Standard Q Covid -19 IgM/IgG Duo test – One Step Rapid Antibody test	E054002 E054004
11.	BMT Diagnostics (Rafael Diagnostic), Israel	BMT COVID-19 IgG/IgM Rapid Test Kit	COV20030059 COV20030059-1
12.	SIDAK Life Care Pvt. Ltd., New Delhi, India	One Step COVID-19 IgM/IgG Antibody	COVID19S004A COVID19S004B COVID19S004C
13.	Diagnocure, Solan (Himachal Pradesh), India	Xamin COVID-19 Rapid Test Device	DI/COV19/R&D/001 DI/COV19/R&D/002

Rapid antibody tests are not recommended for diagnosis of COVID-19 infection

- Can be done on blood/serum/plasma samples
 - Test result is available within 30 minutes
 - Test may come positive after 7-10 days of infection
 - The test may remain positive for several weeks after infection
 - Positive test indicates exposure to SARS-CoV-2
 - Negative test does not rule out COVID-19 infection
- **These rapid antibody test kits have been validated in the laboratory. However, the performance of the kits may be subject to variation under field conditions.**
 - **Above listed kits are validated with the mentioned batch number only. Responsibility for batch to batch consistency lies with the manufacturer.**



Date: 19/06/2020

Guidance on rapid antibody kits for COVID-19

S. No.	Kit Detail	Lot no./Batch no.
14.	SARS-CoV-2 Antibody test (Lateral flow method): Guangzhou Wondfo Biotech Mylan Laboratories Limited (CE-IVD) M R Roofs Private Ltd Abbott Laboratories Zydus Cadilla	# W19500309 W19500302 W19500351 W19500338
15.	COVID-19 IgM/IgG Antibody Rapid Test: ZHUHAI LIVZON DIAGNOSTICS (CE-IVD)	# CK2003010410

The marketing licenses to the distributors of these 2 companies have been **cancelled** by the Central Drugs Standard Control Organization (CDSCO).

Antibody based rapid tests which are US-FDA approved can be used directly after due marketing approval from DCGI.



सत्यमेव जयते

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एफएएचए, एफएएमएस, एफएनएएस, एफएएससी, एफ.एन.ए., डी.एस.सी.

सचिव, भारत सरकार

स्वास्थ्य अनुसंधान विभाग

स्वास्थ्य एवं परिवार कल्याण मंत्रालय एवं

महानिदेशक, आई सी एम आर

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New Delhi - 110 029

DO.No.ECD/COVID19/Misc./2020

Dated 19th June 2020

Subject: Ramping up testing for COVID-19 in containment zones and hospitals.

Dear (Chief Secretaries of all states)

1. Real Time RT-PCR is the gold standard test for detecting cases of COVID-19. The test requires specialized laboratory setup with specific biosafety and biosecurity precautions to be followed. Average time taken is around 4-5 hours from receipt of sample to getting the result. The advantage of this platform lies in its accuracy of detection as well as ability to run upto 90 samples in a single run. However, in view of the specialized laboratory requirements, this test cannot be performed at every district level labs which do not have molecular virology facilities.
2. The TrueNat and CBNAAT systems have also been deployed for diagnosis of COVID-19 in view of availability of customized cartridges for COVID-19 diagnosis. These platforms have widespread availability even at district and PHC as these platforms are widely used for diagnosis of Tuberculosis as well as other infectious diseases. These platforms have a quick turnaround time (30 -60 minutes) but only 1-4 samples can be tested in one run, limiting the maximum numbers that can be tested to 24-48 samples / day. The viral lysis buffer that comes with the COVID-19 cartridges inactivates the virus and poses minimum biosafety hazard. Safety is further augmented by the closed nature of these platforms and minimum sample handling. These features have facilitated use of these platforms at grass root level thereby increasing access to testing.
3. In an effort to ramp up the testing capacity, ICMR has approved a total of 960 labs in public and private sector. However, inspite of these developments in testing, there is an urgent need to introduce rapid point of care diagnostic tests to make testing widely available in all parts of the country.
4. Rapid antigen-based detection assays have been used successfully for early diagnosis of diseases like Malaria, Leishmania, viral and bacterial respiratory infections etc. Such tests can be used as point of care diagnostics in field settings and have minimal biosafety and biosecurity requirements. In view of this, ICMR had been exploring alternate quick and reliable options for diagnosis of COVID-19.

5. ICMR and AIIMS, Delhi independently evaluated the stand-alone rapid point of care antigen detection assay for quick diagnosis of SARS-CoV-2 developed by SD Biosensor with manufacturing unit at Manesar, Gurugram. The assay is known as **Standard Q COVID-19 Ag kit**. On validation, the test has been found to have a very high specificity with moderate sensitivity. ICMR now also recommends use of Standard Q COVID-19 Ag detection test as a point of care diagnostic assay for testing in the containment zones as well as hospitals in combination with the gold standard RT-PCR test. ICMR has issued an advisory dated 14th June 2020. In this regard, which may be accessed at: [https://www.icmr.gov.in/pdf/covid/strategy/Advisory for rapid antigen test 14062020.pdf](https://www.icmr.gov.in/pdf/covid/strategy/Advisory%20for%20rapid%20antigen%20test%2014062020.pdf). The advisory clearly delineates the recommended groups of individuals who should be tested using the antigen detection assay. Key points in the advisory are enclosed as Annexure 1 for your perusal.

6. **Standard Q COVID-19 Ag kit** is available with the local vendor of SD Biosensor. Contact details are as follows:

Dr. CS Bedi

Mobile No: +919810426069

Email: drbedi@icloud.com

ICMR has negotiated the price of the kit. The upper price cap negotiated by the Committee is Rs. 450/-.

For any technical assistance /clarifications, details of the ICMR contact point are given below:

Dr. Sidhartha Giri, Scientist E, ICMR

Mobile No: +918754617892

Email: sidhartha.g@icmr.gov.in

7. **Kindly note that in addition to the details of all the tests conducted by the RT-PCR, TrueNat, CBNAAT, results of Antigen detection assay also need to be entered into the existing ICMR data entry portal where a separate field has been incorporated to accommodate all testing data emerging through the rapid antigen test.**
8. In addition, vide earlier letter No. dated from Secy DHR & DG to all states, ICMR has advised states on use of IgG antibody assays for conducting serosurveys in asymptomatic frontline workers like healthcare workers, sanitation workers, security staff etc. for assessing their serostatus for COVID-19. Guidance of ICMR on the list of available ELISA and CLIA kits can be accessed at [https://www.icmr.gov.in/pdf/covid/kits/ELISA CLIA Kits List 03062020.pdf](https://www.icmr.gov.in/pdf/covid/kits/ELISA%20CLIA%20Kits%20List%2003062020.pdf). As the apex research organization of the country, ICMR is mandated to review and conduct research on the evolving trends of the disease and accordingly advise the states / country on the public health policies. In view of this, I advise you to share all the antibody testing results with ICMR at the email id given below: mmurhekar@gmail.com.
9. Since test, track and treat is the only way to prevent spread of infection and save lives, it is imperative that testing should be made widely available to all symptomatic individuals in every part of the country and contact tracing mechanisms for containment of infection are further strengthened. Therefore, it is advised that all the patients who are being tested by any of the above methods, may be requested to share one personal Identity, issued by Govt. of India to establish the authenticity of the individual. Also, it has been noted that the phone numbers shared by individuals at the time of testing are often

incorrect. Therefore, it is advisable that at the time of testing, a missed call should be given on the shared phone number to verify its correctness,

10. In view of this, I request you all to kindly take required steps to scale up the testing capacity in your respective state by adopting various available testing options, making testing available to all symptomatic individuals in your state. This will enable early detection and containment of infection which in turn would save several lives.

With regards,

Yours sincerely,

Balram Bhargava
(Balram Bhargava)

Copy to:

1. Smt. Preeti Sudan, Secretary (HFW), MOHFW, New Delhi
2. Shri Rajesh Bhushan, OSD, MOHFW, New Delhi
3. All Health Secys of States / UTs

Key points to remember for use of COVID-19 quick antigen detection assay:

- Minimum time taken for RT-PCR test is 2-5 hours.
- Antigen detection test is a rapid point of care test and has no specialized laboratory requirements.
- One nasopharyngeal swab is to be collected and tested **onsite within one hour of sample collection.**
- Sample collection and testing is to be performed by a trained health care worker with proper PPE.
- Can be interpreted between 15 to 30 minutes with a naked eye.
- Kit needs to be stored between 2° to 30° C.

Rapid antigen detection test for COVID 19 can be used to test individuals in the following categories:

A. Containment zones or hotspots:

- i) All symptomatic Influenza Like Illness (ILI).
- ii) Asymptomatic direct and high-risk contacts (with co-morbidities) of a lab confirmed case.

B. Healthcare settings:

- i) All symptomatic ILI patients presenting in a healthcare setting and are suspected of having COVID19 infection.
- ii) Asymptomatic patients in high risk groups: undergoing chemotherapy; immunosuppressed patients; patients suffering with malignant disease; transplant patients; elderly patients (>65 yrs of age) with co-morbidities
- iii) Asymptomatic patients undergoing aerosol generating surgical / non-surgical interventions like elective/emergency surgical procedures: Neurosurgery, ENT surgery, dental procedures; and non-surgical interventions like bronchoscopy, upper GI endoscopy and dialysis;

Interpretation of the test:

Symptomatic Individuals who test negative by the antigen test should be definitely tested sequentially by RT-PCR to rule out COVID19 infection, whereas a positive test should be considered as a true positive and does not need reconfirmation by RT-PCR test.



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कल्याण मंत्रालय, भारत सरकार

Indian Council of Medical Research
Department of Health Research, Ministry of Health
and Family Welfare, Government of India

ADVISORY

Newer Additional Strategies for COVID-19 Testing

Dated: 23/06/2020

Existing strategies for COVID-19 testing:

1. **Real Time RT-PCR** is the gold standard test for detecting cases of COVID-19. The test requires specialized laboratory setup with specific biosafety and biosecurity precautions to be followed. Average time taken is around 4-5 hours from receipt of sample to getting the result. The advantage of this platform lies in its accuracy of detection as well as ability to run upto 90 samples in a single run. In view of the specialized laboratory requirements, this test cannot be performed at every district level lab which do not have molecular virology facilities. However, wherever available, it is advised to use real time RT-PCR as the frontline test for diagnosis of SARS-CoV-2.
2. **The TrueNat and CBNAAT** systems have also been deployed for diagnosis of COVID-19 in view of availability of customized cartridges. These platforms have widespread availability even at district and primary health center level as these platforms are widely used for diagnosis of Tuberculosis and other infectious diseases. These platforms have a quick turnaround time (30 -60 minutes) but only 1-4 samples can be tested in one run, limiting the maximum numbers that can be tested to 24-48 samples / day only. The viral lysis buffer that comes with the COVID-19 cartridges inactivates the virus and poses minimum biosafety hazard. Safety is further augmented by the closed nature of these platforms and minimum sample handling. These features have facilitated use of these platforms at grass root level thereby increasing access to testing.
3. All COVID-19 tests conducted through RT-PCR, TrueNat and CBNAAT are reported on ICMR data entry portal which helps in drawing the National estimates on numbers of tests conducted, numbers of positives, tests conducted per million population etc. This data portal is the single National source of data entry which is accessed by all relevant Ministries / Departments for defining National strategies for COVID-19. ICMR urges all the laboratories to continue entering data into the ICMR portal <https://cvstatus.icmr.gov.in/login.php> to help in guiding the National strategies appropriately.
4. In an effort to ramp up testing capacity, ICMR has approved a total of 1000 COVID-19 testing labs in both public (730) and private sector (270). This includes RT-PCR labs (557); TrueNat Labs (363) and CBNAAT Labs (80). However, inspite of these developments, access to testing still remains a huge challenge in a large country like India. There is a definite need to increase the outreach of testing by introducing rapid point of care diagnostic tests. Also, there is value in conducting serosurveys with IgG based antibody tests in certain situations. In view of this, it is now suggested to include additional testing methods to improve the access and availability of testing in various parts of the country.



Newer additional strategies for COVID-19 Testing:

1. Rapid Point-of-Care (PoC) Antigen Detection Test (for diagnosis along with RT-PCR):

5. Since the entire public health machinery is focused to test, track and treat COVID-19 patients, it is imperative to explore the existing antigen-based assays as point-of-care tests for early detection of SARS-CoV-2. Such tests, if reliable would be valuable at field level for early detection of infection and quick containment. Availability of antigen-based detection tests is very limited all across the world. Most of such tests have relatively **moderate sensitivity but high specificity**. However, manufacturers of all antigen-based tests are encouraged to approach ICMR for validation and inclusion of their test in the wider testing approach of the country. A positive test should be considered as a true positive whereas all symptomatic individuals testing negative through the rapid antigen test should be confirmed with a real-time PCR test.
6. ICMR and AIIMS, Delhi independently evaluated the stand-alone rapid point of care antigen detection assay which **does not require a specialized machine** and can be interpreted with a naked eye. The test is a promising tool for quick diagnosis of SARS-CoV-2 in field settings. The assay is known as **Standard Q COVID-19 Ag kit** and has been developed by SD Biosensor with manufacturing unit at Manesar, Gurugram. On validation, the test has been found to have a very high specificity with moderate sensitivity. It is now recommended to use Standard Q COVID-19 Ag detection test as a point of care diagnostic assay for testing in the containment zones as well as hospitals in combination with the gold standard RT-PCR test. ICMR has issued an advisory dated 14th June 2020 in this regard, which may be accessed at: [https://www.icmr.gov.in/pdf/covid/strategy/Advisory for rapid antigen test 14062020.pdf](https://www.icmr.gov.in/pdf/covid/strategy/Advisory%20for%20rapid%20antigen%20test%2014062020.pdf). The recommended use of the rapid antigen PoC as per the ICMR advisory is enclosed at **Annexure 1**.
7. **Standard Q COVID-19 Ag kit** is available with the local vendor of SD Biosensor.
Contact details are as follows:
Dr. CS Bedi.
Mobile No: +919810426069; Email: drbedi@icloud.com
- For any technical assistance /clarifications, details of the ICMR contact point are given below:
Dr. Sidhartha Giri
Mobile No: +918754617892; Email: sidhartha.g@icmr.gov.in

ICMR recommends deployment of the rapid antigen PoC test in the following settings:

- i) All containment zones identified by the State Governments,
- ii) All Central & State Government Medical Colleges and Government hospitals
- iii) All private hospitals approved by National Accreditation Board for Hospitals & Healthcare (NABH).
- iv) All private labs accredited by National Accreditation Board for Laboratories (NABL) and approved by ICMR as COVID-19 testing labs.



Rapid antigen PoC test is recommended for use subject to the following conditions:

- i) All hospitals, labs, State Govts intending to perform the **PoC antigen test need to register with ICMR to obtain the login credentials for data entry. Interested Institutions may send their request on the following email id's:**

ag-pvthosp-nabh@icmr.gov.in

ag-govthosp@icmr.gov.in

- ii) All data of testing needs to be entered into the ICMR portal on a real time basis. The ICMR portal has been modified to include a component on antigen testing. Detailed video is available on ICMR website at http://www.icmr.gov.in/video/Data_Entry_Antigen_v4.mp4.
- iii) **All labs/hospitals initiating testing** through the rapid antigen PoC test need to ensure that **all symptomatic negative patients should be essentially referred to a real-time RT-PCR test for COVID-19**. This is particularly essential as the rapid antigen PoC test has a moderate sensitivity.
- iv) All the entities using antigen PoC test are expected to tie up with the nearest RT-PCR COVID-19 testing lab to ensure that all symptomatic who are negative by the rapid antigen test get tested at the nearest facility.
- v) The data of individuals tested by RT-PCR will need to be entered through the lab performing the RT-PCR test.

II. IgG Antibody test for COVID-19 (Only for surveillance and not diagnosis):

8. IgG antibodies generally start appearing after two weeks of onset of infection, once the individual has recovered after infection and last for several months. Therefore, the IgG test is not useful for detecting acute infection. However, detection of IgG antibodies for SARS-CoV-2 may be useful in the following situations:
- Serosurveys to understand the proportion of population exposed to infection with SARS-CoV-2 including asymptomatic individuals. Depending upon the level of seroprevalence of infection, appropriate public health interventions can be planned and implemented for prevention and control of the disease. Periodic serosurveys are useful to guide the policy makers.
 - Survey in high risk or **vulnerable populations (health care workers, frontline workers, immunocompromised individuals, individuals in containment zones etc)** to know who has been infected in the past and has now recovered. The groups of individuals who should be prioritized for such serosurveys is enclosed at **Annexure 2**.
9. It is strictly advised to use IgG based ELISA and CLIA assays only for conduct of serosurveys. ICMR has validated and approved IgG ELISA kits for COVID-19. In addition, USFDA approved IgG ELISA and CLIA kits are also available and can be used. Guidance of ICMR on the list of available ELISA and CLIA kits can be accessed at https://www.icmr.gov.in/pdf/covid/kits/ELISA_CLIA_Kits_List_03062020.pdf. It is advised to enable all **Government and Private Hospitals, Offices, Public Sector Units etc. to perform the antibody-based testing**. This will help in allaying the fear and anxiety of health care workers, office employees etc. As the apex research organization of the country, ICMR is mandated to review and



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conduct research on the evolving trends of the disease and accordingly advise the states / country on the public health policies. In view of this, it is advised to share the comprehensive report of antibody testing with ICMR at the email id given below: mmurhekar@gmail.com.

10. Since test, track and treat is the only way to prevent spread of infection and save lives, it is imperative that testing should be made widely available to **all symptomatic individuals in every part of the country and contact tracing mechanisms for containment of infection are further strengthened**. ICMR advises all concerned State Governments, Public and Private Institutions to take required steps to scale up testing for COVID-19 by deploying combination of various tests as advised above.



Annexure 1:

Use of Standard Q COVID-19 Ag a point of care diagnostic assay is recommended in the following settings in combination with the gold standard RT-PCR test:

- A. Containment zones or hotspots** (to be performed onsite under strict medical supervision and maintaining kit temperature between 2° to 30° C):
- All symptomatic Influenza Like Illness (ILI).
 - Asymptomatic direct and high-risk contacts with co-morbidities (lung disease, heart disease, liver disease, kidney disease, diabetes, neurological disorders, blood disorders) of a confirmed case to be tested once between day 5 and day 10 of coming into contact.
- B. Healthcare settings** (to be performed onsite under strict medical supervision and maintaining kit temperature between 2° to 30° C):
- All symptomatic ILI patients presenting in a healthcare setting and are suspected of having COVID19 infection.
 - Asymptomatic patients who are hospitalized or seeking hospitalization, in the following high-risk groups:
 - Patients undergoing chemotherapy
 - Immunosuppressed patients including those who are HIV+;
 - Patients diagnosed with malignant disease;
 - Transplant patients;
 - Elderly patients (>65 yrs of age) with co-morbidities (lung disease, heart disease, liver disease, kidney disease, diabetes, neurological disorders, blood disorders)
 - Asymptomatic patients undergoing aerosol generating surgical / non-surgical interventions:
 - Elective/emergency surgical procedures like neurosurgery, ENT surgery, dental procedures etc.
 - Non-surgical interventions like bronchoscopy, upper GI endoscopy and dialysis etc.

****ILI case is defined as one with acute respiratory infection with fever $\geq 38^{\circ}\text{C}$ AND cough.***

Use of the rapid antigen test is recommended in A & B categories above subject to the following conditions:

- Should be interpreted between 15 to 30 minutes with a naked eye. No interpretation should be made before 15 minutes or after 30 minutes.
- Symptomatic individuals who test negative for COVID-19 by rapid antigen test should be definitely tested sequentially by RT-PCR to rule out infection, whereas a positive test should be considered as a true positive and does not need reconfirmation by RT-PCR test.**
- Samples (only nasopharyngeal swabs) to be collected by a trained healthcare worker following full infection control practices including use of proper PPE.
- The test should be conducted **onsite** under strict medical supervision and within one hour of sample collection in extraction buffer.



Annexure 2:

Possible groups/ community/ population based on specific requirement for sero-survey by using IgG ELISA test.

- i.) **Immuno-compromised patients:** PLHIV, patients on immuno-suppressive treatment, TB, SARI, COPD, patients on dialysis to be considered for testing;
- ii.) **Individuals in containment zones:** In identified containment zones and buffer zones where large number/ cluster of cases have been identified as demarcated geographical areas with residential, commercial structures;
- iii.) **Health Care Workers:** Specifically, all doctors including specialists, nursing staff, support staff, sanitary and other staff including the staff at registration, pharmacists, client facing desk clerks etc. Those workers in health care settings who either faces patients (whether known COVID 19 +ve or not), involved in their care or are in environment of potentially shared spaces or handling fomites;
- iv.) **Security personnel:** All security personnel facing the visitors, conducting their security screening, physical checking and thermal screening. This includes CISF personnel involved in security especially of offices;
- v.) **Police and paramilitary personnel civil defense & volunteers:** police personnel and volunteers involved in duties facing large number of individuals or those coming in contact with potentially infected individuals, fomites or settings/ places;
- vi.) **Press corps:** Press reporters covering field, interviews, press briefings, etc. and support staff;
- vii.) **Rural, tribal population (after reverse migration):** Migrant workers who have travelled back from urban and peri-urban areas to rural, tribal, hard to reach areas in the country as well as natives after coming in contact with returned migrants.
- viii.) **Industrial workers or labour force:** industry workers, daily wagers, migrant workers, temporary travel related workers, hospitality related works, service sector who are in large number or groups and has potential to spread transmission rapidly in workplace settings;
- ix.) **Farmers, vendors visiting large markets:** Farmers, sellers, brokers, purchasing vendors, distributors and other persons including drivers and labor by virtue of visiting crowded places like main markets where large exchange of materials happen between farmers and vendors during purchase and sell of vegetables etc.;
- x.) **Staff in municipal bodies:** Municipal staff working in areas like sanitation, water supply, electricity, etc. where interactions with citizens is expected; and
- xi.) **Drivers:** Drivers of hospital ambulances, hearse, buses, auto, taxies, etc. who have been on work front faced large number of individual previously or going to face in future. Bus conductors, cleaners and helping staff also should be included;
- xii.) **Banks, post, couriers, telecom offices:** public or private banks, small or large branches of banks and post, telecom offices as well as couriers;



- xiii.) **Shops:** Vendors and/ or owners as well as staff working in shops for essential goods, groceries, vegetables, milk, bread, chemists working at pharmacies, eateries and take away restaurants, etc.;
- xiv.) **Air travel related staff:** All ground staff, security staff, janitors, sanitation staff, flight captains and crew for domestic and international as well as cargo may be considered;
- xv.) **International operations:** All members of overseas operations for evaluation;
- xvi.) **Congregate settings:** People staying or working in slums with very high population density with poorly ventilated building, structures. Persons staying in institutional settings like old age homes, orphanage, asylums, shelters for homeless, hostels, etc. may also be considered;
- xvii.) **Prisons:** All prisoners with or without symptoms whenever there is a batch transfer or reported symptomatic;



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Indian Council of Medical Research
Department of Health Research, Ministry of Health
and Family Welfare, Government of India

Date: 24.06.2020

LIST OF IgG ELISA/CLIA KITS FOR COVID 19 VALIDATED BY ICMR IDENTIFIED VALIDATION CENTRES

Sl. No	Name of Company	Name of the Kit	*Batch Number
1.	Zydus Cadila Healthcare Ltd., Ahmedabad (Gujarat), India	COVID Kavach ELISA IgG	CoV2HI GG96-001 CoV2HI GG96-002 CoV2HI GG96-003
2.	Euroimmun US Inc., USA	Euroimmun Anti- SARS-COV-2 ELISA IgG	E200420AW
3.	Calbiotech Inc., USA	Erbalisa COVID-19 IgG ELISA	CVG6087
4.	YHLO iFlash, China	SARS-CoV-2 CLIA	C86095G-20200206 C86095G-20200210

The **IgG ELISA** and **CLIA** tests are recommended only for the following purpose:

- Serosurveys to understand the proportion of population exposed to infection including asymptomatic individuals. Depending upon the level of seroprevalence of infection, matching public health interventions can be implemented for prevention and control of the disease.
- Survey in high risk or vulnerable populations (health care workers, frontline workers, immunocompromised individuals, individuals in containment zones etc) to know who has been infected in the past and has now recovered.

Please Note:

- The ELISA tests have been validated in the laboratory. However, the performance of the test may be subject to variation under field conditions.
- *Above listed ELISA tests are validated with the mentioned batch number only. Responsibility for batch to batch consistency lies with the manufacturer.
- IgG ELISA / CLIA tests which are US-FDA approved** can be used directly after due marketing approval from DCGI.
- Names and contact details of the manufacturers of COVID Kavach IgG ELISA is enclosed for reference.



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Indian Council of Medical Research
Department of Health Research, Ministry of Health
and Family Welfare, Government of India

ICMR has transferred COVID Kavach ELISA IgG technology to below mentioned pharma companies:

S.No.	Name of Company	Contact Details
1	Zydus Cadila Healthcare Ltd	Vivek Kant Tripathi Zydus Corporate Park, 4th Floor, B Wing, Scheme No. 63, Survey No. 536, Near Vaishnodevi Circle, Sarkhej-Gandhinagar Highway, Ahmedabad-382481, Gujarat, India Mobile: +919717273066 Email:vivekkant.tripathi@zyduscadila.com
2	Meril Diagnostics Pvt. Ltd	Paparaidu Sanapala Dy. General Manager(Technical Head) Vapi-Gujarat Mobile: +9195741 44456 Email:paparaidu.sanapala@merillife.com
3	Voxtur Bio Ltd.	Dr Veeraal Gandhi, Chairman Plot No. A-1, Royal Compound, Tamanman Kaman Bhivandi Road, Vasai, Palghar, Mumbai-401208 Mobile: +91-9819720123 Email: veeraal@voxturbio.com
4	Trivitron Healthcare Pvt. Ltd	Nitin Sawant, President D -134, MIDC, Industrial Area, Shirvane, Opposite Dr. D YPatil University, Nerul, Navi Mumbai – 400706 Mobile: +91 8291282827 Email: santosh.jagtap@trivitron.com
5	J.Mitra & Co. Pvt Ltd	Sangeeta Gupta, Head Technical A-180, Okhla Industrial Area, Phase-1, New Delhi - 110020, INDIA Mobile:+918800192205 Email : tcmgr@jmitra.co.in
6	Karwah Enterprises Pvt Ltd	Dr. Vivek Varma, Head – Operations Rapid Diagnostic Group of Companies B-82, Industrial Area, G.T. Karnal Road, New Delhi – 110033 Mobile: +91 9535998155 Email: drjindal@rdgc.in
7	Avecon Healthcare Pvt Ltd	Rajesh Aggarwal Plot No. 338, Industrial Growth Centre Saha, Haryana- 133104 Mobile: + 91 9315445391 Email : exportzone@aveconhealthcare.com



Date: 25/06/2020

PERFORMANCE EVALUATION OF COMMERCIAL KITS FOR REAL TIME PCR FOR COVID BY ICMR IDENTIFIED VALIDATION CENTRES

Till date, 133 RT-PCR kits have been evaluated by ICMR validation centres, and the following were found to be satisfactory.

Sl. No	Name of Company	Name of the Kit	*Batch Number
1.	ABI (Applied bio-systems), United States	TaqMan 2019-nCoV Control Kit v1	47532-020720
2.	Accelerate Technologies Pte.ltd (DxD Hub), Singapore	A*STAR FORTITUDE KIT 2.0	200304 200402
3.	ADT India Ltd, New Delhi, India	LyteStar 2019-nCoV RT PCR Kit 1.0	nCOV-2003-06; nCOV-2004-02 nCOV-2004-03 SARS-2004-01 SARS-2004-02 SARS-2004-03
4.	Altona Diagnostics, Germany	RealStar SARS-CoV-2 RT-PCR kit 1.0	023005 024628
5.	Angstrom Biotech Pvt. Ltd, Rajasthan	ANGPCR 2019-nCoV	COVP02
6.	Aura Biotechnologies Private Limited, Chennai	Aura's CORONAVIRUS (COVID-19) Real Time PCR DETECTION KIT	LD12020005
7.	BGI Genomics, China	Real Time Fluorescent RT-PCR Kit for detecting 2019-nCoV	6020200107
8.	Biogenix INC Pvt Ltd, Lucknow	Biogenix Covid-19 one step RT PCR	20200412
9.	BioGenomics Limited, Thane, India	BIO COVID ID/COVID-19 qualitative PCR detection kit version 2	BGL/IVD/COV/0420/004
10.	BioSewoom, South Korea	Real-Q 2019-nCoV Detection Kit	580L-008
11.	Cepheid, United States	Xpert Xpress SARS-CoV-2	1000191996 1000191998 1000191999
12.	CliniExperts Services Private Limited, New Delhi	RealCycler Coronavirus SARS-CoV-2 (ORF8+ E gene) Progenie	RC1405
13.	CoSara Diagnostics Pvt. Limited, Ahmedabad, India	SARAGENE™ Corona Virus (2019 NCV) Test Kit	20C11PE-01
14.	Daan Gene Co. Ltd., China	Daan Gene Co. Ltd	2020007
15.	DNA technology Research & Production, LLC, Russia (365 Medical India)	SARS-CoV-2/SARS-CoV Multiplex Rteal-Time PCR detection kit	F2005S-2M
16.	DNA Xpert Pvt. Ltd, Noida, India	Xpert Covido 19-Fast RT-PCR kit	XC19-01



Sl. No	Name of Company	Name of the Kit	*Batch Number
17.	EUROIMMUN, UK (CPC Diagnostics Pvt Ltd)	EURO Real Time SARS CoV-2	I200428CF
18.	GCC Biotech Pvt. Ltd, 24 Parganas, West Bengal, India	DiagSure nCOV-19 Detection assay (Taqman based)	20115K1278 20115k1251
19.	GeneMatrix, South Korea	NeoPlex COVID-19 detection kit	NR05A
20.	Gene Path Diagnostics Dehradun, Uttarakhand	GenePath CoViDx One RT-qPCR v2.1.1	20200504A
21.	Genes2me Pvt Ltd, Gurugram, Haryana	VIRALDTECT II Multiplex real time RT-PCR for COVID-19	G2M2001
22.	Genes2me Pvt Ltd, Gurugram, Haryana	VIRALDTECT Multiplex Real-Time PCR kit	G2M1001
23.	Genestore, France	Detection Expert 1S © SARS CoV-2 One Step rRT-PCR Kit	DII.31519.3.0000001
24.	Genome Diagnostics Pvt. Ltd., New Delhi, India	Genosens nCOV 2019 Real time PCR kit	CoV-002/20
25.	Gland Pharma Ltd., Hyderabad	RT PCR SARS-CoV-2	20200406
26.	Helini Biomolecules, Chennai, India	Helini Coronavirus [COVID-19] Real time-PCR Kit	01/2020 MFD: 04/20
27.	Helini Biomolecules, Chennai	Helini Coronavirus Real-Time PCR kit [RdRp & ORF gene – Dual target-single tube assay]	01/2020, 02/2020, 03/2020
28.	Huwel Lifesciences Pvt. Ltd., Hyderabad, India	Quantiplus CoV detection KIT Ver 2.0	QLCNAV0620 QLCNAV0920
29.	JN Medsys Pte Ltd, Singapore	Protect COVID-19 RT-qPCR Kit	RD 202004-001
30.	KILPEST (3B BlackBio Biotech India Ltd., Bhopal, India)	TRUPCR SARS-CoV-2RT-qPCR kit version 2	CoV-19/V2/2020/01
31.	Kogene Biotech, Seoul, Korea	Power Check 2019 nCoV Real Time PCR Kit	R6900TD200423
32.	Indian Institute of Technology, Delhi, India	Covid 19 Probe-free Real Time PCR Diagnostic Kit	09042020
33.	InnoDx Solutions Pvt. Ltd	InnoDetect COVID-19 RT-PCR kit Version 1	COV-21-JU-20
34.	Intron Biotechnology, Korea (Loften India Pvt Ltd)	LiliF COVID-19 Real Time RT-PCR kit	H215051153
35.	Lab Care Diagnostics (India) Pvt. Ltd., Mumbai, India	Accucare COVID-19 One-step RT-pCR kit	RPCR200401 RPCR200402
36.	LabGenomics, South Korea	LabGun Real Time PCR Kit	COV20D001 COV20D002 COV20D004 COV20D006



Sl. No	Name of Company	Name of the Kit	*Batch Number
37.	Lab Genomics Co Ltd, Republic of Korea (Siemens Healthcare Private Limited)	LabGun COVID-19 Assay plus	CVA 20E001
38.	LLC Art Biotech	Art Test COVID-19 kit	C19300320
39.	Maccura Biotechnology Co Ltd China (Eris Lifesciences Ltd)	SARS-CoV-2 Nucleic Acid Detection Kit (Flourescent PCR)	0420131
40.	Med Achievers Private Limited, Noida, Uttar Pradesh, India	Genome Analyst SARS-CoV-2 detection kit	Lot No. GA0306-20-A, Batch No. MGA202003006
41.	Medsorce Ozone Biomedicals, Faridabad, India	COVID-19 RT-PCR kit	20200433
42.	Meril Diagnostics, Vapi, Gujarat, India	Meril COVID-19 One-step RT-PCR Kit	MRD091 MRD097 MRD098 M1052007
43.	Mylab Discovery Solutions, Pune, India	Patho Detect	PP00005-C-0320001 PP00005-C-0420001 PP00005-C-0320002 PP00005-C-0420002
44.	Mylab Discovery solutions, Pune, India	Pathodetect (Two tube assay)	PP00005-C-0520003
45.	OSANG Health Care, South Korea	Gene Finder COVID-19	2003-R45-22
46.	Pishtaz Teb Zaman Diagnostics, Iran (Corevyan Private limited)	COVID-19 One-step RT-PCR kit	99001
47.	POCT Services Pvt. Limited, Lucknow, India	Q-line Molecular Coronavirus (COVID-19) RT-PCR kit	P200401
48.	Primer Design, UK	Z-Path Covid-19C (Genesig)	JN-02780-0011
49.	Roche Diagnostics , Switzerland	Light Mix Modular SARS-CoV-2 (COVID19) RdRp	48492015
50.	Sansure Biotech Inc., Changsha, China	Novel Coronavirus(2019-nCoV) Nucleic Acid Diagnostic Kit (PCR-Fluorescence Probing)	2020029/S3102E
51.	Seegene, South Korea	Allplex 2019-nCoV assay	RP4520A01 RP4520D34 RP4520D47 RP4520D50 RP4520D51 RP4529D70
52.	SD Biosensor, South Korea	nCoV Real-Time Detection kit	MNCO 0120004 MNCO0120009
53.	SNP Biotechnology R&D Ltd, Turkey (Wockhardt Ltd)	COVID-19 Real Time PCR kit v1	2006R2
54.	Oscar Medicare Pvt. Ltd., New	COVID-19 RT-PCR Kit	OSCOV-003



Sl. No	Name of Company	Name of the Kit	*Batch Number
	Delhi, India		Catalog No. OSCOV-96
55.	3B Black Bio Biotech India Ltd., Bhopal, India	TRUPCR SARS-CoV-2 RT-qPCR Kit (V-3.2) (Single Tube Multiplex format)	CoV-19/V3.2/2020/02
56.	YOUSEQ, UK	COVID19 E,N,RdRp & S gene Multiplex qPCR kit	YSM1641
57.	ZyBio Inc, China (Biodx healthcare)	Zybio SARS-CoV-2 NA detection kit	200201

*Above listed kits are validated with the mentioned batch number only. The tests have been performed as per the manufacturer's instructions. Responsibility for batch to batch consistency lies with the manufacturer.

Real-Time PCR kits which are US-FDA can be used directly after due marketing approval from DCGI. The complete list of US-FDA SARS-CoV-2 real time PCR kits is available at (<https://www.finddx.org/covid-19/pipeline/>).



Dated: 25/06/2020

Guidelines for storage of respiratory specimens collected for COVID-19 diagnosis by RT PCR platforms in Government laboratories

1. In the ongoing laboratory testing for COVID-19 diagnosis by molecular diagnostic methods, clinical specimens or a subset of the clinical specimens may need to be retained for various purposes such as performing additional tests, for quality control purposes or for use as control materials to assess newer diagnostic tests. In addition, a laboratory may need to store specimens for projects aimed at studying genomic epidemiology of the SARS CoV2 virus across regions and over time.
2. All samples being stored for a long-term must be appropriately labelled indicating laboratory identifiers, date of sample collection and must be stored in properly functioning -80°C deep freezers. A proper inventory (preferably electronic) of stored samples should be essentially maintained.
3. With the surge in testing across the country, the total number of tested samples has gone up considerably. Keeping this in view, ICMR advises of the following.
 - a) Laboratories that are serving as validation centres for COVID-19 diagnostic kits are advised to preserve adequate numbers of positive and negative samples to prepare appropriate panels for validation etc.
 - b) At a minimum, all samples testing positive for SARS CoV2 must be retained for at least 30 days from the date of testing before being destroyed. Depending on the freezer space availability in a particular laboratory, one or more aliquots of the positive specimen may be retained for the period.
 - c) A government laboratory may decide on the number of positive / negative samples to retain in the long term based on the availability of freezer space as well as perceived research agenda of the laboratory for COVID-19 in the future.
 - d) If the number of samples tested positive at a laboratory is considerably large and the laboratory is unable to retain all positive samples beyond 30 days, a minimum of 10% of all positives detected at the laboratory in a month or 40-50 positives preferably with equal numbers of high, moderate and low viral load should be stored for a period of 1 year at the least. A single aliquot of a positive sample may be retained taking into account freezer space availability at the laboratory.



- e) Considering that the number of samples tested negative at each laboratory will vary depending on the sample load and testing capacity of the laboratory, a minimum of 50 samples or 1-2% of all negative tested samples over a month, whichever is smaller should be retained at the testing laboratory for a period of 1 year. A single aliquot of a negative sample may be retained taking into account freezer space availability at the laboratory.
- f) All labs will send 5 random positive and 5 random negative samples per month to QC labs. ICMR has mapped COVID-19 testing labs to different QC labs (Annexure I). All testing labs should liaise with the recommended QC labs and will ensure regular participation in QC activity.
- g) All testing labs will ensure storage of samples at -80°C and will ensure regular monthly transfer to QC labs. Don't forget to include your lab name and sample ID. While shipping, place samples in screw capped vials and proper Biosafety and Biosecurity precautions should be followed as per IATA guidelines.
- h) In case of any discordance, additional 5 positive and 3 negative samples will need to be sent for QC check.
- i) If QC results are concordant, all the QC samples may be destroyed and labs will keep record of destruction.
- j) Appropriate procedures to disinfect all samples prior to disposal must be followed.



Annexure I

QC lab	Government Testing Labs
RMRC, Dibrugarh Contact: Dr. Biswa Borkakoty, Email: biswaborkakoty@gmail.com	Assam, Manipur, Mizoram, Meghalaya, Nagaland, Tripura
SVMS, Tirupati Contact: Dr. Usha Kalawat, Email: ukalawat@yahoo.com	Andhra Pradesh, Telangana
RMRC, Port Blair Contact: Dr. Paluru Vijayachari Email: vijayacharipaluru@gmail.com	Andaman and Nicobar Islands
RMRIMS, Patna Contact: Dr. Pradeep Das, Email: drpradeep.das@gmail.com	Bihar
AIIMS, Raipur Contact: Dr. Anudita Bhargava, Email: anuditabhargava@gmail.com	Chhattisgarh
AIIMS, New-Delhi Contact: Dr. Lalit Dar, Email: lalitdaraiims@gmail.com	Delhi
BJMC, Ahmedabad Contact: Dr. M.M. Vegad, Email: mahendravegad@rediffmail.com	Gujarat
BPS, Sonipat Contact: Dr. Sarita Yadav, Email: yadav78sarita@yahoo.com	Haryana
RIMS, Ranchi Dr. Manoj Kumar, Email: icmrvirologyrim@gmail.com	Jharkhand
SKIMS, Jammu and Kashmir Dr. Bashir Fomda Email: bashirfomda@gmail.com	Jammu and Kashmir, Ladakh
AIIMS, Bhopal Dr. Debasis Biswas, Email: debasis.microbiology@aiimsbhopal.edu.in	Madhya Pradesh
NIV Field unit, Bengaluru Contact: Dr. Ashok Email: ashokmniv@gmail.com	Karnataka



QC lab	Government Testing Labs
NIV Field unit, Allapuzha Contact: A.P. Sugunan, Email: apsugunan@gmail.com	Kerala, Lakshadweep
Kasturba Hospital for Infectious Diseases, Mumbai. Contact: Dr Jayanthi Shastri, Email: jsshastri@gmail.com	Mumbai
NIV, Pune Contact: Dr. Varsha Potdar Email: potdarvarsha9@gmail.com	Rest of Maharashtra, Goa, Dadra and Nagar Haveli
RMRC, Bhubaneswar Contact: Dr. Jyoti Turuk Email: drjyotirmayuturuk@gmail.com	Odisha
PGI, Chandigarh Contact: Dr. Mini Singh Email: minipsingh@gmail.com	Chandigarh, Punjab, Himachal Pradesh
JIPMER, Puducherry Contact: Dr. Rahul Dhodapkar Email: rahuldhodapkar@gmail.com	Puducherry
GMC, Haldwani Contact: Dr. Vinita Rawat, Email: drvinitarawat@gmail.com	Uttarakhand
SMS Medical College, Jaipur Contact: Dr. Bharti Malhotra, Email: drbhartimalhotra@gmail.com	Rajasthan
KIPM, Chennai Contact: Dr. K. Kaveri, Email: kaveri_raj1967@yahoo.com	Tamil Nadu
KGMU, Lucknow Contact: Dr. Amita Jain, Email: amita602002@yahoo.com	Uttar Pradesh
NICED, Kolkata Contact: Dr. Shanta Dutta Email: shanta1232001@yahoo.co.in,	West Bengal, Sikkim



भारतीय आयुर्विज्ञान अनुसंधान परिषद
स्वास्थ्य अनुसंधान विभाग, स्वास्थ्य और परिवार
कल्याण मंत्रालय, भारत सरकार

Indian Council of Medical Research
Department of Health Research, Ministry of Health
and Family Welfare, Government of India

Date: 25/06/2020

Invitation for Expression of Interest for Validation of Rapid Antigen Detection Assays for COVID-19:

Context:

As India is lifting lockdowns in various parts of the country in a phased manner, it is expected to see an upsurge in cases of COVID-19 due to increased transmission of SARS-CoV-2 virus. In view of this, it is important to scale up testing capacity to the maximum possible levels.

The gold standard RT-PCR diagnostic test for COVID-19 has limitations in terms of widespread availability. In view of this, there is urgent requirement of reliable and convenient rapid point of care antigen detection assays with high sensitivity and specificity. Such assays could be used as potential diagnostic tests in all possible public and private healthcare settings and made available for mass testing.

So far, ICMR has validated and approved only one rapid antigen detection assay from SD Biosensor.

ICMR invites applications for validation of rapid antigen detection tests for COVID-19 from all manufacturers who have developed such test.

ICMR has identified the following sites for validation of the rapid point-of-care antigen detection tests for COVID-19:

1. All India Institute of Medical Sciences, Delhi
2. SMS Medical College, Jaipur
3. King George Medical University, Lucknow
4. Kasturba Hospital for Infectious Diseases, Mumbai
5. Post Graduate Institute of Medical Education & Research, Chandigarh
6. Jawaharlal Institute of Postgraduate Medical Education & Research, Puducherry
7. National Institute of Virology, Kerala Unit, Alappuzha

Essential criteria for validation:

1. A minimum of 300 rapid antigen tests would be required for each validation.
2. A minimum of 3-4 instruments (if the test results are to be interpreted using a specialized equipment such as fluorescence immunoassay readers etc.) will be required.
3. Ability to provide training to technical staff involved in validation of the test.
4. If the kit is approved after validation, the manufacturers should be committed to make adequate supplies of the product available to India with immediate effect.
5. Import / test license from CDSCO/DCGI wherever applicable.

All interested manufacturers fulfilling the above essential criteria are requested to send their applications to the following email id:

guptanivedita.hq@icmr.gov.in

Subject-line of the email should read as: REQUEST FOR VALIDATION OF COVID-19 RAPID ANTIGEN TEST.

महाराष्ट्र शासन
सार्वजनिक आरोग्य विभाग
गो. ते. रुग्णालय संकुल इमारत,
१० वा मजला, मंत्रालय, मुंबई ४०० ००१.
शासन निर्णय क्र. कोरोना-२०२०/प्र.क्र.१७३/आरोग्य- ५
दिनांक: २२ जून, २०२०

संदर्भ :-

- १) उपरोक्त विषयाच्या अनुषंगाने आयसीएमआरच्या दिनांक १४.०६.२०२० व दिनांक १९.०६.२०२०च्या मार्गदर्शक सूचना.

प्रस्तावना :-

कोविड-१९ बाधेसाठी सद्यःस्थितीत आर.टी.पी.सी.आर. ही एकमेव निदान चाचणी आहे. या चाचणीसाठी आर.टी.पी.सी.आर. मशीनरी/ट्रुनॅट/सी.बी.नॅट यांच्याद्वारे चाचण्या केल्या जातात. आर.टी.पी.सी.आर. चाचणीसाठी लागणारा वेळ तसेच सी.बी.नॅटद्वारे तपासणीसाठी एका वेळी केवळ एक ते चार मर्यादेत होणाऱ्या तपासण्या तसेच कार्टीज ची अनुपलब्धता व जास्तीची किंमत ही या चाचण्यांबाबतची उणे बाजू आहेत. कोविड बाधेची निश्चिती लवकरात लवकर होण्यासाठी अनेक प्रयोगशाळांमध्ये संशोधन सुरु आहे. आता आय.सी.एम.आर. ने तपासणीअंती Standard Q Covid-19 Ag detection kit द्वारे SARS-COV-2 चे ॲन्टीजेन निदान होत असल्याचे खातरजमा केलेली आहे. या टेस्टमुळे निगेटिव्ह निदान करण्याचे प्रमाण ९९.३ ते १०० टक्के आहे. तर पॉझिटिव्ह निदान चे प्रमाण ५०.६ ते ८४ टक्के (रुग्णाच्या शरीरातील व्हायरल लोड नुसार) आहे. त्यामुळे अत्यंत तातडीच्या प्रसंगी ही किट वापरून निदान करता येणे शक्य असल्याने कोविड-१९ साठी रॅपिड ॲन्टीजेन टेस्ट करण्यास आय.सी.एम.आर सह ऑल इंडीया इन्स्टीटयुट ऑफ मेडीकल सायन्सनेही तपासणीअंती SD Biosensor या एकमेव कंपनीच्या Standard Q Covid-19 Ag detection kit किटला मान्यता दिलेली आहे.

या टेस्टचा वापर कन्टॅमेंट झोन/हॉटस्पॉटमध्ये वैद्यकीय अधिकाऱ्यांच्या मार्गदर्शनाखाली करता येणे शक्य आहे.

फ्ल्यू सदृश्य लक्षणे असलेल्या तसेच अतिजोखमीच्या व्यक्तीच्या संपर्कातील लक्षणे नसलेल्या व इतर हृदय विकार/फुफ्फुस/यकृत/मुत्रपिंड विकार/मधुमेह तसेच रक्तदाब इ. विकार असलेल्या त्याचप्रमाणे केमो थेरपी, एचआयव्ही पॉजीटीव्ह, अवयव प्रत्यारोपण केलेले

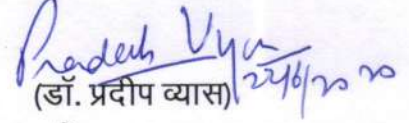
किंवा वयोवृद्ध व्यक्तींवर तसेच गरोदर महिलांवर तातडीने उपचारासाठी/रुग्णालयामध्ये आंतररुग्ण भरतीसाठी तातडीची चाचणी म्हणून या रॅपीड अँटीजेन टेस्ट चा उपयोग करणे शक्य आहे. ही चाचणी रुग्ण असलेल्या जागेवर, निदानासाठी स्त्राव घेतल्यानंतर एक तासाच्या आत व वैद्यकीय अधिकाऱ्याच्या निरीक्षणाखालीच करणे शक्य असल्याचे आसीएमआर ने त्यांच्या मार्गदर्शिकेमध्ये नमूद केलेले आहे. या चाचणीचे निदान केवळ १५ व जास्तीत जास्त ३० मिनिटात होत असल्याने कोणत्याही बाह्य उपकरणांशिवाय नुसत्या डोळ्याने करता येणे शक्य आहे. या बाबी लक्षात घेता राज्यात कॅन्टॅमेंट झोन/हॉटस्पॉट/शासकीय रुग्णालये/शासकीय वैद्यकीय महाविद्यालय संलग्न रुग्णालयांमध्ये तातडीच्या उपचारांची आवश्यकता असलेल्या रुग्णांसाठी रॅपीड अँटीजेन टेस्ट चा उपयोग करण्याची बाब शासनाच्या विचाराधीन होती. यास्तव खालीलप्रमाणे निर्णय घेण्यात येत आहे.

शासन निर्णय :-

- १) फ्ल्यू सदृश्य लक्षणे असलेल्या तसेच अतिजोखमीच्या व्यक्तीच्या संपर्कातील लक्षणे नसलेल्या व इतर हृदय विकार/फुफ्फुस/यकृत/मुत्रपिंड विकार/मधुमेह तसेच रक्तदाब इ. विकार असलेल्या त्याचप्रमाणे केमो थेरपी, एचआयव्ही पॉजीटीव्ह, अवयव प्रत्यारोपण केलेले किंवा वयोवृद्ध व्यक्तींवर तसेच गरोदर महिलांवर तातडीने उपचारासाठी/रुग्णालयामध्ये आंतररुग्ण भरतीसाठी तातडीची चाचणी करण्यासाठी SD Biosensor या कंपनीच्या Standard Q Covid-19 Ag detection kit द्वारे तपासणी करण्यास मान्यता देण्यात येत आहे.
- २) आय.सी.एम.आर. ने SD Biosensor या कंपनी सोबत वाटाघाटी करून Standard Q Covid-19 Ag detection kit मधील एका टेस्टची किंमत प्रति टेस्ट ₹ ४५० या दराने निश्चित केलेली आहे.
- ३) महानगरपालिका क्षेत्रात कॅन्टॅमेंट झोन/हॉटस्पॉटमध्ये उपरोक्त नुसार मोठ्या प्रमाणावर तपासणी करण्याची आवश्यकता भासल्यास संबंधित आयुक्त, महानगरपालिका त्यांच्या महानगरपालिका क्षेत्रासाठी/महानगरपालिका रुग्णालयांसाठी Standard Q Covid-19 Ag detection kit खरेदी करू शकतील.
- ४) राज्य शासनाच्या सार्वजनिक आरोग्य विभाग/शासकीय वैद्यकीय महाविद्यालय संलग्न रुग्णालयांसाठी SD Biosensor या कंपनीचे Standard Q Covid-19 Ag detection kit १ लाख टेस्ट (प्रति किट २५ टेस्ट या प्रमाणे एकूण ४०,००० किट) प्रति टेस्ट ₹ ४५० + GST/- या दराने खरेदी करण्यास मान्यता देण्यात येत आहे.
- ५) यासाठी लागणारे ₹ ४.५० कोटी + GST इतका निधी हा राष्ट्रीय/राज्य आपत्ती निवारण निधीतून करण्यास मान्यता देण्यात येत आहे.
- ६) सदर खरेदी आयुक्त, आरोग्य सेवा तथा अभियान संचालक, राष्ट्रीय आरोग्य अभियान यांचे स्तरावर करण्यात येईल.

- ७) खाजगी वैद्यकीय महाविद्यालय संलग्न रुग्णालये/खाजगी आरोग्य संस्था उपरोक्त दराने Standard Q Covid-19 Ag detection kit खरेदी करू शकतील.
- ८) आय.सी.एम.आर. ची संदर्भाधीन पत्रे या शासन निर्णयाच्या सोबत प्रपत्र -अ व ब म्हणून सुलभ संदर्भास्तव जोडण्यात येत आहे.

महाराष्ट्राचे राज्यपाल यांच्या आदेशानुसार व नावाने,


(डॉ. प्रदीप व्यास) 27/6/2020

प्रधान सचिव, महाराष्ट्र शासन

प्रत,

- १) मा. मुख्य सचिव, महाराष्ट्र शासन, मंत्रालय, मुंबई.
- २) मा. मुख्यमंत्री यांचे अपर मुख्य सचिव, मंत्रालय, मुंबई.
- ३) मा. उपमुख्यमंत्री यांचे सचिव, मंत्रालय, मुंबई.
- ४) मा. आरोग्य मंत्री यांचे खाजगी सचिव, मंत्रालय, मुंबई.
- ५) सचिव, वैद्यकीय शिक्षण व औषधी द्रव्ये विभाग, मंत्रालय, मुंबई.
- ६) सचिव, मदत व पुर्नवसन, महसुल विभाग, मंत्रालय, मुंबई.
- ७) आयुक्त, आरोग्य सेवा तथा अभियान संचालक, राष्ट्रीय आरोग्य अभियान, मुंबई.
- ८) जिल्हाधिकारी (सर्व).
- ९) महानगरपालिका आयुक्त (सर्व).
- १०) मुख्य कार्यकारी अधिकारी, जिल्हा परिषद (सर्व)
- ११) मुख्य कार्यकारी अधिकारी, राज्य आरोग्य हमी सोसायटी, मुंबई.
- १२) संचालक, आरोग्य सेवा, मुंबई व पुणे.
- १३) संचालक, वैद्यकीय शिक्षण व संशोधन, मुंबई.
- १४) जिल्हा शल्य चिकित्सक, जिल्हा रुग्णालय (सर्व).
- १५) जिल्हा आरोग्य अधिकारी (सर्व).
- १६) अध्यक्ष, इंडियन मेडीकल असोशिएशन (सर्व)
- १७) निवड नस्ती (आरोग्य-५)



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स्वास्थ्य अनुसंधान विभाग, स्वास्थ्य और परिवार
कल्याण मंत्रालय, भारत सरकार

Indian Council of Medical Research
Department of Health Research, Ministry of Health
and Family Welfare, Government of India

Advisory on Use of Rapid Antigen Detection Test for COVID-19

Dated: 14th June 2020

Background:

1. Real time RT-PCR is the gold standard frontline test for diagnosis of COVID19. Various open and closed RT-PCR platforms (Open systems RT-PCR machines, TrueNat and CBNAAT) are currently being used for COVID19 diagnosis in India. All these platforms require specialized laboratory facilities in terms of equipment, biosafety & biosecurity. Minimum time taken for the test varies between different systems with a minimum of 2-5 hours including the time taken for sample transportation. These specifications limit the widespread use of the RT-PCR test and also impedes quick augmentation of testing capacity in various containment zones and hospital settings.
2. In view of this, there is urgent need of a reliable point-of-care rapid antigen detection test with good sensitivity and specificity for early detection of the disease.
3. There are no reliable antigen detection tests available worldwide, which could be used as rapid point of care tests for quick detection of COVID-19 positive patients. Such tests would help in proper implementation of the Govt. strategy to test, track and treat. Such tests will also help in allaying the anxiety and fear of healthcare workers and aid in better clinical management of the patients. In view of this, an independent two site evaluation of the only available or standalone antigen detection assay: **Standard Q COVID-19 Ag detection kit**, was conducted with an aim to evaluate its sensitivity, specificity and feasibility of use as a point-of-care test for early detection of SARS-CoV-2.
4. **Brief description of the Standard Q COVID-19 Ag detection:**
 - i) **Standard Q COVID-19 Ag detection kit** is a rapid chromatographic immunoassay for qualitative detection of specific antigens to SARS-CoV-2. has been developed by SD Biosensor, a South Korea based company, having its manufacturing unit in Manesar, Gurugram, India.
 - ii) Each test kit comes with an inbuilt COVID antigen test device, viral extraction tube with viral lysis buffer and sterile swab for sample collection.
 - iii) One Nasopharyngeal swab needs to be collected using the customized sample collection swab provided with the kit. No other sample (throat swab, bronchoalveolar lavage or sputum) should be used.
 - iv) After sample collection, the swab should be immersed and squeezed in the viral extraction buffer, provided with the kit. This buffer inactivates the virus thereby reducing biosafety and



biosecurity requirements. The test does not work if the sample is collected in the usual Viral Transport Media (VTM), routinely used for collection of OP/NP swabs.

- v) Once the sample is collected in the extraction buffer, it is stable only for one hour. Therefore, the antigen test needs to be conducted at the site of sample collection in the healthcare setting. Transportation to the lab is not recommended.
- vi) Once the sample goes into the buffer and is mixed properly, the buffer tube cap needs to be replaced with a nozzle provided with the kit and 2-3 drops of the sample with buffer are put into the well of the test strip.
- vii) The test can be interpreted as positive or negative after 15 minutes of putting the sample into the well by appearance of test and control lines, which can be read with a naked eye, requiring no specialized equipment. Maximum duration for interpreting a positive or negative test is 30 minutes. After that the test strip should be discarded.
- viii) The test kit should be stored between 2° to 30° C.
- ix) Detailed instructions for use can be accessed through the video link: <https://youtu.be/mBdaOHJWxI4>

5. Validation of the Test:

I. Sites:

Standard Q COVID-19 Ag detection assay by SD Biosensor was evaluated independently by the following agencies:

- i) Indian Council of Medical Research, Delhi; and
- ii) All India Institute of Medical Sciences, Delhi

II. Results:

- i) Standard Q COVID-19 Ag rapid antigen detection test has a very high specificity (i.e. ability to detect true negatives). Specificity ranged from 99.3 to 100% at the two sites.
- ii) Sensitivity of the test (i.e. ability to detect true positives) ranged from 50.6% to 84% in two independent evaluations, depending upon the viral load of the patient. Higher viral load correlated with higher sensitivity.

6. Conclusions and Recommendations:

- i) Standard Q COVID-19 Ag detection assay by SD Biosensor is the standalone antigen detection test which is available in India and has been validated.
- ii) ICMR encourages other manufacturers / developers who have antigen detection assays to come forward for validation.



iii) **In view of its high specificity while relatively low sensitivity, ICMR recommends the use of Standard Q COVID-19 Ag detection assay as a point of care diagnostic assay for testing in the following settings in combination with the gold standard RT-PCR test:**

A. Containment zones or hotspots (to be performed onsite under strict medical supervision and maintaining kit temperature between 2° to 30° C.):

- i) All symptomatic Influenza Like Illness (ILI).
- ii) Asymptomatic direct and high-risk contacts with co-morbidities (lung disease, heart disease, liver disease, kidney disease, diabetes, neurological disorders, blood disorders) of a confirmed case to be tested once between day 5 and day 10 of coming into contact.

B. Healthcare settings (to be performed onsite under strict medical supervision and maintaining kit temperature between 2° to 30° C):

- i) All symptomatic ILI patients presenting in a healthcare setting and are suspected of having COVID19 infection.
- ii) Asymptomatic patients who are hospitalized or seeking hospitalization, in the following high-risk groups:
 - Patients undergoing chemotherapy
 - Immunosuppressed patients including those who are HIV+;
 - Patients diagnosed with malignant disease;
 - Transplant patients;
 - Elderly patients (>65 yrs of age) with co-morbidities (lung disease, heart disease, liver disease, kidney disease, diabetes, neurological disorders, blood disorders)
- iii) Asymptomatic patients undergoing aerosol generating surgical / non-surgical interventions:
 - Elective/emergency surgical procedures like neurosurgery, ENT surgery, dental procedures;
 - Non-surgical interventions like bronchoscopy, upper GI endoscopy and dialysis;

****ILI case is defined as one with acute respiratory infection with fever $\geq 38^{\circ}\text{C}$ AND cough.***

Use of the rapid antigen test is recommended in A & B categories above subject to the following conditions:

- i) **Suspected individuals who test negative for COVID-19 by rapid antigen test should be definitely tested sequentially by RT-PCR to rule out infection, whereas a positive test should be considered as a true positive and does not need reconfirmation by RT-PCR test.**
- ii) **Samples (only nasopharyngeal swabs) to be collected by a trained healthcare worker following full infection control practices including use of proper PPE.**
- iii) **The test should be conducted onsite under strict medical supervision and within one hour of sample collection in extraction buffer.**



सत्यमेव जयते

प्रोफेसर (डा.) बलराम भार्गव, पदम श्री

एमडी, डीएम, एफआरसीपी (जी.), एफआरसीपी (ई.), एफएसीसी,
एफएएचए, एफएएमएस, एफएनएएस, एफएएससी, एफ.एन.ए., डी.एस.सी.

सचिव, भारत सरकार

स्वास्थ्य अनुसंधान विभाग

स्वास्थ्य एवं परिवार कल्याण मंत्रालय एवं

महानिदेशक, आई सी एम आर

Prof. (Dr.) Balram Bhargava, Padma Shri

MD, DM, FRCP (Glasg.), FRCP (Edin.),
FACC, FAHA, FAMS, FNAsc, FASc, FNA, DSc

Secretary to the Government of India

Department of Health Research

Ministry of Health & Family Welfare &

Director-General, ICMR



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स्वास्थ्य अनुसंधान विभाग

स्वास्थ्य एवं परिवार कल्याण मंत्रालय

भारत सरकार

वी. रामलिंगस्वामी भवन, अंसारी नगर

नई दिल्ली - 110 029

Indian Council of Medical Research

Department of Health Research

Ministry of Health & Family Welfare

Government of India

V. Ramalingaswami Bhawan, Ansari Nagar

New Delhi - 110 029

DO.No.ECD/COVID19/Misc./2020

Dated 19th June 2020

Subject: Ramping up testing for COVID-19 in containment zones and hospitals.

Dear (Chief Secretaries of all states)

1. Real Time RT-PCR is the gold standard test for detecting cases of COVID-19. The test requires specialized laboratory setup with specific biosafety and biosecurity precautions to be followed. Average time taken is around 4-5 hours from receipt of sample to getting the result. The advantage of this platform lies in its accuracy of detection as well as ability to run upto 90 samples in a single run. However, in view of the specialized laboratory requirements, this test cannot be performed at every district level labs which do not have molecular virology facilities.
2. The TrueNat and CBNAAT systems have also been deployed for diagnosis of COVID-19 in view of availability of customized cartridges for COVID-19 diagnosis. These platforms have widespread availability even at district and PHC as these platforms are widely used for diagnosis of Tuberculosis as well as other infectious diseases. These platforms have a quick turnaround time (30 -60 minutes) but only 1-4 samples can be tested in one run, limiting the maximum numbers that can be tested to 24-48 samples / day. The viral lysis buffer that comes with the COVID-19 cartridges inactivates the virus and poses minimum biosafety hazard. Safety is further augmented by the closed nature of these platforms and minimum sample handling. These features have facilitated use of these platforms at grass root level thereby increasing access to testing.
3. In an effort to ramp up the testing capacity, ICMR has approved a total of 960 labs in public and private sector. However, inspite of these developments in testing, there is an urgent need to introduce rapid point of care diagnostic tests to make testing widely available in all parts of the country.
4. Rapid antigen-based detection assays have been used successfully for early diagnosis of diseases like Malaria, Leishmania, viral and bacterial respiratory infections etc. Such tests can be used as point of care diagnostics in field settings and have minimal biosafety and biosecurity requirements. In view of this, ICMR had been exploring alternate quick and reliable options for diagnosis of COVID-19.

5. ICMR and AIIMS, Delhi independently evaluated the stand-alone rapid point of care antigen detection assay for quick diagnosis of SARS-CoV-2 developed by SD Biosensor with manufacturing unit at Manesar, Gurugram. The assay is known as **Standard Q COVID-19 Ag kit**. On validation, the test has been found to have a very high specificity with moderate sensitivity. ICMR now also recommends use of Standard Q COVID-19 Ag detection test as a point of care diagnostic assay for testing in the containment zones as well as hospitals in combination with the gold standard RT-PCR test. ICMR has issued an advisory dated 14th June 2020. In this regard, which may be accessed at: [https://www.icmr.gov.in/pdf/covid/strategy/Advisory for rapid antigen test 14062020.pdf](https://www.icmr.gov.in/pdf/covid/strategy/Advisory%20for%20rapid%20antigen%20test%2014062020.pdf). The advisory clearly delineates the recommended groups of individuals who should be tested using the antigen detection assay. Key points in the advisory are enclosed as Annexure 1 for your perusal.

6. **Standard Q COVID-19 Ag kit** is available with the local vendor of SD Biosensor. Contact details are as follows:

Dr. CS Bedi

Mobile No: +919810426069

Email: drbedi@icloud.com

ICMR has negotiated the price of the kit. The upper price cap negotiated by the Committee is Rs. 450/-.

For any technical assistance /clarifications, details of the ICMR contact point are given below:

Dr. Sidhartha Giri, Scientist E, ICMR

Mobile No: +918754617892

Email: sidhartha.g@icmr.gov.in

7. **Kindly note that in addition to the details of all the tests conducted by the RT-PCR, TrueNat, CBNAAT, results of Antigen detection assay also need to be entered into the existing ICMR data entry portal where a separate field has been incorporated to accommodate all testing data emerging through the rapid antigen test.**
8. In addition, vide earlier letter No. dated from Secy DHR & DG to all states, ICMR has advised states on use of IgG antibody assays for conducting serosurveys in asymptomatic frontline workers like healthcare workers, sanitation workers, security staff etc. for assessing their serostatus for COVID-19. Guidance of ICMR on the list of available ELISA and CLIA kits can be accessed at [https://www.icmr.gov.in/pdf/covid/kits/ELISA CLIA Kits List 03062020.pdf](https://www.icmr.gov.in/pdf/covid/kits/ELISA%20CLIA%20Kits%20List%2003062020.pdf). As the apex research organization of the country, ICMR is mandated to review and conduct research on the evolving trends of the disease and accordingly advise the states / country on the public health policies. In view of this, I advise you to share all the antibody testing results with ICMR at the email id given below: mmurhekar@gmail.com.
9. Since test, track and treat is the only way to prevent spread of infection and save lives, it is imperative that testing should be made widely available to all symptomatic individuals in every part of the country and contact tracing mechanisms for containment of infection are further strengthened. Therefore, it is advised that all the patients who are being tested by any of the above methods, may be requested to share one personal Identity, issued by Govt. of India to establish the authenticity of the individual. Also, it has been noted that the phone numbers shared by individuals at the time of testing are often

incorrect. Therefore, it is advisable that at the time of testing, a missed call should be given on the shared phone number to verify its correctness,

10. In view of this, I request you all to kindly take required steps to scale up the testing capacity in your respective state by adopting various available testing options, making testing available to all symptomatic individuals in your state. This will enable early detection and containment of infection which in turn would save several lives.

With regards,

Yours sincerely,

Balram Bhargava
(Balram Bhargava)

Copy to:

1. Smt. Preeti Sudan, Secretary (HFW), MOHFW, New Delhi
2. Shri Rajesh Bhushan, OSD, MOHFW, New Delhi
3. All Health Secys of States / UTs

Key points to remember for use of COVID-19 quick antigen detection assay:

- Minimum time taken for RT-PCR test is 2-5 hours.
- Antigen detection test is a rapid point of care test and has no specialized laboratory requirements.
- One nasopharyngeal swab is to be collected and tested **onsite within one hour of sample collection.**
- Sample collection and testing is to be performed by a trained health care worker with proper PPE.
- Can be interpreted between 15 to 30 minutes with a naked eye.
- Kit needs to be stored between 2° to 30° C.

Rapid antigen detection test for COVID 19 can be used to test individuals in the following categories:

A. Containment zones or hotspots:

- i) All symptomatic Influenza Like Illness (ILI).
- ii) Asymptomatic direct and high-risk contacts (with co-morbidities) of a lab confirmed case.

B. Healthcare settings:

- i) All symptomatic ILI patients presenting in a healthcare setting and are suspected of having COVID19 infection.
- ii) Asymptomatic patients in high risk groups: undergoing chemotherapy; immunosuppressed patients; patients suffering with malignant disease; transplant patients; elderly patients (>65 yrs of age) with co-morbidities
- iii) Asymptomatic patients undergoing aerosol generating surgical / non-surgical interventions like elective/emergency surgical procedures: Neurosurgery, ENT surgery, dental procedures; and non-surgical interventions like bronchoscopy, upper GI endoscopy and dialysis;

Interpretation of the test:

Symptomatic Individuals who test negative by the antigen test should be definitely tested sequentially by RT-PCR to rule out COVID19 infection, whereas a positive test should be considered as a true positive and does not need reconfirmation by RT-PCR test.

राज्यामध्ये कोविड -१९ उपाययोजनेतर्गत कोविड
- १९ चाचण्यांचे बळकटीकरण करणेबाबत

महाराष्ट्र शासन

वैद्यकीय शिक्षण व औषधी द्रव्ये विभाग,

शासन परिपत्रक क्रमांक :संकीर्ण-२०२०/प्र.क्र. २७ / औषधे-२
गोकुळदास तेजपाल रुग्णालय आवार, नविन इमारत, ९ वा मजला,
लोकमान्य टिळक मार्ग, मुंबई - ४०० ००९.

दिनांक : २३ जून , २०२०.

वाचा :-

१. आयसीएमआर संस्थेद्वारे Advisory to start rapid antibody based blood test for COVID-19बाबत दिनांक ०४ एप्रिल २०२० रोजी दिलेल्या मार्गदर्शक सूचना
२. सचिव, आरोग्य व कुटुंब कल्याण मंत्रालय, भारत सरकार, नवी दिल्ली याचे पत्र क्रमांक VIP /4/2020/ECD-1 (Vol-J),dated 17.04.2020
३. सचिव, आरोग्य व कुटुंब कल्याण मंत्रालय,भारत सरकार ,नवी दिल्ली यांचे अर्ध शासकीय पत्र क्रमांक ECD/COVID -19/Misc/2020,dated 19.06.2020

सध्या सर्वत्र पसरलेल्या कोविड -१९ संसर्गजन्य आजाराच्या अनुषंगाने विविध उपयायोजना केल्या जात आहेत. कोविड रुग्णांच्या चाचणी करिता अचूकता व एकाचवेळी चार ते पाच तासांच्या कालावधीत ९० नमूने (Sample)तपासणीची क्षमता असणारी Real Time RTPCR या चाचणी प्रणालीस सुवर्ण मानांकित दर्जा प्राप्त आहे.सदर चाचणीसाठी वैशिष्टपूर्ण व सुसज्जता व जैवीक सुरक्षा व सुविधांची आवश्यकता असते.

TrueNat आणि CBNAATया चाचणी प्रणालीचा क्षयरोग व अन्य संसर्गजन्य आजारांचे निदान करण्यासाठी जिल्हा तसेच प्राथमिक आरोग्य केंद्र स्तरावर यशस्वीपणे वापर सदर चाचणी प्रणालीचा विशिष्ट (Customized) स्वरूपाचे कार्टेज वापरून कोविड -१९ चाचण्या केल्या जातात. राज्यामध्ये आजमितीसभारतीय आयुर्विज्ञान अनुसंधान परिषद (आयसीएमआर) संस्थेने मान्यता प्रदान केलेल्या सुमारे १०४, Real Time RTPCR,TrueNat आणि CBNAAT शासकीय व खाजगी कोविड चाचणी प्रयोगशाळा कार्यरत आहेत. तथापी असे असूनही कोविड चाचण्याची क्षमता व त्याचे बळकटीकरण करण्याची नितांत आवश्यकता आहे.याबाबत मलेरिया, लिशमिनीया, तसेच अन्य विषाणू व जिवाणूजन्य श्वसन आजारांच्या शीघ्र निदानामध्ये (early diagnosis)Rapid Antigen based तत्वावर आधारित चाचणी प्रणालीचा वापर करण्यात येतो. सदर धर्तीवर आयसीएमआर संस्था कोविड -१९ तपासणी त्वरीत ,पर्यायी व विश्वसनीय पर्यायाच्या शोधात होती.

त्यानुषंगाने याबाबत उपरोक्त दिनांक १९.०६.२०२० च्या पत्रान्वयेभारतीय आयुर्विज्ञान अनुसंधान परिषद(आयसीएमआर) संस्थेने खालीलप्रमाणे सूचना दिलेल्या आहेत.

१. एसडी बायोसेन्सर या उत्पादकांनी त्यांच्या मनेसर गुरुग्राम येथील उत्पादन युनिटमध्ये SARS - COV-२ या साथरोगाच्या जलद निदान चाचणीकरता Antigen based प्रणालीवर आधारित चाचणीकरीता उत्पादित केलेल्या Standard Q COVID-19 Ag Kitचे आयसीएमआर व एम्स,नवी दिल्ली या संस्थांनी स्वतंत्रपणे मुल्यमापन केले आहे. त्यामध्ये सदर निदान प्रणाली Very high specificity with moderate sensitivity असल्याचे आढळून आले आहे. आयसीएमआर संस्थेने सदर कीटचा प्रतिबंधित क्षेत्र (कन्टेनमेन्ट झोन) व रुग्णालयांमध्ये कोविड निदानाकरिता सुवर्ण मानांकन प्राप्त आरटीपीसीआर प्रणालीसह सदर कीटचा वापर करण्याची शिफारस केलेली आहे. याबाबत आयसीएम संस्थेने दिनांक १४.०६.२०२० अन्वये मार्गदर्शक सूचना निर्गमित केल्याआहेत. सदर पत्र सोबत जोडले आहे. (परिशिष्ट -१) म्हणून जोडले आहे. सदर मार्गदर्शक सूचना खालील संकेतस्थळावर उपलब्ध आहे.
[https://www.icmr.gov.in/pdf/covid/strategy/Advisory_for_rapid_antigen_t est14062020.pdf](https://www.icmr.gov.in/pdf/covid/strategy/Advisory_for_rapid_antigen_test14062020.pdf) सदर प्रणाली कोणत्या घटकांकरिता वापरण्यात यावी याबाबतच्या स्पष्ट शिफारशी आयसीएमआर संस्थेद्वारे तयार करण्यात आले आहे. (परिशिष्ट -२)
२. आयसीएमआर संस्थेने प्रमाणित केलेल्या Standard Q COVID-19 Ag Kit उपलब्धतेबाबतची माहिती आयसीएमआर संस्थेच्या उपरोक्त दिनांक १९.०६.२०२० (परिशिष्ट -३) च्या पत्रात नमूद आहे.
३. आयसीएमआर संस्थेने उपरोक्त कीट संबधी तांत्रिक सहाय्य करिता खालील प्रमाणे अधिकाऱ्याची नियुक्ती केली आहे.

डॉ.सिध्दार्थ गिरी, वैज्ञानिक ई आयसीएमआर

भ्रमणध्वनी क्रमांक - +९१८७५४६१७८९२

ईमेल - Email: sidhartha.g@icmr.gov.in

४. RTPCR, TrueNat आणि CBNAATया चाचण्यांच्या माहिती बरोबर अँटीजन डिटेक्शन तत्त्वारिल चाचण्यांची माहितीसुध्दा प्रचलित आयसीएमआर डेटा एन्ट्री पोर्टलवरील स्वतंत्र रकान्यात भरण्यात यावी याची कृपया सर्वसंबंधितांनी नोंद घ्यावी.

५. सचिव, आरोग्य संशोधन विभाग व महासंचालक यांच्या दिनांक ०३.०६.२०२० (परिशिष्ट -४) पत्राच्या अनुषंगाने आयसीएमआर संस्थेने राज्यास कोविड शोध मोहिमेत आघाडीवर कार्यरत असलेल्या लक्षणेविरहित (asymptomatic) आरोग्य सेवक, स्वच्छता सेवक, सुरक्षासेवक इत्यादींमध्ये कोविडची लक्षणे आहेत किंवा कसे यांची तपासणी करण्यासाठी IgG antibody assays चा वापराबाबत मागदर्शक सूचना दिलेल्या आहेत. आरसीएमआर संस्थेने ELISA आणि CLIA kits च्या वापराबाबतच्या मागदर्शक सूचनांची यादी https://www.icmr.gov.in/pdf/covid/kits/ELISA_CLIA_Kits_List_03062020.pdf या संकेतस्थळावर उपलब्ध आहे. आयसीएमआर संस्थेच्या उपरोक्त दिनांक १९.०६.२०२० च्या पत्रान्वये Antibody चाचणीच्या सर्व निकालाची माहिती mmurhekar@gmail.com या ई मेलवर पाठविणेबाबतचे सूचित केलेले आहे.
६. चाचणी, पाठपुरावा व उपचार (Test, Track and Treat) या कार्यपध्दतीद्वारेच कोविड -१९ संसर्गजन्य आजाराचा प्रतिबंध करणे व मानवी जीव वाचविणे हा एकमेव पर्याय आहे. यास्तवराज्यातील प्रत्येक भागातील कोविड -१९ आजाराची लक्षणे असणाऱ्या प्रत्येक व्यक्तीस कोविड -१९ चाचणी करण्यासाठी व्यापक प्रमाणात सुविधा उपलब्ध करून देणे गरजेचे आहे. तसेच संसर्गाचा प्रतिबंध करण्यासाठी संपर्क शोध यंत्रणांचे अधिक बळकटीकरण करणे आवश्यक आहे. सदर बाबीच्या अनुषंगाने कोणत्याही चाचणी प्रणालीद्वारे कोविड चाचणी करण्याच्या प्रत्येक व्यक्तीची त्यास भारत सरकारने उपलब्ध करून दिलेल्या कोणत्याही ओळखपत्राद्वारे पडताळणी करणे आवश्यक आहे. याबाबत कोविड चाचणी करण्यात येणाऱ्या व्यक्तींनी दिलेले भ्रमणध्वनी क्रमांक चुकीचे असल्याचे निदर्शनास आलेले आहे. सबब सदर चाचणी करण्यास येणाऱ्या व्यक्तीने उपलब्ध करून दिलेल्या भ्रमणध्वनी क्रमांकाची पडताळणी सदर क्रमांकावर Miss Call देवून करणे शक्य आहे. त्याप्रमाणे आवश्यकतेनुसार पडताळणीची कार्यवाही करावी.
७. उपरोक्त वाचा येथे नमूद दिनांक ०४.०४.२०२० (परिशिष्ट - ५)च्या मागदर्शक सूचनानुसार तसेच आरोग्य आणि कुटुंब कल्याण मंत्रालय, नवी दिल्ली यांच्या दिनांक १७.०४.२०२० (परिशिष्ट - ६) नुसार Rapid Antibody चाचणी करणेबाबतच्या मार्गदर्शक सूचना देण्यात आलेल्या आहेत. त्याचप्रमाणे आयसीएमआर संस्थेने प्रमाणित केलेल्या Antibody Test Kitची यादी दिनांक ०३.०६.२०२० आणि १९.०६.२०२० (परिशिष्ट -७) अन्वये प्रसिध्द केलेली आहे. सदर बाबी आयसीएमआर संस्थेच्या खालील संकेतस्थळावर उपलब्ध आहेत

१. https://www.icmr.gov.in/pdf/covid/kits/ELISA_CLIA_Kits_List_03062020.pdf

२. https://www.icmr.gov.in/pdf/covid/kits/Antibody_based_tests_19062020.pdf


८. महाराष्ट्र राज्यातील सर्व शासकीय / निमशासकीय / खाजगी / महानगरपालिका / नगर परिषद / धर्मदाय / खाजगी रुग्णालये तसेच प्रयोगशाळा यांना आयसीएमआर संस्थेने कोविड -१९ चाचणीकरिता Antigen TEST आणि Antibody Test याबाबत निर्देशित केलेल्या मार्गदर्शक सूचनेनुसार सदर Antigen Test आणि Antibody Test चा व्यापक प्रमाणावर वापर करण्यास प्रोत्साहित करण्यात येत आहे. यानुसार त्यांनी त्यांच्याकडे दाखल होणाऱ्या रुग्णांवर आवश्यकतेनुसार सदर चाचण्या कराव्यात आणि या चाचण्यांची माहिती आयसीएमआर संस्थेच्या संकेतस्थळावरील विहित प्रपत्रात नियमित भरावी. सदर चाचण्यांची माहिती सार्वजनिक आरोग्य विभाग (परिशिष्ट-८) (ssumaharashtra@gmail.com) जिल्हाधिकारी / महानगरपालिका / नगर परिषद व इतर संबंधित अधिकृत संस्थांना वेळोवेळी निर्देशित केल्यानुसार नियमितपणे सादर करण्याबाबत कार्यवाही करावी.

९. सेट्रल ड्रग्स स्टॅंडर्ड कंट्रोल ऑर्गनायझेशन (CDSCO) यांनी दिनांक १७.०६.२०२० अन्वये कोविड -१९ च्या "Rapid/CLIA/ELISA kits approved for testing of COVID -१९ with the condition" त्यांच्या संकेतस्थळावर प्रसिध्द केलेली आहे. (परिशिष्ट -९)

भारतीय आयुर्विज्ञान अनुसंधान परिषद (आयसीएमआर) व सेट्रल ड्रग्स स्टॅंडर्ड कंट्रोल ऑर्गनायझेशन (CDSCO) या संस्थांनी दिलेल्या वरील सूचना तसेच याबाबत वेळोवेळी देण्यात येणाऱ्या अद्यावत सूचना / निर्देश इत्यादीच्या अनुषंगाने राज्यातील सर्व शासकीय / खाजगी रुग्णालये आणि शासकीय व खाजगी प्रयोगशाळा यांनी व्यापक प्रमाण प्रमाण कोविड -१९ चाचण्या करण्याबाबत कार्यवाही करावी.

महाराष्ट्राचे राज्यपाल यांच्या आदेशानुसार व नावाने.

सहपत्र : परिशिष्ट १ ते ९.


(डॉ. संजय मुखर्जी)
सचिव, महाराष्ट्र शासन

प्रति,

१. मा. मुख्यमंत्री महोदयांचे प्रधान सचिव, मुख्यमंत्री सचिवालय, मुंबई
२. मा. उपमुख्यमंत्री महोदयांचे सचिव, मंत्रालय, मुंबई
३. मा.मंत्री (वैद्यकीय शिक्षण) यांचे खाजगी सचिव
४. मा. मंत्री (आरोग्य) यांचे खाजगी सचिव, मंत्रालय, मुंबई
५. मा. राज्यमंत्री (वैद्यकीय शिक्षण) यांचे खाजगी सचिव, मंत्रालय मुंबई
६. मा. राज्यमंत्री (आरोग्य) मंत्रालय, मुंबई
७. मा. मुख्य सचिव, महाराष्ट्र राज्य, मुंबई
८. प्रधान सचिव , सार्वजनिक आरोग्य विभाग, मंत्रालय, मुंबई
९. प्रधान सचिव , नगर विकास विभाग, मंत्रालय, मुंबई
१०. प्रधान सचिव , कोरोना नियंत्रण कक्ष , मंत्रालय , मुंबई
११. आयुक्त, मुंबई महानगरपालिका, मुंबई

१२. आयुक्त , अन्न व औषधे प्रशासन, मुंबई
१३. धर्मदाय आयुक्त, महाराष्ट्र राज्य, मुंबई
१४. सर्व विभागीय आयुक्त
१५. सर्व जिल्हाधिकारी
१६. सर्व आयुक्त महानगरपालिका
१७. व्यवस्थापकीय संचालक, हाफकीन जीव औषध निर्माण महामंडळ, मुंबई
१८. संचालक, वैद्यकीय शिक्षण आणि संशोधन, मुंबई
१९. संचालक आरोग्य सेवा संचालनालय, मुंबई
२०. सर्व अधिष्ठाता, शासकीय वैद्यकीय महाविद्यालय व रुग्णालय, मुंबई
२१. सर्व मुख्याधिकारी, नगर परिषद,
२२. सर्व जिल्हा शल्य चिकीत्सक
२३. निवडनस्ती (औषधे-२)

परिपत्रका सोबतच्या परिशिष्टांची सविस्तर माहिती.

परिशिष्ट क्र.	विषय	वेब लिंक
परिशिष्ट-१	ICMR Advisory on Use of Rapid Antigen Detection Test for COVID-१९ दिनांक १४.०६.२०२०.	https://www.icmr.gov.in/pdf/covid/strategy/Advisory_for_rapid_antigen_test१४०६२०२०.pdf
परिशिष्ट - २	ICMR यांचे दिनांक १९.०६.२०२० च्या पत्रामधील प्रपत्र-१ Key points to remember for use of COVID-१९ quick antigen detection assay	----
परिशिष्ट - ३	सचिव, आरोग्य व कुटुंब कल्याण मंत्रालय, भारत सरकार, नवी दिल्ली यांचे अर्ध शासकीय पत्र क्रमांक ECD/COVID -१९/Misc/२०२०, dated १९.०६.२०२०	----
परिशिष्ट - ४	सचिव, आरोग्य संशोधन विभाग व महासंचालक यांचे दिनांक ०३.०६.२०२० चे पत्र.	https://www.icmr.gov.in/pdf/covid/kits/ELISA_CLIA_Kits_List_०३०६२०२०.pdf
परिशिष्ट - ५	आयसीएमआर संस्थेद्वारे Advisory to start rapid antibody based blood test for COVID-१९ बाबत दिनांक ०४.०४.२०२० रोजी दिलेल्या मार्गदर्शक सूचना	https://www.icmr.gov.in/pdf/covid/strategy/Advisory_Antibody_Testing_०४०४२०२०.pdf
परिशिष्ट - ६	आरोग्य आणि कुटुंब कल्याण मंत्रालय, नवी दिल्ली यांच्या दिनांक १७.०४.२०२० नुसार Rapid Antibody चाचणी करणेबाबतच्या मार्गदर्शक सूचना	https://www.icmr.gov.in/pdf/covid/strategy/Rapid_Antibody_test_Protocol.pdf
परिशिष्ट - ७	Guidance on rapid antibody kits for COVID-१९ दिनांक १९.०६.२०२०	https://www.icmr.gov.in/pdf/covid/kits/Antibody_based_tests_१९०६२०२०.pdf
परिशिष्ट - ८	सार्वजनिक आरोग्य विभाग यांचे माहिती भरावयाचा नमूना.	----
परिशिष्ट -९	Central Drugs Standard Control Organization : Rapid/CLIA/ELISA kits approved for testing of COVID -१९ with the condition दिनांक १७.०६.२०२०.	https://cdsco.gov.in/opencms/opencms/system/modules/CDSCO.WEB/elements/download_file_division.jsp?num_id=NTk५Mw==



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कल्याण मंत्रालय, भारत सरकार

Indian Council of Medical Research
Department of Health Research, Ministry of Health
and Family Welfare, Government of India

Advisory on Use of Rapid Antigen Detection Test for COVID-19

Dated: 14th June 2020

Background:

1. Real time RT-PCR is the gold standard frontline test for diagnosis of COVID19. Various open and closed RT-PCR platforms (Open systems RT-PCR machines, TrueNat and CBNAAT) are currently being used for COVID19 diagnosis in India. All these platforms require specialized laboratory facilities in terms of equipment, biosafety & biosecurity. Minimum time taken for the test varies between different systems with a minimum of 2-5 hours including the time taken for sample transportation. These specifications limit the widespread use of the RT-PCR test and also impedes quick augmentation of testing capacity in various containment zones and hospital settings.
2. In view of this, there is urgent need of a reliable point-of-care rapid antigen detection test with good sensitivity and specificity for early detection of the disease.
3. There are no reliable antigen detection tests available worldwide, which could be used as rapid point of care tests for quick detection of COVID-19 positive patients. Such tests would help in proper implementation of the Govt. strategy to test, track and treat. Such tests will also help in allaying the anxiety and fear of healthcare workers and aid in better clinical management of the patients. In view of this, an independent two site evaluation of the only available or stand-alone antigen detection assay available in India, **Standard Q COVID-19 Ag detection kit**, was conducted with an aim to evaluate its sensitivity, specificity and feasibility of use as a point-of-care test for early detection of SARS-CoV-2.
4. **Brief description of the Standard Q COVID-19 Ag detection:**
 - i) **Standard Q COVID-19 Ag detection kit** is a rapid chromatographic immunoassay for qualitative detection of specific antigens to SARS-CoV-2. has been developed by SD Biosensor, a South Korea based company, having its manufacturing unit in Manesar, Gurugram, India.
 - ii) Each test kit comes with an inbuilt COVID antigen test device, viral extraction tube with viral lysis buffer and sterile swab for sample collection.
 - iii) One Nasopharyngeal swab needs to be collected using the customized sample collection swab provided with the kit. No other sample (throat swab, bronchoalveolar lavage or sputum) should be used.
 - iv) After sample collection, the swab should be immersed and squeezed in the viral extraction buffer, provided with the kit. This buffer inactivates the virus thereby reducing biosafety and



biosecurity requirements. The test does not work if the sample is collected in the usual Viral Transport Media (VTM), routinely used for collection of OP/NP swabs.

- v) Once the sample is collected in the extraction buffer, it is stable only for one hour. Therefore, the antigen test needs to be conducted at the site of sample collection in the healthcare setting. Transportation to the lab is not recommended.
- vi) Once the sample goes into the buffer and is mixed properly, the buffer tube cap needs to be replaced with a nozzle provided with the kit and 2-3 drops of the sample with buffer are put into the well of the test strip.
- vii) The test can be interpreted as positive or negative after 15 minutes of putting the sample into the well by appearance of test and control lines, which can be read with a naked eye, requiring no specialized equipment. **Maximum duration for interpreting a positive or negative test is 30 minutes.** After that the test strip should be discarded.
- viii) The test kit should be stored between 2° to 30° C.
- ix) Detailed instructions for use can be accessed through the video link: <https://youtu.be/mBdaOHJWxI4>

5. Validation of the Test:

I. Sites:

Standard Q COVID-19 Ag detection assay by SD Biosensor was evaluated independently by the following agencies:

- i) Indian Council of Medical Research, Delhi; and
- ii) All India Institute of Medical Sciences, Delhi

II. Results:

- i) Standard Q COVID-19 Ag rapid antigen detection test has a very high specificity (i.e. ability to detect true negatives). Specificity ranged from 99.3 to 100% at the two sites.
- ii) Sensitivity of the test (i.e. ability to detect true positives) ranged from 50.6% to 84% in two independent evaluations, depending upon the viral load of the patient. Higher viral load correlated with higher sensitivity.

6. Conclusions and Recommendations:

- i) Standard Q COVID-19 Ag detection assay by SD Biosensor is the standalone antigen detection test which is available in India and has been validated.
- ii) ICMR encourages other manufacturers / developers who have antigen detection assays to come forward for validation.
- iii) **In view of its high specificity while relatively low sensitivity, ICMR recommends the use of Standard Q COVID-19 Ag detection assay as a point of care diagnostic assay for testing in the following settings in combination with the gold standard RT-PCR test:**



A. Containment zones or hotspots (to be performed onsite under strict medical supervision and maintaining kit temperature between 2° to 30° C.):

- i) All symptomatic Influenza Like Illness (ILI).
- ii) Asymptomatic direct and high-risk contacts with co-morbidities (*lung disease, heart disease, liver disease, kidney disease, diabetes, neurological disorders, blood disorders*) of a confirmed case to be tested once between day 5 and day 10 of coming into contact.

B. Healthcare settings (to be performed onsite under strict medical supervision and maintaining kit temperature between 2° to 30° C):

- i) All symptomatic ILI patients presenting in a healthcare setting and are suspected of having COVID19 infection.
- ii) Asymptomatic patients who are hospitalized or seeking hospitalization, in the following high-risk groups:
 - Patients undergoing chemotherapy
 - Immunosuppressed patients including those who are HIV+;
 - Patients diagnosed with malignant disease;
 - Transplant patients;
 - Elderly patients (>65 yrs of age) with co-morbidities (lung disease, heart disease, liver disease, kidney disease, diabetes, neurological disorders, blood disorders)
- iii) Asymptomatic patients undergoing aerosol generating surgical / non-surgical interventions:
 - Elective/emergency surgical procedures like neurosurgery, ENT surgery, dental procedures;
 - Non-surgical interventions like bronchoscopy, upper GI endoscopy and dialysis;

****ILI case is defined as one with acute respiratory infection with fever $\geq 38^{\circ}\text{C}$ AND cough.***

Use of the rapid antigen test is recommended in A & B categories above subject to the following conditions:

- i) **Suspected individuals who test negative for COVID-19 by rapid antigen test should be definitely tested sequentially by RT-PCR to rule out infection, whereas a positive test should be considered as a true positive and does not need reconfirmation by RT-PCR test.**
- ii) **Samples (only nasopharyngeal swabs) to be collected by a trained healthcare worker following full infection control practices including use of proper PPE.**
- iii) **The test should be conducted *on-site* under strict medical supervision and within one hour of sample collection in extraction buffer.**
- iv) **ALL TESTING RESULTS USING THE STANDARD Q COVID-19 AG DETECTION ASSAY MUST ESSENTIALLY BE ENTERED ON THE ICMR COVID-19 PORTAL AND ALSO COMMUNICATED TO THE STATE AUTHORITIES AND OFFICIALS OF THE INTEGRATED DISEASE SURVEILLANCE PROGRAMME (IDSP) ON A REAL-TIME BASIS.**

Annexure 1:

Key points to remember for use of COVID-19 quick antigen detection assay:

- Minimum time taken for RT-PCR test is 2-5 hours.
- Antigen detection test is a rapid point of care test and has no specialized laboratory requirements.
- One nasopharyngeal swab is to be collected and tested **onsite within one hour of sample collection.**
- Sample collection and testing is to be performed by a trained health care worker with proper PPE.
- Can be interpreted between 15 to 30 minutes with a naked eye.
- Kit needs to be stored between 2° to 30° C.

Rapid antigen detection test for COVID 19 can be used to test individuals in the following categories:

A. Containment zones or hotspots:

- i) All symptomatic Influenza Like Illness (ILI).
- ii) Asymptomatic direct and high-risk contacts (with co-morbidities) of a lab confirmed case.

B. Healthcare settings:

- i) All symptomatic ILI patients presenting in a healthcare setting and are suspected of having COVID19 infection.
- ii) Asymptomatic patients in high risk groups: undergoing chemotherapy; immunosuppressed patients; patients suffering with malignant disease; transplant patients; elderly patients (>65 yrs of age) with co-morbidities
- iii) Asymptomatic patients undergoing aerosol generating surgical / non-surgical interventions like elective/emergency surgical procedures: Neurosurgery, ENT surgery, dental procedures; and non-surgical interventions like bronchoscopy, upper GI endoscopy and dialysis;

Interpretation of the test:

Symptomatic individuals who test negative by the antigen test should be definitely tested sequentially by RT-PCR to rule out COVID19 infection, whereas a positive test should be considered as a true positive and does not need reconfirmation by RT-PCR test.



सत्यमेव जयते

प्रोफेसर (डा.) बलराम भार्गव, पदम श्री

एम.डी., डी.एम., एफ.आर.सी.पी (जी.), एफ.आर.सी.पी (ई.), एफ.ए.सी.सी.,
एफ.ए.एच.ए., एफ.ए.एम.एस., एफ.एन.एस., एफ.ए.एस.सी., एफ.एन.ए., डी.एस.सी.

सचिव, भारत सरकार

स्वास्थ्य अनुसंधान विभाग

स्वास्थ्य एवं परिवार कल्याण मंत्रालय एवं

महानिदेशक, आई सी एम आर

Prof. (Dr.) Balram Bhargava, Padma Shri

MD, DM, FRCP (Glasg.), FRCP (Edin.),
FACC, FAHA, FAMS, FNAsc, FASc, FNA, DSc

Secretary to the Government of India

Department of Health Research

Ministry of Health & Family Welfare &

Director-General, ICMR



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भारतीय आयुर्विज्ञान अनुसंधान परिषद

स्वास्थ्य अनुसंधान विभाग

स्वास्थ्य एवं परिवार कल्याण मंत्रालय

भारत सरकार

वी. रामलिंगस्वामी भवन, अंसारी नगर

नई दिल्ली - 110 029

Indian Council of Medical Research

Department of Health Research

Ministry of Health & Family Welfare

Government of India

V. Ramalingaswami Bhawan, Ansari Nagar

New Delhi - 110 029

DO.No.ECD/COVID19/Misc./2020

Dated 19th June 2020

Subject: Ramping up testing for COVID-19 in containment zones and hospitals.

Dear (Chief Secretaries of all states)

1. Real Time RT-PCR is the gold standard test for detecting cases of COVID-19. The test requires specialized laboratory setup with specific biosafety and biosecurity precautions to be followed. Average time taken is around 4-5 hours from receipt of sample to getting the result. The advantage of this platform lies in its accuracy of detection as well as ability to run upto 90 samples in a single run. However, in view of the specialized laboratory requirements, this test cannot be performed at every district level labs which do not have molecular virology facilities.
2. The TrueNat and CBNAAT systems have also been deployed for diagnosis of COVID-19 in view of availability of customized cartridges for COVID-19 diagnosis. These platforms have widespread availability even at district and PHC as these platforms are widely used for diagnosis of Tuberculosis as well as other infectious diseases. These platforms have a quick turnaround time (30 -60 minutes) but only 1-4 samples can be tested in one run, limiting the maximum numbers that can be tested to 24-48 samples / day. The viral lysis buffer that comes with the COVID-19 cartridges inactivates the virus and poses minimum biosafety hazard. Safety is further augmented by the closed nature of these platforms and minimum sample handling. These features have facilitated use of these platforms at grass root level thereby increasing access to testing.
3. In an effort to ramp up the testing capacity, ICMR has approved a total of 960 labs in public and private sector. However, inspite of these developments in testing, there is an urgent need to introduce rapid point of care diagnostic tests to make testing widely available in all parts of the country.
4. Rapid antigen-based detection assays have been used successfully for early diagnosis of diseases like Malaria, Leishmania, viral and bacterial respiratory infections etc. Such tests can be used as point of care diagnostics in field settings and have minimal biosafety and biosecurity requirements. In view of this, ICMR had been exploring alternate quick and reliable options for diagnosis of COVID-19.

5. ICMR and AIIMS, Delhi independently evaluated the stand-alone rapid point of care antigen detection assay for quick diagnosis of SARS-CoV-2 developed by SD Biosensor with manufacturing unit at Manesar, Gurugram. The assay is known as **Standard Q COVID-19 Ag kit**. On validation, the test has been found to have a very high specificity with moderate sensitivity. ICMR now also recommends use of Standard Q COVID-19 Ag detection test as a point of care diagnostic assay for testing in the containment zones as well as hospitals in combination with the gold standard RT-PCR test. ICMR has issued an advisory dated 14th June 2020. In this regard, which may be accessed at: [https://www.icmr.gov.in/pdf/covid/strategy/Advisory for rapid antigen test 14062020.pdf](https://www.icmr.gov.in/pdf/covid/strategy/Advisory%20for%20rapid%20antigen%20test%2014062020.pdf). The advisory clearly delineates the recommended groups of individuals who should be tested using the antigen detection assay. Key points in the advisory are enclosed as Annexure 1 for your perusal.

6. **Standard Q COVID-19 Ag kit** is available with the local vendor of SD Biosensor. Contact details are as follows:

Dr. CS Bedi

Mobile No: +919810426069

Email: drbedi@icloud.com

ICMR has negotiated the price of the kit. The upper price cap negotiated by the Committee is Rs. 450/-.

For any technical assistance /clarifications, details of the ICMR contact point are given below:

Dr. Sidhartha Giri, Scientist E, ICMR

Mobile No: +918754617892

Email: sidhartha.g@icmr.gov.in

7. **Kindly note that in addition to the details of all the tests conducted by the RT-PCR, TrueNat, CBNAAT, results of Antigen detection assay also need to be entered into the existing ICMR data entry portal where a separate field has been incorporated to accommodate all testing data emerging through the rapid antigen test.**
8. In addition, vide earlier letter No. dated from Secy DHR & DG to all states, ICMR has advised states on use of IgG antibody assays for conducting serosurveys in asymptomatic frontline workers like healthcare workers, sanitation workers, security staff etc. for assessing their serostatus for COVID-19. Guidance of ICMR on the list of available ELISA and CLIA kits can be accessed at [https://www.icmr.gov.in/pdf/covid/kits/ELISA CLIA Kits List 03062020.pdf](https://www.icmr.gov.in/pdf/covid/kits/ELISA%20CLIA%20Kits%20List%2003062020.pdf). As the apex research organization of the country, ICMR is mandated to review and conduct research on the evolving trends of the disease and accordingly advise the states / country on the public health policies. In view of this, I advise you to share all the antibody testing results with ICMR at the email id given below: mmurhekar@gmail.com.
9. Since test, track and treat is the only way to prevent spread of infection and save lives, it is imperative that testing should be made widely available to all symptomatic individuals in every part of the country and contact tracing mechanisms for containment of infection are further strengthened. Therefore, it is advised that all the patients who are being tested by any of the above methods, may be requested to share one personal Identity, issued by Govt. of India to establish the authenticity of the individual. Also, it has been noted that the phone numbers shared by individuals at the time of testing are often

incorrect. Therefore, it is advisable that at the time of testing, a missed call should be given on the shared phone number to verify its correctness,

10. In view of this, I request you all to kindly take required steps to scale up the testing capacity in your respective state by adopting various available testing options, making testing available to all symptomatic individuals in your state. This will enable early detection and containment of infection which in turn would save several lives.

With regards,

Yours sincerely,

Balram Bhargava
(Balram Bhargava)

Copy to:

1. Smt. Preeti Sudan, Secretary (HFW), MOHFW, New Delhi
2. Shri Rajesh Bhushan, OSD, MOHFW, New Delhi
3. All Health Secys of States / UTs

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स्वास्थ्य अनुसंधान विभाग, स्वास्थ्य और परिवार
कल्याण मंत्रालय, भारत सरकार

Indian Council of Medical Research
Department of Health Research, Ministry of Health
and Family Welfare, Government of India

Date: 03.06.2020

**LIST OF IgG ELISA KITS FOR COVID 19 VALIDATED BY ICMR IDENTIFIED
VALIDATION CENTRES**

Sl. No	Name of Company	Name of the Kit	*Batch Number
1.	Zydus Cadila Healthcare Ltd., Ahmedabad, Gujarat, India	COVID Kavach ELISA IgG	CoV2HI GG96-001 CoV2HI GG96-002 CoV2HI GG96-003
2.	Euroimmun US Inc., USA	Euroimmun Anti- SARS-COV-2 ELISA IgG	E200420AW
3.	Calbiotech Inc., USA	Erbalisa COVID-19 IgG ELISA	CVG6087

The **IgG ELISA** and **CLIA** tests are recommended only for the following purpose:

- Serosurveys to understand the proportion of population exposed to infection including asymptomatic individuals. Depending upon the level of seroprevalence of infection, matching public health interventions can be implemented for prevention and control of the disease.
- Survey in high risk or vulnerable populations (health care workers, frontline workers, immunocompromised individuals, individuals in containment zones etc) to know who has been infected in the past and has now recovered.

Please Note:

- The ELISA tests have been validated in the laboratory. However, the performance of the test may be subject to variation under field conditions.
- *Above listed ELISA tests are validated with the mentioned batch number only. Responsibility for batch to batch consistency lies with the manufacturer.
- IgG ELISA / CLIA tests which are US-FDA approved** can be used directly after due marketing approval from DCGI.
- Names and contact details of the manufacturers of COVID Kavach IgG ELISA is enclosed for reference.



ICMR has transferred COVID Kavach ELISA IgG technology to below mentioned pharma companies:

S.No.	Name of Company	Contact Details
1	Zydus Cadila Healthcare Ltd	Mr Vivek Kant Tripathi Zydus Corporate Park, 4th Floor, B Wing, Scheme No. 63, Survey No. 536, Near Vaishnodevi Circle, Sarkhej-Gandhinagar Highway, Ahmedabad-382481, Gujarat, India Mobile: +919717273066 Email:vivekkant.tripathi@zyduscadila.com
2	Meril Diagnostics Pvt. Ltd	Mr Paparaidu Sanapala Dy. General Manager(Technical Head) Vapi, Gujarat, India Mobile: +919574144456 Email: paparaidu.sanapala@merillife.com
3	Voxtur Bio Ltd.	Dr Veeraal Gandhi Chairman Plot No. A-1, Royal Compound, Tamanman Kaman Bhivandi Road, Vasai, Palghar, Mumbai-401208, India Mobile: +91-9819720123 Email: veeraal@voxturbio.com
4	Trivitron Healthcare Pvt. Ltd	Mr Nitin Sawant, President D -134, MIDC, Industrial Area, Shirvane, Opposite Dr. D YPatil University, Nerul, Navi Mumbai – 400706, India Mobile: +91 8291282827 Email: santosh.jagtap@trivitron.com
5	J. Mitra & Co. Pvt Ltd	Ms Sangeeta Gupta Head Technical A-180, Okhla Industrial Area, Phase-1, New Delhi - 110020, India Mobile:+918800192205 Email : tcmgr@jmitra.co.in
6	Karwa Enterprises Pvt Ltd	Dr. Vivek Varma, Head – Operations Rapid Diagnostic Group of Companies B-82, Industrial Area, G.T. Karnal Road, New Delhi – 110033, India Mobile: +91 9535998155 Email: drjindal@rdgc.in
7	Avecon Healthcare Pvt Ltd	Mr Rajesh Aggarwal Plot No. 338, Industrial Growth Centre Saha, Haryana- 133104, India Mobile: + 91 9315445391 Email : exportzone@aveconhealthcare.com

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DEPARTMENT OF HEALTH RESEARCH

Advisory to start rapid antibody based blood test for COVID-19 (4 April 2020)

Strategy for areas reporting clusters (containment zone) and in large migration gatherings/evacuees centres

Cases of Influenza Like Illness (ILI) to be monitored in health facilities. Any surge in cases to be monitored and brought to the notice of Surveillance Officer/CMO for additional investigation.

As a matter of abundant precautions, all symptomatic ILI persons should be advised home quarantine for 14 days.

At facility level, symptomatic ILI individuals to be tested using rapid antibody tests.

- **Antibody test negative:**
 - If warranted, confirm by real-time RT-PCR using throat/nasal swab.
 - RT-PCR negative: Likely non-COVID-19 ILI
 - RT-PCR positive: **Confirmed COVID-19 Case** and action as per protocol to be initiated for isolation, treatment and contact tracing.

OR

- If real-time RT-PCR not done, home quarantine and repeat antibody testing after 10 days of the last rapid antibody test.
 - Antibody test negative: Likely non-COVID-19 ILI.
 - Antibody test positive: there is possibility of recent infection, quarantine for another 10 days.
- **Antibody test positive:** After clinical assessment, treatment in hospital or isolation as per protocol. Action as per protocol to be initiated for contact tracing.

If symptoms worsen, refer to designated COVID-19 hospitals.

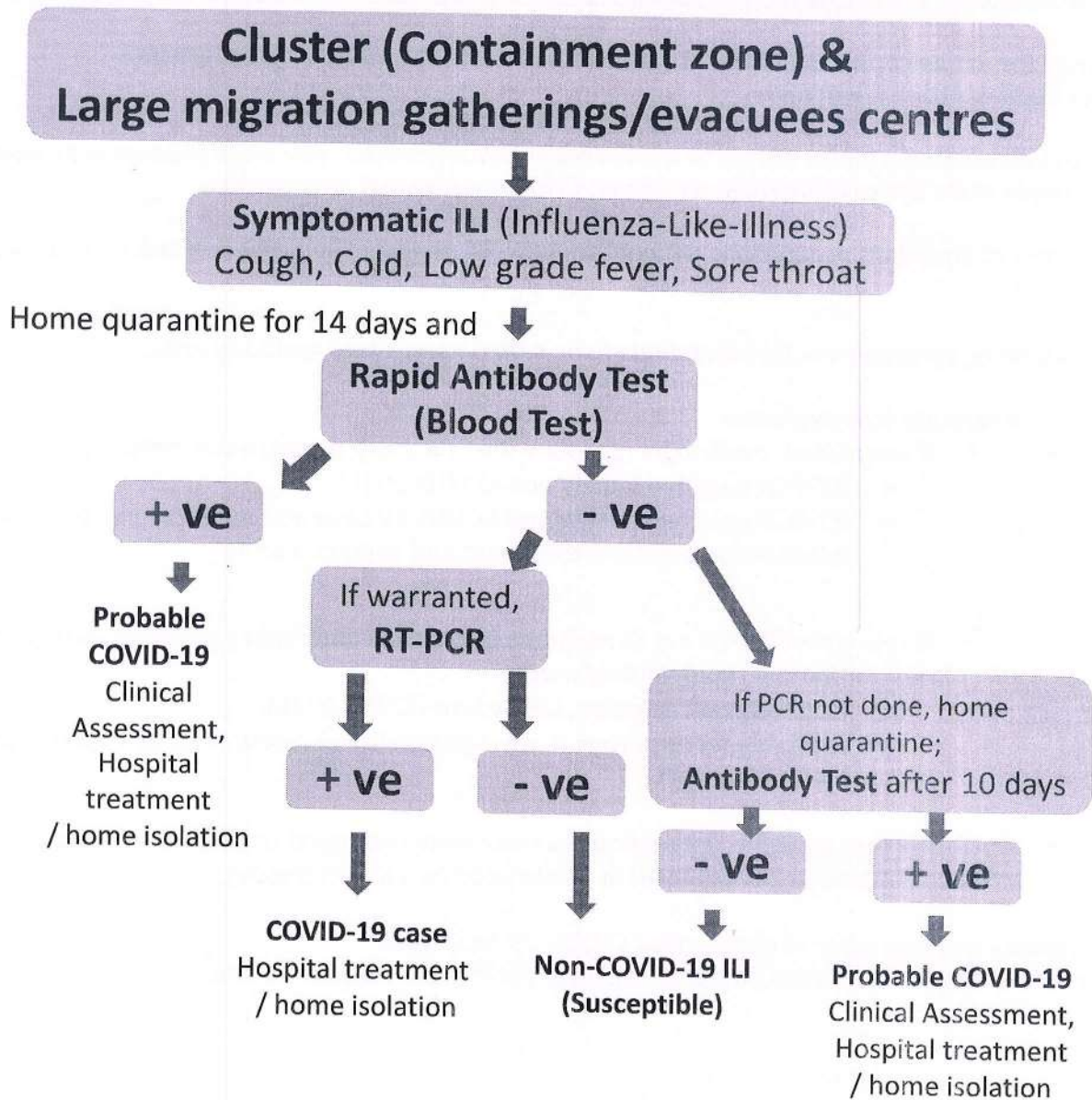
When home quarantine is not feasible, consider facility-based quarantine.

General Guidelines:

- Healthcare workers doing the rapid antibody test to use gloves, mask, and head covers.
- Healthcare workers collecting throat/nasal swab to follow standard national infection control guidelines.
- The rapid antibody tests approved by US-FDA/CE-IVD or non-CE-IVD validated by ICMR-NIV with marketing approval by DCGI be used.
- In order to ensure that all such cases are monitored and necessary action is initiated with respect to infectious disease management, details of all test results shall be uploaded in ICMR portal.
- All such organizations are duty bound to register themselves to ICMR portal and upload the data in real-time.
- Failure to do so, they will be held liable to action under Disaster Management Act, 2005.

STRATEGY FOR USE OF RAPID ANTIBODY BASED BLOOD TEST

(4 April, 2020)



If symptoms worsen, refer to designated COVID-19 hospitals



सत्यमेव जयते

प्रोफेसर (डा.) बलराम भार्गव, पदम श्री
एम.डी., डी.एम., एफ.आर.सी.पी. (जी.), एफ.आर.सी.पी. (ई.), एफ.ए.सी.सी.,
एफ.ए.ए.ए.ए., एफ.ए.ए.ए.ए.ए., एफ.ए.ए.ए.ए.ए., एफ.ए.ए.ए.ए.ए., एफ.ए.ए.ए.ए.ए.,
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Indian Council of Medical Research

Department of Health Research

Ministry of Health & Family Welfare
Government of India

V. Ramalingaswami Bhawan, Ansari Nagar
New Delhi - 110 029

D.O.No. VIR/4/2020/ECD-I (Vol.I)

Dated: 17th April 2020

Addl.Chief Secretaery/Secretary/Principal Secretary Health (All States)

Sub: Protocol for using 'Rapid antibody test' in Hot area – epidemiological studies and surveillance

I am writing to you with reference to the rapid antibody test kits for COVID-19 testing. It is understood that many States intend to use these kits in affected areas.

2. The National Task Force at ICMR has carefully reviewed the data evolving from various countries on use of such kits. Based on available evidence, the testing strategy for COVID-19 has been revised further. The revised document is enclosed for your reference.

3. It is critical to understand the following key facts while using the rapid antibody tests:

- Gold standard frontline test for COVID-19 diagnosis is **real time PCR based molecular test**, which is aimed at early virus detection.
- The rapid antibody test cannot replace the frontline test.
- The rapid Antibody test is a **supplementary tool** to assess the prevalence of the diseases within a specific area / perimeter.
- The rapid antibody test will **only be of utility after a minimum of 7 days of onset of symptoms**.
- Data about these rapid tests is emerging and understanding of their utility for diagnosis is still evolving.
- The rapid tests are useful for **epidemiological studies and surveillance purposes**.
- **THE TEST HAS TO BE DONE UNDER STRICT MEDICAL SUPERVISION.**

4. The enclosed ICMR advisory is for Hot spots. In case your state does not have a Hot spot, these tests may be used for:-

- a) Any hotspot which may emerge in future
OR
- b) As a surveillance tool for epidemiological purposes in such areas where cases have not emerged so far.

5. Before starting the rapid test, it should be registered on covid19cc.nic.in/ICMR and data related to the test should be reported on the same.

With best regards

Yours sincerely

Balram Bhargava
(Balram Bhargava)

Enclosed: As above

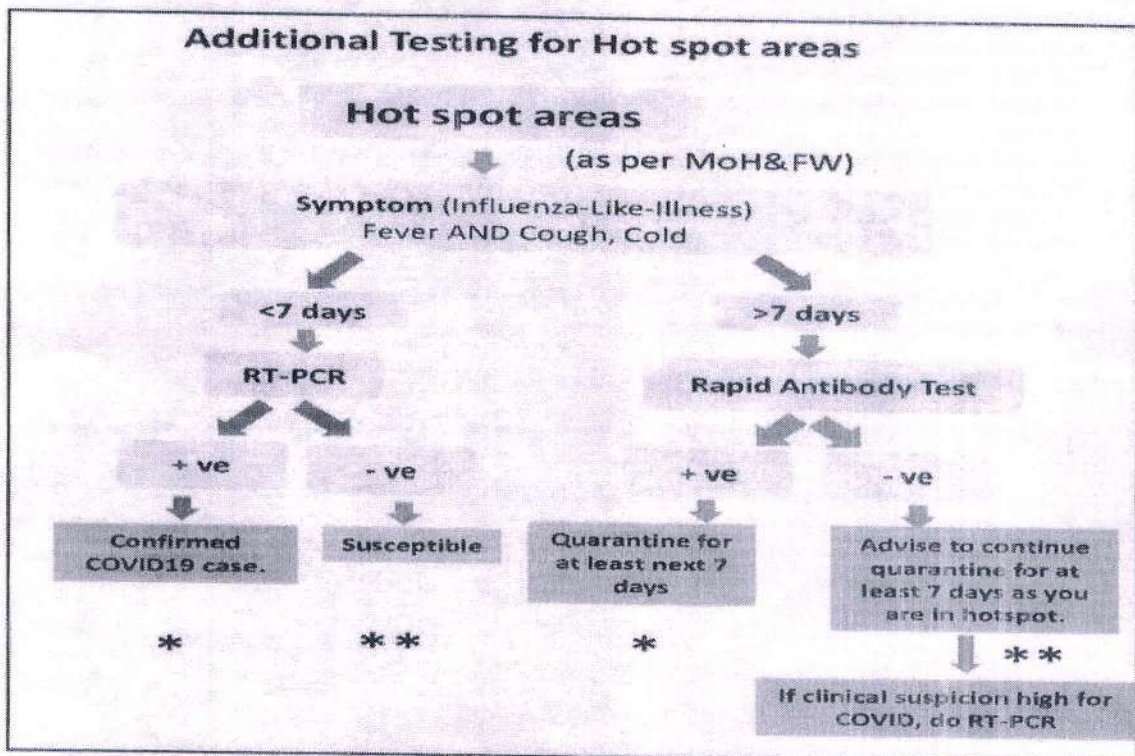
CC: Chief Secretary/Administrators

A. COVID-19 Testing Strategy for India (Recommended for the entire country)

Real-Time PCR (RT-PCR) test and Point-of-Care molecular diagnostic assays are recommended for diagnosis of COVID-19 among individuals belonging to the following categories:

- All symptomatic individuals who have undertaken international travel in the last 14 days
- All symptomatic contacts of laboratory confirmed cases
- All symptomatic health care workers
- All patients with Severe Acute Respiratory Illness (fever AND cough and/or shortness of breath)
- Asymptomatic direct and high-risk contacts of a confirmed case should be tested once between day 5 and day 14 of coming in his/her contact

B. Additional (in addition to A) Testing recommended in hot spots



- * Refer to Hospital if symptoms appear / worsen
- ** Follow precautions, social distancing, use masks, frequent hand washing, avoid unnecessary travel)

Balwan Dhalgum



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कल्याण मंत्रालय, भारत सरकार

Indian Council of Medical Research
Department of Health Research, Ministry of Health
and Family Welfare, Government of India

Date: 19/06/2020

Guidance on rapid antibody kits for COVID-19

Till date, 56 antibody based rapid tests have been validated, and the following were found to be satisfactory. 11 of these kits are manufactured in India.

S.No.	Name of Company	Name of Kit	Lot no./Batch no.
1.	BioMedomics (CE-IVD), China	Biomedomics COVID-19 IgM IgG Rapid Test	20200226
2.	Voxtur Bio Ltd, Surat (Gujarat), India	Coronavirus (COVID-19) IgG/IgM Rapid Test	PCCV200301S
3.	VANGUARD Diagnostics, Delhi, India	COVID-19 IgM/IgG Antibody Detection Card Test	RCOVID200301T
4.	HLL Lifecare Limited, Gurugram (Haryana) India	Makesure COVID-19 Rapid test	CVCT030420 CVCT0204203 CVCT0104202
5.	Lab Care Diagnostics India Pvt. Ltd, Mumbai (Maharashtra), India	ACCUCARE IgM/IgG Lateral Flow Assay kit	CVC 200401
6.	NuLifecare, Noida (Uttar Pradesh), India	Abchek COVID-19 IgM/IgG Antibody Rapid Test	NUL/COV-19/R&D/001
7.	Alpine Biomedicals, Ambala (Haryana), India	One Step Corona Virus (COVID-19) IgM/IgG Antibody Test	A10420 A20420
8.	Medsorce Ozone Biomedicals, Haryana, India	COVID 19 IgM/IgG Rapid Test Kit (ver 2.0)	COV-002
9.	Immuno Science India Pvt. Ltd, Pune (Maharashtra), India	Immuno Quick Rapid Test for Detection of Novel Coronavirus (COVID-19) IgM/IgG Antibodies	E142001
10.	SD Biosensors, Healthcare Pvt. Ltd., Gugugram (Haryana), India	Standard Q Covid -19 IgM/IgG Duo test – One Step Rapid Antibody test	E054002 E054004
11.	BMT Diagnostics (Rafael Diagnostic), Israel	BMT COVID-19 IgG/IgM Rapid Test Kit	COV20030059 COV20030059-1
12.	SIDAK Life Care Pvt. Ltd., New Delhi, India	One Step COVID-19 IgM/IgG Antibody	COVID19S004A COVID19S004B COVID19S004C
13.	Diagnocure, Solan (Himachal Pradesh), India	Xamin COVID-19 Rapid Test Device	DI/COV19/R&D/001 DI/COV19/R&D/002

Rapid antibody tests are not recommended for diagnosis of COVID-19 infection

- Can be done on blood/serum/plasma samples
 - Test result is available within 30 minutes
 - Test may come positive after 7-10 days of infection
 - The test may remain positive for several weeks after infection
 - Positive test indicates exposure to SARS-CoV-2
 - Negative test does not rule out COVID-19 infection
- These rapid antibody test kits have been validated in the laboratory. However, the performance of the kits may be subject to variation under field conditions.
 - Above listed kits are validated with the mentioned batch number only. Responsibility for batch to batch consistency lies with the manufacturer.



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Date: 19/06/2020

Guidance on rapid antibody kits for COVID-19

S. No.	Kit Detail	Lot no./Batch no.
14.	SARS-CoV-2 Antibody test (Lateral flow method): Guangzhou Wondfo Biotech	#
	Mylan Laboratories Limited (CE-IVD)	W19500309
	M R Roofs Private Ltd	W19500302
	Abbott Laboratories	W19500351
	Zydus Cadilla	W19500338
15.	COVID-19 IgM/IgG Antibody Rapid Test: ZHUHAI LIVZON DIAGNOSTICS (CE-IVD)	# CK2003010410

The marketing licenses to the distributors of these 2 companies have been cancelled by the Central Drugs Standard Control Organization (CDSCO).

Antibody based rapid tests which are US-FDA approved can be used directly after due marketing approval from DCGI.

4/2/2020 - 2

8 A LABWISE REPORT

DATE:

GOVERNMENT

SR. NO.	GOVERNMENT LABS	TESTS CAPACITY	NUMBER OF KITS AVAILABLE	TOTAL SAMPLES COLLECTED		TOTAL NUMBER OF POSITIVES		TOTAL NUMBER OF NEGATIVES		TOTAL NUMBER OF RESULTS AWAITED	REMARKS
				TODAY	PROGRESSIVE	TODAY	PROGRESSIVE	TODAY	PROGRESSIVE		

8 A LABWISE REPORT

PRIVATE

SR. NO.	PRIVATE LABS	TESTS CAPACITY	NUMBER OF KITS AVAILABLE	TOTAL SAMPLES COLLECTED		TOTAL NUMBER OF POSITIVES		TOTAL NUMBER OF NEGATIVES		TOTAL NUMBER OF RESULTS AWAITED	REMARKS
				TODAY	PROGRESSIVE	TODAY	PROGRESSIVE	TODAY	PROGRESSIVE		

Rapid / CLIA/ ELISA Kits approved for testing of Covid-19 with the conditions.

Date: 17.06.2020

S. No.	Name of the Firm	Type of Kit	Country
1	M/s CPC Diag. Pvt. Ltd, Chennai	Chemiluminescent Immuno Assay IgG & IgM (CLIA) CE Approved and in Australia	M/s Shenzhen YHLO Biotech Co. Ltd. China
2	M/s LifeSciences, Ahmedabad Eris	Florescent, IgG & IgM	M/s Maccure Biotechnology .Ltd. China CE Approved and in China
3	M/s Healthcare Ahmedabad Cadila Ltd,	Antibody rapid test IgG/IgM	M/s. Hangzhou Clongene Biotech Co.Ltd. China CE Approved
4	M/S Diagnostics Pvt Ltd Mumbai Vishat	Antibody rapid test IgG/IgM	M/S Hangzhou All Test Biotech co Ltd China CE approved
5	S.D. Biosensor Delhi	Fluorescent ANTIGEN Test Rapid	M/s S.D. Biosensor, korea CE Approved
6	M/S Healthcare ,Chennai Trivitron Pvt Ltd	Antibody test IgG/IgM CE approved	M/s Autobio Diag Co Ltd, China
7	M/S Healthcare ,Chennai Trivitron Pvt Ltd	Chemiluminescence Immuno Assay CLIA CE approved	M/s Shenzhen New Industries Biomedical Engineering (SNIBE), China
8	M/S Diagnostics Gurgaon SNIBE (India),	Chemiluminescence Immuno Assay CLIA CE approved	M/s Shenzhen New Industries Biomedical Engineering (SNIBE), China

9	M/S Vishat Diagnostics Pvt Ltd Mumbai	ELISA CE approved	M/S Zhengzhou Human well Biocel Technology Ltd China
10	M/s Sowar Private Ltd Delhi	Rapid Antibody test IgG/IgM CE approved	M/S Getein Biotech Inc China
11	M/S Immunoshop India Pvt Ltd Thane	Chemiluminescence Immuno Assay CLIA CE approved	M/s Shenzhen New Industries Biomedical Engineering (SNIBE), China
12	M/S Athenese Dx Pvt Ltd Chennai	Rapid Antibody test IgG/IgM CE approved	M/s Beijing Genese Biotech Inc , China
13	M/S Bioline Diagnostics , Delhi	Antibody test IgG/IgM CE approved	M/S Hangzhou All Test Biotech co Ltd China CE approved
14	M/S Immunoshop India Pvt Ltd Thane	Antibody test IgG/IgM CE approved	M/s Goldsite Diagnostics Inc, China
15	Accurex Biomedical Pvt Ltd, Thane	Antibody test IgG/IgM CE approved	M/S Getein Biotech Inc, China
16	Indelox Global Distribution, Pvt Ltd, Bangalore	Antibody test IgG/IgM CE approved	M/S Dongguan Bosh Biotechnology China
17	M/S POCT Services Pvt Ltd Delhi	Antibody test IgG/IgM CE approved	M/S Zybo Inc China
18	M/S Krishgen Biosystems Mumbai	Antibody test IgG/IgM CE approved	M/sWuhan UNScience Biotechnology co Ltd, China
19	M/s Rapid Diagnostics Pvt Ltd Delhi	Antibody test IgG/IgM CE approved	M/s Hangzhou Biotech Co Ltd China
20	M/s PTS Diagnostics India Pvt. Ltd.	Antibody test IgG/IgM CE approved	M/s Changsha Sinocare Inc China
21	M/s Gland Pharma	Antibody test IgG/IgM CE approved	M/S Shanghai Fosun Long March, China
22	M/s Accredited Consultant Pvt Ltd	Antibody test IgG/IgM CE approved	M/S Hangzhou All Test Biotech co Ltd China
23	M/s Accredited Consultant Pvt Ltd	Antibody test IgG/IgM CE approved	M/S Humasis Co Ltd Korea
24	M/s Cosmic Scientific Chennai	Antibody test IgG/IgM CE approved	M/S Getein Biotech Inc, China
25	M/S Agappe Diagnostics Ltd	Antibody test IgG/IgM CE approved	M/s Hangzhou Biotech Co Ltd China

26	M/S Triviron Healthcare Ltd	Antibody test IgG/IgM CE approved	M/S Beijing Lepu Medical Technology Co Ltd China
27	M/S Rafael Diagnostics, Pune	Antibody test IgG/IgM CE approved	M/S BMT Diagnostics Israel
28	M/S Matrix Lab Chennai	CLIA CE Approved	Auto-biodiagnostics Co Ltd China
29	M/S Providence International Labs	Antibody test IgG/IgM CE approved	M/S Hangzhou Reality Tech Co Ltd
30	M/S Voxtur Bio Ltd	Antibody test IgG/IgM	Indigenous
31	M/S Vanguard Diag Pvt Ltd	Antibody test IgG/IgM	Indigenous
32	M/S S.D.Biosensor, Pvt Ltd	Antibody test IgG/IgM Duo(Standard Q)	M/s S.D . Biosensor, Inc South Korea
33	M/S Weldon Biotech(I) Pvt.Ltd.	iChrome FIA(Fluoracence ImmunoAssay) Covid-19 Ab	M/s Boditech Med Inc. Korea
34	M/s HLL	Antibody test IgG/IgM	Indigenous
35	M/s Raymed Trading Group Pvt. Ltd.	Antibody test IgG/IgM CE approved	M/S Beijing Lepu Medical Technology Co Ltd China
36	Hemogenomics Pvt. Ltd. Bangalore	Antibody test IgG/IgM CE approved	M/S PCL Inc. South Korea
37	M/s Aracion Technology Pvt. Ltd	Antibody test IgG/IgM CE approved	M/S Hecin Scientific Inc. China
38	M/s CPC Diagnostics Pvt. Ltd.	Anti SAR- COV-2 ELISA IgA/ IgG	M/s Euroimmune AG Germany
39	M/s Bilcare Ltd. Pune	Antibody test IgG/IgM CE approved	M/S Getein Biotech Inc, China
40	M/s Bravo Pharmaceuticals Pvt. Ltd.	Antibody test IgG/IgM CE approved	M/s Biosynex S.A France
41	M/s Harmony LifeSciences Pvt. Ltd.	Antibody test IgG/IgM CE approved	M/s Humasis Co. Ltd. South Korea
42	M/s Inbios India, New Delhi	Antibody test IgG/IgM CE approved	M/S Getein Biotech Inc, China
43	M/s Imperial LifeSciences Pvt. Ltd	Antibody test IgG/IgM CE approved	M/s NewScen Coast Biopharmaceutical Co. Ltd. China

44	M/s POCT Services Pvt. Ltd.	Antibody test IgG/IgM CE approved	M/s Gen Body Inc. South Korea
45	M/s Trivitron Healthcare Pvt. Ltd.	Antibody test IgG/IgM CE approved	M/s Innovita(Tang Shen) Biological Technology Co. Ltd. China
46	M/s Concept HealthCare	Antibody test IgG/IgM CE approved	M/s Celtex Biotech(Suzhou) Co. Ltd. China
47	M/s Bio Innovations Thane	Antibody test IgG/IgM CE approved	M/s Primer Design Ltd. U.K
48	M/s AR KAY Medicos Pvt. Ltd.	Antibody test IgG/IgM CE approved	M/s Humasis Co. Ltd. South Korea
49	M/s Kin Diagnostics West Bengal	FIA iChroma IgG/IgM CE approved	M/s Boditech Med Inc. South Korea
50	M/S Aracion Technology Pvt LTd	Antibody test IgG/IgM CE approved	M/s Innovita(Tang Shen) Biological Technology Co. Ltd.China
51	M/S Meridian Medicare LTD	Antibody test IgG/IgM CE approved	M/s Gen Body Inc. South Korea
52	M/S SD Bio Sensor Healthcare Pvt Ltd	Standard Q COVID-19 IgG/IgM Duo	Indigenous
53	M/S Tara Medicos Pvt Ltd Jaipur	Antibody test IgG/IgM CE approved	M/S CELLEX INC,CHINA
54	M/s Med Source Ozone Biomedicals Pvt Ltd	COVID-19 IgG/IgM Rapid Test	Indigenous
55	Immunoscience India Pvt Ltd	COVID-19 IgG/IgM Rapid Test	Indigenous

56	M/s S.D Biosensor Healthcare Pvt. Ltd.	Standard Q Covid-19 IgG/IgM Combo	M/s S.D Biosensor Inc. Korea
57	M/s BioHouse Solutions Pvt. Ltd. Delhi	COVID-19 IgG/IgM Rapid Test	M/s Bio Medomics Inc. USA
58	M/s True Healthcare India Pvt. Ltd.	Antibody test IgG/IgM CE approved	M/s Humasis Co. Ltd. South Korea
59	M/s Immunoshop India Pvt. Ltd.	Antibody test IgG/IgM CE approved	M/S Shenzhen Cifotronic Technology Ltd. China
60	M/s Clini Experts Services Pvt. Ltd.	Antibody test IgG/IgM CE approved	M/s Biocan Diagnostics Inc. Canada
61	M/s Inbios India, Delhi	Antibody test IgG/IgM CE approved	M/S CELLEX Biotech (Suzhou) Co. Ltd ,CHINA
62	M/S Synergy Scientific Services Pvt Ltd	Antibody test IgG/IgM CE approved	M/S Schenzhen Reagent Technology Co Ltd China
63	M/S Bioscience Sales Corp. Delhi	Antibody test IgG/IgM CE approved	M/S Shenzhan Watmind Medical Co. Ltd , China
64	M/s Gastro Lab India Pvt Ltd	Antibody test IgG/IgM CE approved	M/S Sche Bo Biotech AG, Germany
65	M/S Doctor Analytical Laboratories Pvt Ltd	Antibody test IgG/IgM CE approved	M/s Biocan Diagnostics Inc. Canada

66	M/S MDAAC International Pvt Ltd	Antibody test IgG/IgM CE approved	M/S Atlab Link(Beijing) Technology Co Ltd , China
67	M/S Kin Diagnostics	Antibody test IgG/IgM CE approved	M/S Sugentech Inc South Korea
68	M/s Alere Medical Pvt. Ltd.	PanBio Antibody test IgG/IgM CE approved	M/s Abbott Rapid Diagnostics Germany Having Mfg. Site at Abon Biopharma(Hangzhou) Co. Ltd. China
69	M/s Incarp Instruments Pvt. Ltd. Hyderabad	FIA IgG/IgM AntiBody Test CE approved	M/s Boditech Med Inc. South Korea

70	M/s Nucleus 18 Turnkey Projects Pvt. Ltd. Telangana	Antibody test IgG/IgM Australian EUA	M/s Innovita (Tangshan) Biological Technology Co. Ltd. China
71	M/S Elder Projects Ltd Mumbai	Antibody test IgG/IgM CE approved	M/S Shanghai Outdo Biotech Co Ltd China
72	M/S KDH Biomedicals Pvt Ltd Mumbai	Antibody test IgG/IgM CE approved	M/s Dynamiker Biotechnology (Tianjin) Co Ltd China
73	M/S KDH Biomedicals Pvt Ltd Mumbai	ELISA IgG and ELISA IgM/IgA CE approved	M/s Dynamiker Biotechnology (Tianjin) Co Ltd China
74	Bio Dx Healthcare New Delhi	Antibody test IgG/IgM CE approved	M/S Zybio Inc, China
75	M/s Triviron Healthcare Pvt LTD	Antibody test IgG/IgM CE approved	M/s Shenzhen Lifotronic Technology Co. Ltd. China
76	M/s Saffron Naturele Product Pvt. Ltd. U.P	Antibody test IgG/IgM CE approved	M/s Hangzhou Clongene Biotech Co. Ltd. China
77	M/s Bioplus Healthcare Pvt Ltd Bangalore	Antibody test IgG/IgM CE approved	M/s Cellex BioTech (Suzhou) Co. Ltd. China
78	M/s N.W Overseas, Haryana	Antibody test IgG/IgM CE approved	M/s Beijing Lepu Medical Technology Co. Ltd. China
79	M/s Premier Nutraceuticals Pvt. Ltd.	Antibody test IgG/IgM CE approved	M/s Shanghai Outdo Bio Tech Co. Ltd. China
80	M/s Genetix BioTech Asia Ltd..	Antibody test IgG/IgM	M/s Sugentech Inc. South Korea
81	M/S Alpine Biomedicals Pvt Ltd Haryana	Rapid Antibody test IgG/IgM	Indigenous
82	S A Diagnostics Pvt Ltd Mumbai	Antibody test IgG/IgM	M/S Genrui Biotech Inc China
83.	M/s Abbott Healthcare Pvt Ltd	Chemiluminescent Microparticle Immunoassay With Architect System	M/S Abbott Ireland Diag Div. Ireland
84	M/s Lab Care Diag, India Pvt Ltd	Antibody test IgG/IgM	Indigenous

85	M/S Nulife, Noida	Antibody test IgG/IgM	Indigenous
86	M/s Tulip Diagnostics Pvt Ltd Goa	Coviscreen-Rapid Double Antigen test for detection of IgG/IgM/IgA	Indigenous
87	M/s Roche Diagnostics India Pvt. Ltd. Delhi	ECLIA Elecys Anti SARS COV2	M/s Roche Diagnostics GmbH, Germany
88	M/s Sidak LifeCare Pvt. Ltd.	Antibody test IgG/IgM	Indigenous
89	M/s S.D Biosensor HealthCare Pvt. Ltd.	Standard Q COVID-19 IgG/IgM Combo	Indigenous
90	M/s Diasorin Healthcare India Pvt. Ltd.	CLIA	M/s Diasorin S.P.A, Italy
91	M/s Iris Hightech Pvt. Ltd. Delhi	Antibody test IgG/IgM	M/s Pharmact GmbH, Germany
92	M/s Mindray Medical India Pvt. Ltd. Mumbai	CLIA	M/s Shenzhen Mindray, China
93	M/s Ortho Clinical Diagnostics India Pvt. Ltd.	Vitros Immunodiagnostic Total Reagent Pack	M/s Ortho Clinical Diagnostics, USA
94	M/S DiaSys Diagnostics India Pvt Ltd	Antibody test IgG/IgM	M/S Beijing Lepu Medical Technology Co Ltd China
95	M/S Jetta Labs	Antibody test IgG/IgM	M/s Hangzhou Test Sea Biotechnology China
96	M/s V.S Yarns Pvt. Ltd. Ludhiana	Antibody test IgG/IgM	M/s Accobiotech, Malaysia
97	M/s CliniExperts Services Pvt. Ltd	Antibody test IgG/IgM	M/s Europlaz Technologies, U.K
98	M/s Cadila Healthcare Ltd.	ELISA	Indigenous

99	M/s Deep Meditech Pvt. Ltd. Delhi	Antibody test IgG/IgM	M/s Autobio Diag Co Ltd, China
100	M/S McW Healthcare Pvt Ltd	Antibody test IgG/IgM	M/s Technogenetics S.r.l Italy
101	M/S Omega Dx (Asia) Pvt Ltd	ELISA	M/S Genesis Diagnostics Ltd , UK
102	M/S Abbott Healthcare Pvt Ltd	CMIA	M/S Abbott Ireland
103	M/S Ortho Clinical Diag. India Pvt. Ltd	CLIA, IgG qualitative immunodiagnostic assay kit	M/S Ortho clinical Diag. UK
104	M/S Ortho Clinical Diag. India Pvt. Ltd	VITROS (Immunodiagnostic Assay Kit) including IgG,IgA and IgM	M/S Ortho clinical Diag. UK
105	M/S Athenese-Dx Pvt. Ltd	Antibody test IgG/IgM	M/S CTK Biotech Inc, USA
106	M/S Tosoh India Pvt Ltd	ELISA IgA, ELISA IgG, ELISA IgM	M/S NovaTec GmbH, Germany
107	M/S Biorad Laboratories (India) Pvt Ltd	Platellia SARS-COV2 Total Ab	M/S Biorad , France
108	M/S Novomed Inc Pvt Ltd	ELISA IgG/IgM	M/S Ga Generic Assay GmbH Germany
109	M/S Ortho Clinical Diag. India Pvt. Ltd	CLIA , Vitros IgG	M/S Ortho clinical Diag. UK
110	M/S S D Biosensor Healthcare Pvt Ltd	Standard Q COVID-19Ag	Indigenous
111	M/S J. Mitra	COVID IgM+IgG+IgA Microlisa	Indigenous

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इमेल द्वारे

जा. क्र. कोविड उ.यो./कोविड किट/१४६४-२०/११

दि. १६जून, २०२०

प्रति,

मा. सचिव
वैद्यकीय शिक्षण व औषधी द्रव्ये विभाग
मंत्रालय, मुंबई-०१

विषय :- COVID-१९ च्या नैदानिक चाचणी करिता वापरण्यात येणाऱ्या Rapid टेस्ट किट बाबत.

महोदय

विषयांकित प्रकरणी शासनास सादर करण्यात येते कि, औषध नियंत्रक (भारत) यांचेद्वारा कोविड १९ च्या चाचणी करिता मान्यता देण्यात आलेल्या Rapid Antigen Test Kit आणि Antibody Rapid Test kit चे उत्पादन व विक्री करणाऱ्या संस्थांची यादी त्यांचे संकेतस्थळ cdsco.gov.in वर प्रसिद्ध केली आहे. सदर यादी ची प्रत यासोबत जोडली आहे.

भारतीय आयुर्विज्ञान अनुसंधान परिषदेने दि. १४/०६/२०२० रोजी त्यांचे संकेतस्थळावर Rapid Antigen detection test for COVID-१९ च्या वापराबाबत मार्गदर्शक सूचना प्रसिद्ध केल्या आहेत.

वरील सर्व बाबी विचारात घेता, औषध नियंत्रक (भारत) यांनी मान्यता दिलेल्या Rapid antigen kit and Rapid antibody किट चा वापर शासनाच्या अखत्यारीतील सर्व यंत्रणा जसे वैद्यकीय शिक्षण विभाग व सार्वजनिक आरोग्य विभाग यांचे अखत्यारीतील रुग्णालये, प्रयोगशाळा, केंद्र शासनाची रुग्णालये, खाजगी रुग्णालये व प्रयोगशाळा इ, भारतीय आयुर्विज्ञान अनुसंधान परिषद (ICMR) ने वेळोवेळी निर्गमित केलेल्या मार्गदर्शिकेनुसार(Advisory Notice) कोविड १९ च्या चाचणी करिता करू शकतात.

तरि आपल्या माहितीस्तव सविनय सादर.

आपला

अरुण उन्हाळे, भा.क्र.स.

आयुक्त

अन्न व औषध प्रशासन, महा. राज्य

मुंबई-५१

Ministry of Family & Health Welfare
Directorate General of Health Services
EMR Division

Guidance document on appropriate management of suspect/confirmed cases of COVID-19: Railway Coaches - COVID Care Centre

Scope of the document:

Considering the possibility of increase in cases of COVID-19, a view is taken to utilize Railway coaches for COVID Care Centre. Railway coaches will be used for the cases suspected/ confirmed, and categorized into very mild/ mild as per the document: **Guidance document on appropriate suspect/confirmed cases of COVID-19** put on MoHFW website on dated **07.04.2020**.

Aims:

1. To observe the patients as mentioned in scope for their symptoms and clinical condition.
2. In case of change of the symptoms/ clinical conditions, suitable reference to the designated centre/ hospital for further management.

Guiding Principles:

1. All the procedures will be adopted as per the aforesaid document of EMR Division, Ministry of Family & Health Welfare, put on website on 07.04.2020.
2. Separate coaches for suspect and confirmed cases should be ensured to avoid cross infection.
3. As far as possible, wherever cases are admitted in the COVID Care Center coach, preferably individual cabin should be assigned for each case. Should the situation warrant, up to a maximum of two confirmed patients can be assigned in individual cabin.

Standard Operating Procedures:

1. The Ministry of Railways, as its contribution to national cause, has initiated conversion of Railway Coaches into COVID Care Centers to provide additional beds for COVID-19 patients as and when required.

2. The special train coaches, after formation shall be cleaned, and disinfected as per protocol for disinfection of quarantine facilities issued by Ministry of Health and Family Welfare (available at <https://www.mohfw.gov.in/pdf/90542653311584546120quartineguidelines.pdf>).
3. A list of 215 stations where the special train coaches can be placed is attached at Annexure I. (as allied facilities to make these coaches operational like watering and electricity may not be available at all stations).
4. Railways will designate state wise nodal officers for allocation of trains and for coordinating with the respective State/UT Government. The Railways will share the list of their nodal officers, with the States/UTs. The States\UTs shall also designate a nodal officer for coordination with Railways.
5. State/UTs would send their requisition through their nodal officer to the nodal officer of Railways following which the Railways will make allocation of these coaches to the State/UTs.
6. After the allocation by the Railways, the train shall be placed, at required station with necessary infrastructure, and handed over to District Collector/ District Magistrate or one of their authorized persons.
7. The State Government shall map at least one COVID Dedicated Hospital for each train so that patient can be shifted to the hospital in case of emergency. The State\UT Government shall make suitable ambulance arrangements for shifting the patient. Preferably one Basic Life Support Ambulance with oxygen and ambubag should be stationed at the Railway Station where the train is placed.
8. In the list of stations (Annexure I), as indicated in the list, there are 85 stations where the Railways shall provide necessary healthcare staff.
9. The respective State/UT government may place a request for placing the coaches at the other 130 stations only if they agree to provide staff and essential medicines at such stations.
10. The Railways would be responsible for provision of all the items as prescribed by the MoHFW for the COVID Care Centers, including arrangements for oxygen cylinders in each coach & other necessary items such as including linen etc.
11. Para-medical staff on train shall do bio medical waste segregation at source. The respective State\District shall do waste disposal

- arrangements following the mechanism being followed for hospitals in the respective State\District.
12. The staff deployed on the special train coaches would work under the overall supervision of the Chief Medical and Health Officer (CMHO) of the concerned District or the nodal officer identified by the respective District Collector\Magistrate.
 13. Standard Treatment Protocols of the Ministry shall be followed for management of cases. The staff deployed at the special train coaches shall be suitably oriented\trained, wherever necessary.
 14. Wherever the train is stationed, Rolling Stock Department of Railways shall make arrangements for watering of coaches regularly, any repairs required in coaches, and also for replenishment of Chlorine tablets at the bio-toilet discharge.
 15. Electrical Department shall make arrangements for provision of proper electricity connections to the coaches and maintenance of electric installations.
 16. For any repairs required in infrastructure or any additions to be made or in case of any emergency of such nature, the contact number of local railway authority would be shared with the State where the train is stationed.
 17. Wherever required, catering arrangements shall be made by IRCTC/ Commercial Department.
 18. Railway Protection Force shall ensure suitable security to the coaches, patients and staff working there.
 19. Proper signages shall be placed outside railway stations, platforms and near location of coaches to guide authorities and patients to the coaches in a way that they are separate from the general public using the railway facilities.
 20. Should the need arise for coach temperature management, arrangement for roof top insulation of the coach or any other suitable arrangement shall be made through local arrangements by Railways.
 21. One changing facility for doffing at end of the train on platform where the train is parked is required to be provided. This facility, if not available as a permanent set up, may be provided as a temporary arrangement, by the Railways.
 22. As a special case, Ministry of Environment & Forest and Climate change has provided one-time exemption from registration of train coaches for the purpose of generating hospital waste. However, the guidelines issued by Central Pollution Control Board/State Pollution

Control Board related to treatment of COVID-19 patients shall be strictly followed.

23. When the train is handed back to Railways, the staff deployed for the train shall ensure all biomedical waste bins are cleaned and emptied; the train cleaned and disinfected, and then handed over to authorized staff after tallying the inventory. The Railway staff shall again disinfect the train as per protocol issued by Ministry of Health and Family Welfare from time to time and lock it till further orders.
24. In case the train is requisitioned by Railway Authorities, they shall also follow the above guidelines.

Annexure - I					
List of stations where special train coaches converted to COVID Care Centers can be placed					
Sr. No.	State	Name of STATION	Availability of healthcare staff from Railways	Nodal Officer for the Station	Mobile Number
1	Andhra Pradesh	VISHAKHAPATTANAM	YES	Dr. B. Samanta	8978080506
2	Andhra Pradesh	Vijaywada	YES	M D Naik	9710374500
3	Andhra Pradesh	Guntur	No		
4	Andhra Pradesh	Palasa (PSA)	No		
5	Andhra Pradesh	Vijayanagram (VZM)	No		
6	Andhra Pradesh	Renigunta	No		
7	Andhra Pradesh	Manthralayam Road (MALM)	No		
8	Andhra Pradesh	Kondapuram (KDP)	No		
9	Andhra Pradesh	Diguvameta (DMT)	No		
10	Assam	GAUHATI	YES	DR. P.N. MAHESWARI	9957550501
11	Assam	NEW BONGAIGAON	YES	DR. A. ROY	7002599401
12	Assam	LUMBDING	YES	DR. S.K. CHAKRAVARTY	9957553500
13	Assam	DIBRUGARH	YES	DR. BASUDEV ROY	9957555511
14	Assam	Badarpur (BPB)	YES	DR. S.K. DESHMUKH	9957553501
15	Assam	NEW TINSUKIA	YES	DR. B.C. ROY	9957555500
16	Assam	Rangapara North	YES	DR. R. PRASAD	9957554501
17	Assam	KAMAKHYA	YES	DR. P.N. MAHESWARI	9957550501
18	Assam	RANGIYA	No		
19	Assam	SILCHAR	No		
20	Assam	SILIGURI	No		
21	Assam	Mariani (MXN)	No		
22	Assam	MURKONGSELEEK	No		
23	Bihar	SONEPUR	YES	Dr. P K Singh	9771429500
24	Bihar	SAMASTIPUR	YES	Dr Govind Prasad	9771489500
25	Bihar	PATNA	YES	Dr Shyamal Das	9771425501
26	Bihar	KATIHAR	YES	DR. B.K. CHOUDHURY	9771441500
27	Bihar	Narkatiaganj (NKE)	No		
28	Bihar	SAHARSA	No		
29	Bihar	DARBHANGA	No		
30	Bihar	BAGHALPUR	No		
31	Bihar	MUZAFFARPUR	No		
32	Bihar	CHHAPRA	No		
33	Bihar	Siwan (SV)	No		
34	Bihar	BARAUNI	No		
35	Bihar	RAXAUL	No		
36	Bihar	Sitamarhi (SMI)	No		
37	Bihar	Jainagar	No		
38	Chattisgarh	BILASPUR	YES	Dr. Biswajit Chakrabarty	9752876501
39	Chattisgarh	Raipur	YES	Dr. K C Bag	9752877503
40	Delhi	NEW DELHI	YES	Dr MB Shankhwar	9717630501
41	Delhi	Delhi	YES	Dr Man singh	9717631500
42	Delhi	Hazrat Nizamuddin	YES	Dr MB Shankhwar	9717630501
43	Goa	VASCO DE GAMA	No		
44	Gujarat	AHMEDABAD	YES	Dr. Alok Srivastava	9724093500
45	Gujarat	RATLAM	YES	Dr. A.K. Malviya	9752492500
46	Gujarat	RAJKOT	YES	Dr. R.V.Sharma	9724094525
47	Gujarat	Bhavnagar (BVC)	YES	Dr. P. wagh	9724097505
48	Gujarat	Vadodara	YES	Dr. Brahmaprakash	9724091500
49	Gujarat	Valsad	YES	Dr Haldar	9724099032
50	Gujarat	Gandhidham (GIM)	YES	Dr. Alok Srivastava	9724093500
51	Gujarat	SURAT	No		
52	Gujarat	New Bhuj	No		
53	Gujarat	OKHA	No		
54	Gujarat	Verawal (VRL)	No		
55	Haryana	AMBALA CANTT	YES	Dr CS Anand	9729539500
56	Haryana	REWARI	No		
57	Haryana	HISAR	No		
58	Haryana	Bhiwani (BNW)	No		
59	Jammu & Kashmir	JAMMU TAWI	No		
60	Jammu & Kashmir	SRI VAISHNO DEVI KATRA	No		
61	Jharkhand	DHANBAD	YES	Dr. G.N. Panda	9771426500
62	Jharkhand	CHAKRADHARPUR	YES	Dr.S.K.Mishra	9771482500
63	Jharkhand	RANCHI	YES	Dr. G C Hembram	9771484500 9771484502

Sr. No.	State	Name of STATION	Availability of healthcare staff from Railways	Nodal Officer for the Station	Mobile Number
64	Jharkhand	TATA	YES	Dr.S.K.Behera	9771482517
65	Jharkhand	GOMOH	No		
66	Jharkhand	MURI	No		
67	Jharkhand	Barkakana (BRKA)	No		
68	Karnataka	Hubli	YES	Dr.G.S.Ramachandra	9731665514
69	Karnataka	Bangalore	YES	Dr.M.Ravindran	9731666500
70	Karnataka	Mysuru Jn	YES	Dr.Meera patil	9731667500
71	Karnataka	YASHWANTPUR	YES	Dr.M.Ravindran	9731666500
72	Karnataka	Harihar (HRR)	No		
73	Karnataka	Sivamogga Town (SMET)	No		
74	Karnataka	Hosapet (HPT)	No		
75	Karnataka	Hassan (HAS)	No		
76	Karnataka	Arsikere Jn	No		
77	Karnataka	Baglokot	No		
78	Karnataka	Talaguppa	No		
79	Karnataka	Mangalore	No		
80	Karnataka	Bijapura (BJP)	No		
81	Karnataka	Belgaum	No		
82	Kerala	Palghat (PGT)	YES	Dr. V Kalarani	9746763500
83	Kerala	ERNAKULUM	No		
84	Kerala	Shoranur (SRR)	No		
85	Madhya Pradesh	HABIBGANJ	YES	Dr Asha Chamania	9752416500
86	Madhya Pradesh	JABALPUR	YES	Dr B. C. Bara	9752415501
87	Madhya Pradesh	BHOPAL	YES	Dr Asha Chamania	9752416500
88	Madhya Pradesh	KTU (Kota)	YES	Dr Ashish Mukherjee	9001017500
89	Madhya Pradesh	Itarsi Jn	No		
90	Madhya Pradesh	Sahdol (SDL)	No		
91	Madhya Pradesh	INDORE Jn	No		
92	Madhya Pradesh	Ujjain (UJN)	No		
93	Madhya Pradesh	Bina	No		
94	Madhya Pradesh	Guna	No		
95	Madhya Pradesh	KATNI MURWARA	No		
96	Madhya Pradesh	Rewa	No		
97	Madhya Pradesh	Satna (STA)	No		
98	Madhya Pradesh	Nagada	No		
99	Maharashtra	Solapur (SUR)	YES	DR ANAND KAMBLE	7219614500 7219614502
100	Maharashtra	PUNE	YES	DR RAMKRISHNA	7219613500
101	Maharashtra	BHUSAVAL	YES	DR SAMANTRAY	7219611500
102	Maharashtra	NAGPUR	YES	DR SANDHYA HEDAWOO DR SUSHMA DALAL	7219612503 7219612505
103	Maharashtra	Mumbai Central	YES	Dr. Hafeezunnisa	9004490520
104	Maharashtra	BANDRA TERMINUS	YES	Dr. Hafeezunnisa	9004490520
105	Maharashtra	Igatpuri	No		
106	Maharashtra	Hazur Sahib Nanded	No		
107	Maharashtra	Daund (DD)	No		
108	Maharashtra	Panvel (PNVL)	No		
109	Maharashtra	Miraj (MRJ)	No		
110	Maharashtra	Pandharpur (PVR)	No		
111	Maharashtra	BALHARSHAR	No		
112	Maharashtra	Dadar Western	No		
113	Maharashtra	Latur (LUR)	No		
114	Maharashtra	SHIRDI (SNSI)	No		
115	Maharashtra	Aurangabad	No		
116	Maharashtra	Gondia (G)	No		
117	Maharashtra	Itwari (ITR)	No		
118	Maharashtra	Nagbhir	No		
119	Maharashtra	Nandurbar (NDB)	No		
120	Odisha	BHUBANESHWAR	YES	Dr. A. Senapati	8455885550
121	Odisha	KHURDA	YES	Dr. G. C. Dash	8455887500
122	Odisha	SAMBHALPUR	No		
123	Odisha	Titlagarh (TIG)	No		
124	Odisha	Kantabanja (KBJ)	No		
125	Odisha	Rayagada (RGDA)	No		
126	Odisha	Korapat (KRPU)	No		
127	Odisha	JHARSUDA	No		
128	Odisha	ROURKELA	No		

Sr. No.	State	Name of STATION	Availability of healthcare staff from Railways	Nodal Officer for the Station	Mobile Number
129	Punjab	FEROZEPUR Cantt	YES	Dr Ranjana sehagal	9779232509
130	Punjab	AMRITSAR	YES	Dr Ranjana sehagal	9779232509
131	Punjab	LUDHIANA	No		
132	Punjab	JULLUNDER CITY	No		
133	Punjab	PATHANKOT	No		
134	Punjab	BHATINDA	No		
135	Punjab	SRI GANGANAGAR	No		
136	Rajasthan	JAIPUR JN	YES	Dr P K Mishra	9001195550
137	Rajasthan	AJMER JN	YES	Dr. P.C. Meena	9001196500
138	Rajasthan	BIKANER	YES	Dr.R.Manjhi	9001197500
139	Rajasthan	JODHPUR	YES	Dr. S.K. Saha	8118821182, 9001198500
140	Rajasthan	Bhagat Ki Kothi	YES	Dr. S.K. Saha	8118821182, 9001198500
141	Rajasthan	UDAIPUR CITY	No		
142	Rajasthan	Abu Road (ABR)	No		
143	Rajasthan	Merta Road (MTD)	No		
144	Rajasthan	JAISALMER	No		
145	Rajasthan	BARMER	No		
146	Rajasthan	Hanumangarh (HMH)	No		
147	Rajasthan	Churu	No		
148	Rajasthan	Madar	No		
149	Rajasthan	Sikar	No		
150	Rajasthan	Suratgarh	No		
151	Rajasthan	Chittourgarh (COR)	No		
152	Rajasthan	Munabao	No		
153	Tamil Nadu	CHENNAI EGMORE	YES	Dr. V. Nirmala Devi	9003160516
154	Tamil Nadu	CHENNAI CENTRAL	YES	Dr. V. Nirmala Devi	9003160516
155	Tamil Nadu	MADURAI	YES	Dr. R. J. Bhaskar	9003862501
156	Tamil Nadu	Erode	YES	Dr. Soumya A	9481453554
157	Tamil Nadu	Villupuram (VM)	YES	Dr. Gnananandan	9003864513
158	Tamil Nadu	Tiruchchilapalli (TPJ)	YES	Dr. R. Soundararajan	9003864500
159	Tamil Nadu	Tirunevelli (TEN)	No		
160	Tamil Nadu	JOLLARPETTAI	No		
161	Tamil Nadu	Mayiladutturai (MV)	No		
162	Tamil Nadu	Thiruvavur (TVR)	No		
163	Telangana	Secunderabad	YES	S Mahapatra	9710370510
164	Telangana	KACHEGUDA	No		
165	Telangana	Adilabad	No		
166	Tripura	AGARTALA	No		
167	Uttar Pradesh	KANPUR	YES	Dr PK Sardar	9794837501
168	Uttar Pradesh	DEEN DAYAL UPADHYAYA NAGAR	YES	Dr.M.S.Nabiyal	9794843500
169	Uttar Pradesh	MORADABAD	YES	Dr Dinesh mohan	9760534526
170	Uttar Pradesh	LUCKNOW	YES	Dr VM sinha	9794833500
171	Uttar Pradesh	PRAYAGRAJ	YES	Dr V.Agarwal	9794835505
172	Uttar Pradesh	JHANSI	YES	Dr. Abha Jain	9794838500
173	Uttar Pradesh	GORAKHPUR	YES	Dr.P.Prasad	9794840511
174	Uttar Pradesh	Varanasi City (BCY)	YES	Dr.M.S.Nabiyal	9794843500
175	Uttar Pradesh	LUCKNOW JN	YES	Dr.S.Srivastawa	9794842500
176	Uttar Pradesh	GONDA	YES	Dr.D.More	9794842521
177	Uttar Pradesh	Bareilly City (BC)	YES	Dr.A.Kunnu	9760541500
178	Uttar Pradesh	MADUADIH	YES	DR. GYANEDRA MOHAN	9794861605
179	Uttar Pradesh	Varansi	YES	Dr.M.S.Nabiyal	9794843500
180	Uttar Pradesh	BAREILLY JN	YES	Dr.A.Kunnu	9760541500
181	Uttar Pradesh	SAHARANPUR	No		
182	Uttar Pradesh	Chopan (CPU)	No		
183	Uttar Pradesh	NAJIBABAD	No		
184	Uttar Pradesh	Ballia (BUI)	No		
185	Uttar Pradesh	MAU	No		
186	Uttar Pradesh	Faizabad	No		
187	Uttar Pradesh	Ghazipur City (GCT)	No		
188	Uttar Pradesh	Azamgarh	No		
189	Uttar Pradesh	Nautanwa (NTV)	No		
190	Uttar Pradesh	Farrukhabad (FBD)	No		
191	Uttar Pradesh	Bhatni (BTT)	No		
192	Uttarakhand	Kashipur (KPV)	No		
193	Uttarakhand	HARIDWAR	No		

Sr. No.	State	Name of STATION	Availability of healthcare staff from Railways	Nodal Officer for the Station	Mobile Number
194	Uttrakhand	KATHGODAM	No		
195	Uttrakhand	Ramnagar (RMR)	No		
196	Uttrakhand	Lalkua (LKU)	No		
197	Uttrakhand	KASGANJ	No		
198	West Bengal	HOWRAH	YES	Dr. B.C. Saha	9002022500
199	West Bengal	KOLKATA	YES	Dr. D.C. Bhunia	9002021500
200	West Bengal	ASANSOL	YES	Dr. B. Ghatak	9002023500
201	West Bengal	MALDA	YES	Dr. A.S. Prasad	9002024507
202	West Bengal	JAMALPUR	YES	Dr. H.K. Mondal	7044466445
203	West Bengal	ALIPURDUAR	YES	Dr. C.S. RAWAT	9002052500
204	West Bengal	NEW JALPAIGURI	YES	DR. R. BHATTACHARJEE	870947500
205	West Bengal	ADRA	YES	DR.KALYAN BRATA	9002083500
206	West Bengal	KHARAGPUR	YES	Dr.S.A.Nazmi	9002081500
207	West Bengal	Sealdah	YES	Dr. D.C. Bhunia	9002021500
208	West Bengal	New Alipurdwar (NOQ)	YES	Dr. C.S. RAWAT	9002052500
209	West Bengal	Azimganj (AZ)	No		
210	West Bengal	Rampur hat (RPH)	No		
211	West Bengal	Lalgola (LGL)	No		
212	West Bengal	ILLOO (LLO)	No		
213	West Bengal	Purulia	No		
214	West Bengal	Krishnapur (KRP)	No		
215	West Bengal	New Cooch Behar	No		

Government of India
Ministry of Health & Family Welfare
Directorate General of Health Services
(EMR Division)

Additional guidelines for quarantine of returnees from abroad / contacts / isolation of suspect or confirmed cases in private facilities

Scope

Ministry of Health & Family Welfare has issued guidelines for home quarantine of contacts and home isolation of patients who have requisite accommodation at home for self-isolation as available at <https://www.mohfw.gov.in/pdf/Guidelinesforhomequarantine.pdf>.

There are large number of facilities such as hotels, service apartments, lodges which remain unoccupied due to impact of COVID-19 on travel and tourism. There are also instances where people who don't have requisite space at home may opt for such facilities. This is likely to reduce the pressure on the family, give comfort to the person, and protect the family members and immediate neighborhood.

Standard Operating Procedure

These standard operating procedures are applicable both for facility quarantine/ facility isolation in hotels, service apartments, lodges etc. unless and otherwise stated categorically. The State/UT government opting for this model will ensure that:

1. The quarantine and isolation facility will not co-exist and the facility owner will have a choice to dedicate the facility for either of the two.
2. These facilities will offer single room on paid basis to contacts/cases with attached washrooms.
3. The tariff for the accommodation and services shall be fixed by the facility in consultation with the state government and widely publicized.
4. The facility dedicated for isolation will follow the norms established for COVID Care Centre as available at -
<https://www.mohfw.gov.in/pdf/FinalGuidanceonMangaementofCovidcasesversion2.pdf>
5. The cases shall only be kept in an isolation facility, if the cases are clinically assessed to be pre-symptomatic or very mild.
6. Such facility that opts for isolation will have separate earmarked areas for keeping suspect cases and confirmed cases and will ensure no inter-mingling of these two categories.
7. The contact/patient opting for such quarantine/isolation facility will give an undertaking as is available at -
<https://www.mohfw.gov.in/pdf/GuidelinesforHomeIsolationofverymildpresymptomati cCOVID19cases.pdf>

8. The facility owner of the quarantine/isolation facility shall make such additional arrangements as under:
 - a. They shall ensure in-house availability of a trained doctor and a nurse on 24X7 basis.
 - b. The doctor will monitor the contacts/cases in quarantine/isolation facilities once a day on basic parameters of temperature, pulse, blood pressure, respiratory rate and pulse oxymetry and keep record of the same.
 - c. The doctor engaged by the facility will inform the District Surveillance Officer regarding the list of cases/contacts admitted to such facility and their health status.
 - d. The facility should network with an approved laboratory for testing samples as per ICMR guidelines.
 - e. The quarantined/isolated persons should not be allowed to meet visitors. They can talk on phone.
 - f. The facility will provide Wi-Fi facility and ensure that the client downloads the Aarogya Setu App on mobile (available at: <https://www.mygov.in/aarogya-setu-app/>) and it should remain active at all times (through Bluetooth and location service)
 - g. The facility should train its staff to call 108 free Ambulance service or any other Ambulance as per requirement.
 - h. The linens, towels etc. and rooms should be disinfected and the facility will follow infection prevention control practices as per guidelines available at <https://www.mohfw.gov.in/pdf/National%20Guidelines%20for%20IPC%20in%20HCF%20-%20final%281%29.pdf>
 - i. The in-house catering should only provide room services for freshly cooked food duly following physical distancing and environmental sanitation.
 9. The facility owner will give an undertaking to follow the above SOP and to have adequate manpower including the above mentioned health workers as per the prescribed protocol.
 10. Facility should ensure that the clear instructions for the contacts/cases are provided at the time of check-in as per MoHFW guidelines available at <https://www.mohfw.gov.in/pdf/Guidelinesforhomequarantine.pdf> and <https://www.mohfw.gov.in/pdf/GuidelinesforHomelsofationofverymildpresymptomaticCOVID19cases.pdf>
 11. The discharge of the contacts/cases from the facility will be in accordance with the discharge policy.
-

*A contact is a healthy person who has been (i) in close (within 1 meter), unprotected (without appropriate personal protective equipment) contact of a confirmed case of COVID-19, or his/her bodily secretions or (ii) exposed to contaminated environment and is therefore at a higher risk of developing disease. (Additional details available at: <https://ncdc.gov.in/showfile.php?lid=538>). Such persons need to be put under **quarantine**. Persons being evacuated from COVID-19 affected countries are required to be quarantined.

#Person who have been clinically assigned as a symptomatic but very mild case/ laboratory confirmed but pre-symptomatic case by the treating medical officer (Additional details available at: <https://www.mohfw.gov.in/pdf/GuidelinesforHomelsofationofverymildpresymptomaticCOVID19cases.pdf>) Such persons need to be **isolated** to break the chain of transmission.

District level Facility based surveillance for COVID-19

Background

- There is a need to establish systematic surveillance for SARS-CoV-2 infection in **all districts** of country. This surveillance will be in addition to the routine testing as per current testing guidelines.
- Besides the facility based surveillance, ICMR/NCDC in collaboration with key stakeholders and state health departments is initiating a population based **sero-survey** in selected districts representing the case detection across the country.

Objective

- Monitor the trend in prevalence of SARS-COV2 infection at district level

Methods

- Surveillance unit: district
 - From each district, 10 health facilities (including 6 public and 4 private health facilities should be selected)
- Population groups:
 - Low risk population: Outpatient attendees (non-ILI patients) and pregnant women
 - High risk population: health care workers,
- Sample size and frequency of sample collection:

Sentinel Group	Samples per District per Week	Samples per District per Month
High risk		
Healthcare workers	100	400
Low risk		
Outpatient attendees (Non-ILI patients)	50	200
Pregnant women	50	200
Total	200	800

- Laboratory test and pooling:
 - Throat/nasal swabs to be collected for RT-PCR tests
 - Samples should be tested in a **onetime pool of 25**. Results of this sample pooling is only for **surveillance purposes**. It should not be used for diagnosis of individual patients.
 - In addition to throat/nasal swabs, blood samples should be collected for detecting IgG antibodies for ELISA testing.
 - In subsequent rounds, IgG ELISA based testing of serum samples will replace RTPCR based testing for surveillance purpose.
- Data collection and analysis:
 - Data on demographic characteristics will be collected on a specifically designed standard data collection form using ODK platform.
 - The data will be analyzed locally for action using standard indicator formats. Indicators for person, place, time and trend analysis will be made.
 - Data collation and dissemination will take place as decided jointly by ICMR and DoHFW.
- Implementation partners:
 - District and State health administrative, IDSP, NCDC, ICMR institutes, community medicine departments of medical colleges and public health institutes.

Containment Plan

Novel Coronavirus Disease 2019 (COVID 19)

Version 2 (updated 16.05.2020)

**Ministry of Health & Family Welfare
Government of India**

1. INTRODUCTION

1.1. Background

Coronaviruses are large group of viruses that cause illness in humans and animals. Rarely, animal coronaviruses can evolve and infect people and then spread between people such as has been seen with MERS and SARS. Although most human coronavirus infections are mild, the epidemics of the severe acute respiratory syndrome coronavirus (SARS-CoV) and Middle East respiratory syndrome coronavirus (MERS-CoV), have caused more than 10,000 cumulative cases in the past two decades, with mortality rates of 10% for SARS-CoV and 37% for MERS-CoV.

The outbreak of Novel coronavirus disease (COVID-19) was initially noticed in a seafood market in Wuhan city in Hubei Province of China in mid-December, 2019, has now spread to 214 countries/territories/areas worldwide.

1.2. Risk Assessment

WHO (under International Health Regulations) has declared this outbreak as a “Public Health Emergency of International Concern” (PHEIC) on 30th January 2020. WHO subsequently declared COVID-19 a pandemic on 11th March, 2020.

Most people infected with COVID-19 virus have mild disease and recover. Approximately 80% of laboratory confirmed patients have had mild disease, 15% require hospitalization and 5% cases are critical requiring ventilator management.

The overall case fatality ratio (CFR) is 6.9% globally, which is considerably lower than that was reported during SARS (15%) and MERS-CoV outbreaks (37%). The CFR varies by location and intensity of transmission. The mortality is high among elderly, particularly those with co-morbid conditions like coronary artery disease, diabetes, hypertension, chronic respiratory diseases etc.

1.3. Global Scenario

As on 14th May, 2020, COVID-19 confirmed cases are being reported from 214 countries/territories/areas. A total of 42,48,389 laboratory confirmed cases and 2,92,046 deaths have been reported from globally. Focus of outbreak that was initially China, has now shifted to European region and United States of America.

Maximum number of cases is currently being reported from USA, Russia, Spain, UK, Italy, Germany, Brazil, Turkey and France.

1.4. Indian Scenario

As on 14th May, 2020, a total of 51401 active cases, 27919 cured/ discharged and 2649 deaths have been reported so far.

1.5. Epidemiology

Coronaviruses belong to a large family of viruses, some causing illness in people and others that circulate among animals, including camels, cats, bats etc. Rarely, animal corona viruses may evolve and infect people and then spread between people as witnessed during the outbreak of Severe Acute Respiratory Syndrome (SARS, 2003) and Middle East Respiratory Syndrome (MERS, 2014). The etiologic agent responsible for current outbreak of SARS-CoV-2 is a novel coronavirus is closely related to SARS-Coronavirus.

In humans, the transmission of SARS-CoV-2 can occur via respiratory secretions (directly through droplets from coughing or sneezing, or indirectly through contaminated objects or surfaces as well as close contacts). Current estimates of the incubation period of COVID range from 2-14 days. Common symptoms include fever, fatigue, dry cough and breathing difficulty. Upper respiratory tract symptoms like sore throat, rhinorrhoea, and gastrointestinal symptoms like diarrhea and nausea/ vomiting are also reported.

As per analysis of the biggest cohort reported by Chinese CDC, about 81% of the cases are mild, 14% require hospitalization and 5% require ventilator and critical care management. The deaths reported are mainly among elderly population particularly those with co-morbidities.

At the time of writing this document, many of the crucial epidemiological information particularly source of infection, mode of transmission, period of infectivity, etc. are still under investigation.

2. STRATEGIC APPROACH

India would be following a scenario based approach for the following possible scenarios:

- i. Travel related case reported in India
- ii. Local transmission of COVID-19
- iii. Community Transmission of COVID-19 disease
- iv. India becomes endemic for COVID-19

2.1. Strategic Approach for when “only travel related cases reported from India”

- (i) Inter-ministerial coordination (Group of Ministers, Committee of Secretaries) and Centre-State Co-ordination been established.
- (ii) Early Detection through Points of Entry (PoE) screening of passengers coming from affected countries through 30 designated airports, 12 major ports, 65 minor ports and 8 land crossings.
- (iii) Surveillance and contact tracing through Integrated Disease Surveillance Programme (IDSP) for tracking travellers in the community who have travelled from affected countries and to detect clustering, if any, of acute respiratory illness.
- (iv) Early diagnosis through a network laboratory of ICMR which are testing samples of suspect cases.
- (v) Buffer stock of personal protective equipment maintained.
- (vi) Risk communication for creating awareness among public to follow preventive public health measures.

2. 2. Local transmission of COVID-2019 disease

The strategy will remain the same as explained in para 2.1 as above. In addition, cluster containment strategy will be initiated with:

- Active surveillance in containment zone with contact tracing within and outside the containment zone.
- Expanding laboratory capacity for testing all suspect samples, close contacts, ILI and SARI
- Establishing surge capacities for isolating all suspect / confirmed cases for clinical management.
- Implementing social distancing measures.
- Intensive risk communication.

3. SCOPE OF THIS DOCUMENT

In alignment with strategic approach, this document provides action that needs to be taken for containing a cluster. The actions for control of large outbreaks will be dealt separately.

4. OBJECTIVES

The objective of cluster containment is to break cycle of transmission and decrease the morbidity and mortality due to COVID-19.

5. CLUSTER CONTAINMENT

5.1. Definition of Cluster

A cluster is defined as 'an unusual aggregation of health events that are grouped together in time and space and that are reported to a health agency' (Source CDC). Clusters of human cases are formed when there is local transmission. The local transmission is defined as a laboratory confirmed case of COVID-19:

- (i) Who has not travelled from an area reporting confirmed cases of COVID-19 or
- (ii) Who had no exposure to a person travelling from COVID-19 affected area
- (iii) The cases are epidemiologically linked

As a working definition, less than 15 cases in an area can be treated as a cluster.

There could be single or multiple foci of local transmission.

5.2. Cluster Containment Strategy

The cluster containment strategy would be to contain the disease within a defined geographic area by early detection, breaking the chain of transmission and thus preventing its spread to new areas. This would include geographic quarantine, social distancing measures, enhanced active surveillance, testing all suspected cases, isolation of cases, home quarantine of contacts, social mobilization to follow preventive public health measures.

5.3. Evidence base for cluster containment

Large scale measures to contain COVID-19 have been tried in China, Republic of Korea, Germany, France, Singapore and Italy. Since there is efficient human to human transmission, success of containment operations cannot be guaranteed. Interventions to limit morbidity, mortality and social disruption associated with SARS in 2003 demonstrated that it was possible then to mobilize complex public health operation to contain SARS outbreak. Mathematical modeling studies suggest containment might be possible.

5.4. Factors affecting cluster containment

A number of variables determine the success of the containment operations. These are:

- (i) Size of the cluster.
- (ii) How efficiently the virus is transmitting in Indian population.

- (iii) Time since first case/ cluster of cases originated. Detection, laboratory confirmation and reporting of first few cases must happen quickly.
- (iv) Active case finding and laboratory diagnosis.
- (v) Isolation of cases and quarantine of contacts.
- (vi) Geographical characteristics of the area (e.g. accessibility, natural boundaries)
- (vii) Population density and their movement (including migrant population).
- (viii) Resources that can be mobilized swiftly by the State Government/ Central Government.
- (ix) Ability to ensure basic infrastructure and essential services.

5.5. Assumptions

- (i) The virus is not circulating in Indian Population.
- (ii) Even if there is a global pandemic, there is large part of the country which remains unaffected and large population which remains susceptible.

6. ACTION PLAN FOR CLUSTER CONTAINMENT

6.1. Institutional mechanisms and Inter-Sectoral Co-ordination

At the National Level, the National Crisis Management Committee (NCMC)/ Committee of Secretaries (CoS) will be activated. The co-ordination with health and non-health sectors will be managed by NCMC/ Cos, on issues, flagged by Ministry of Health. Ministry of Health and Family Welfare will activate its Crisis Management Plan.

The Concerned State will activate State Crisis Management Committee or the State Disaster Management Authority, as the case may be to manage the clusters of COVID-19.

There will be regular co-ordination meetings between the centre and the affected States through video conference.

The State should review the existing legal instruments to implement the containment plan. Some of the Acts/ Rules for consideration could be

- (i) Disaster Management Act (2005)
- (ii) Epidemic Act (1897)
- (iii) Cr.PC and
- (iv) State Specific Public Health Acts.

6.2. Trigger for Action

The trigger could be IDSP identifying a cluster of Influenza like Illness (ILI) or Severe Acute Respiratory syndrome (SARI), which may or may not have epidemiological linkage to a travel related case.

It could also be through other informal reporting mechanisms (media/ civil society/ hospitals both government and private sector) etc. The State will ensure early diagnosis through the ICMR/VRDL (Virus Research and Diagnostic Laboratory) Network. A positive case will trigger a series of actions for containment of the cluster.

6.3. Deployment of Rapid Response Teams (RRT)

State will deploy its state RRT and district RRT teams to undertake mapping of cases and contacts so as to delineate the containment and buffer zones. Emergency Medical Relief (EMR) division, Ministry of Health and Family Welfare may deploy the Central Rapid Response Team (RRT) to support and advice the State.

6.4. Identify geographically-defined Containment zone and Buffer zone

6.4.1. Containment zone

The containment zone will be defined based on: Containment Zones are delineated based on:

- i. Mapping of cases and contacts
- ii. Geographical dispersion of cases and contacts
- iii. Area having well demarcated perimeter
- iv. Enforceability of perimeter control

The RRT will do listing of cases, contacts and their mapping. This area should therefore be appropriately defined by the district administration/local urban bodies with technical inputs at local level. For effective containment, it is advisable to err on the side of caution.

Activities to be undertaken in the Containment zone includes:

- i. Active search for cases through physical house to house surveillance by Special Teams formed for the purpose
- ii. Testing of all cases as per sampling guidelines
- iii. Contact tracing
- iv. Identification of local community volunteers to help in surveillance, contact tracing and risk communication
- v. Extensive inter-personal and community based communication

- vi. Strict enforcement of social distancing
- vii. Advocacy on hand hygiene, respiratory hygiene, environmental sanitation and wearing of masks / face-covers
- viii. Clinical management of all confirmed cases

6.4.2. Perimeter

Once the Containment Zone is delineated the perimeter will be defined and there would be strict perimeter control with:

- i. Establishment of clear entry and exit points,
- ii. No movement to be allowed except for medical emergencies and essential goods and services,
- iii. No unchecked influx of population to be allowed and
- iv. People transiting to be recorded and followed through IDSP.

6.4.2. Buffer zone

A Buffer Zone has to be delineated around each containment zone. It shall be appropriately defined by the district administration/local urban bodies with technical inputs at local level. Buffer zone will be primarily the area wherein additional & focused attention is needed so as to ensure that infection does not spread to adjoining areas. For effective containment, it is of paramount importance that the buffer zone needs to be a large area.

The activities under the Buffer Zone include:

- i. Enhanced passive surveillance for ILI and SARI cases in the buffer zone through the existing Integrated Disease Surveillance Programme.
- ii. Create community awareness on preventive measures such as personal hygiene, hand hygiene and respiratory etiquettes.
- iii. Use of face cover, social distancing through enhanced IEC activities.
- iv. To ensure social distancing by:
 - a. Cancelling all mass gathering events, meetings in public or private places.
 - b. Avoiding public places

- c. Closure of schools, colleges and work places

7. SURVEILLANCE

7.1. Surveillance in containment zone

7.1.1. Contact listing

The RRTs will list the contacts of the suspect /laboratory confirmed case of COVID-19. The District Surveillance Officer (in whose jurisdiction, the laboratory confirmed case/ suspect case falls) along with the RRT will map the contacts to determine the potential spread of the disease. If the residential address of the contact is beyond that district, the district IDSP will inform the concerned District IDSP/State IDSP.

7.1.2. Mapping of the containment and buffer zones

The containment and buffer zones will be mapped to identify the health facilities (both government and private) and health workforce available (primary healthcare workers, Anganwadi workers and doctors in PHCs/CHCs/District hospitals).

7.1.3. Active Surveillance

The residential areas will be divided into sectors for the ASHAs/Anganwadi workers/ANMs each covering 100 households (50 households in difficult areas). Additional workforce would be mobilized from neighboring districts (except buffer zone) to cover all the households in the containment zone. Additional workforce if required will be listed from the covidwarriors.gov.in. This website provides access to list of volunteers trained for surveillance (ASHAs, Anganwadi workers, NSS, NCC, IRCS, NYKV). This workforce will have supervisory officers (PHC/CHC/Ayush doctors) in the ratio of 1:5.

The field workers will be performing active house to house surveillance daily in the containment zone from 8:00 AM to 2:00 PM. They will line list the family members and those having symptoms. The field worker will provide a mask to the suspect case and to the care giver identified by the family. The patient will be isolated at home till such time he/she is examined by the supervisory officer. They will also follow up contacts identified by the RRTs within the sector allocated to them.

All ILI/SARI cases reported in the last 14 days by the IDSP in the containment zone will be tracked and reviewed to identify any missed case of COVID-19 in the community.

Any case falling within the case definition will be conveyed to the supervisory officer who in turn will visit the house of the concerned, confirm that diagnosis as per case definition and will make arrangements to shift the suspect case to the designated treatment facility. The supervisory

officer will collect data from the health workers under him/ her, collate and provide the daily and cumulative data to the control room by 4.00 P.M. daily.

7.1.4 Passive Surveillance

All health facilities in the containment zone will be listed as a part of mapping exercise. All such facilities both in Government and private sector (including clinics) shall report clinically suspect cases of COVID-19 on real time basis (including 'Nil' reports) to the control room at the district level. The health facilities in the buffer

7.1.5. Contact Tracing

The contacts of the laboratory confirmed case/ suspect case of COVID-19 will be line-listed and tracked and kept under surveillance at home for 28 days (by the designated field worker). The Supervisory officer in whose jurisdiction, the laboratory confirmed case/ suspect case falls shall inform the Control Room about all the contacts and their residential addresses. The control room will in turn inform the supervisory officers of concerned sectors for surveillance of the contacts. If the residential address of the contact is beyond the allotted sector, the district IDSP will inform the concerned Supervisory officer/concerned District IDSP/State IDSP.

7.2. Surveillance in Buffer zone

The surveillance activities to be followed in the buffer zone are as follows:

- i. Review of ILI/SARI cases reported in the last 14 days by the District Health Officials to identify any missed case of COVID-19 in the community.
- ii. Enhanced passive surveillance for ILI and SARI cases in the buffer zone through the existing Integrated Disease Surveillance Programme.
- iii. In case of any identified case of ILI/SARI, sample should be collected and sent to the designated laboratories for testing COVID-19.

All health facilities in the buffer zone will be listed as a part of mapping exercise. All such facilities both in Government and private sector (including clinics) shall report clinically suspect cases of COVID-19 on real time basis (including 'nil' reports) to the control room at the district level. Measures such as personal hygiene, hand hygiene, social distancing to be enhanced through IEC activities in the buffer zone.

7.3. Perimeter Control

The perimeter control will ensure that there is no unchecked outward movement of population from the containment zone except for maintaining essential services (including medical emergencies) and government business continuity. It will also limit unchecked influx of population into the containment zone. The authorities at these entry points will be required to

inform the incoming travelers about precautions to be taken and will also provide such travelers with an information pamphlet and mask.

All vehicular movement, movement of public transport and personnel movement will be restricted. All roads including rural roads connecting the containment zone will be guarded by police.

The District administration will post signs and create awareness informing public about the perimeter control. Health workers posted at the exit point will perform screening (e.g. interview travelers, measure temperature, record the place and duration of intended visit and keep complete record of intended place of stay).

Details of all persons moving out of perimeter zone for essential/ emergency services will be recorded and they will be followed up through IDSP. All vehicles moving out of the perimeter control will be decontaminated with sodium hypochlorite (1%) solution.

8. LABORATORY SUPPORT

8.1 Designated laboratories

The identified VRDL network laboratory, nearest to the affected area, will be further strengthened to test samples. The other available govt. laboratories and private laboratories (BSL 2 following BSL 3 precautions) if required, shall also be engaged to test samples, after ensuring quality assurance by ICMR/VRDL network. If the number of samples exceeds its surge capacity, samples will be shipped to other nearby laboratories or to NCDC, Delhi or NIV, Pune or to other ICMR lab networks depending upon geographic proximity.

The list of laboratories identified for testing COVID is at

https://www.icmr.gov.in/pdf/covid/labs/COVID_Testing_Labs_15052020.pdf

All test results should be available within 24 hours of sampling. ICMR along with the State Government will ensure that there are designated agencies for sample transportation to identified laboratories. The contact number of such courier agencies shall be a part of the micro-plan.

The guidelines for sample collection, packaging and transportation is available at

https://www.mohfw.gov.in/pdf/5Sample%20collection_packaging%20%202019-nCoV.pdf

The designated laboratory will provide daily update (daily and cumulative) to District, State and Central Control Rooms on:

- i. No. of samples received
- ii. No. of samples tested

- iii. No. of samples under testing
- iv. No. of positive samples

8.2 Testing criteria

The ICMR strategy for testing is given below:

1. All symptomatic individuals who have undertaken international travel in the last 14 days
2. All symptomatic contacts of laboratory confirmed cases
3. All symptomatic health care workers
4. All patients with Severe Acute Respiratory Illness (fever AND cough and/or shortness of breath)
5. Asymptomatic direct and high-risk contacts of a confirmed case should be tested once between day 5 and day 14 of coming in his/her contact

Details are available at:

https://main.icmr.nic.in/sites/default/files/upload_documents/Strategey_for_COVID19_Test_v4_09042020.pdf

The testing at the field level shall be taken up as per the criteria proposed by ICMR from time to time.

8.3. Tests approved for COVID Diagnosis

RT-PCR is the standard test for laboratory diagnosis. In laboratories, wherever Cepheid Xpert Xpress SARS-CoV2 Cartridge Based Nucleic Acid Amplification Test (CBNAAT) has been made available, the advisory of ICMR at the following link will be followed: https://main.icmr.nic.in/sites/default/files/upload_documents/Cepheid_Xpert_Xpress_SARS-CoV2_advisory_v2.pdf

Laboratories following TrueNat as a screening test for detecting SARS-CoV2 will follow additional guidelines available at:

https://main.icmr.nic.in/sites/default/files/upload_documents/Additional_guidance_on_TrueNat_based_COVID19_testing.pdf

For testing persons in quarantine camps of migrant workers or those international passengers returning home, RT-PCR test based on pooled sampling will be used. The guideline for pooling of samples is available at:

<https://www.mohfw.gov.in/pdf/GuidelineforrtPCRbasedpooledsamplingFinal.pdf>

ICMR specimen referral form is available at:

https://main.icmr.nic.in/sites/default/files/upload_documents/SRF_v9.pdf

Additional testing methodologies prescribed from time to time by government shall be adopted at the field level.

9. HOSPITAL CARE

All suspect cases detected in the containment/buffer zones (till a diagnosis is made) and those tested positive will be hospitalized and kept in isolation in separate areas in designated facilities. Three tier facility has been developed for isolation of suspect/ confirmed COVID-19 cases.

These are Covid Care Centres (CCC) to keep pre-symptomatic/ very mild/ mild cases, Dedicated Covid Health Centres (DCHC) for those requiring Oxygen therapy and Dedicated Covid Hospitals for those requiring intensive care or ventilator management. The categorization of COVID health facilities and categorization of patients based on severity are available at:

<https://www.mohfw.gov.in/pdf/FinalGuidanceonMangaementofCovidcasesversion2.pdf>.

Some patients may progress to multi organ failure and hence critical care facility/ dialysis facility/ and Salvage therapy [Extra Corporeal Membrane Oxygenator(ECMO)] facility for managing the respiratory/renal complications/ multi-organ failure shall be required. If such facilities are not available in the containment zone, nearest tertiary care facility in Government / private sector needs to be identified, that becomes a part of the micro-plan.

Pre-symptomatic and very mild cases have an option of being in home isolation subject to fulfillment of availability of earmarked space for isolation at home. The guidelines for home isolation are available at:

<https://www.mohfw.gov.in/pdf/RevisedguidelinesforHomelsolationofverymildpresymptomaticCOVID19cases10May2020.pdf>.

9.1 Surge capacity

Based on the risk assessment, if the situation so warrants (data suggested an exponential rise in the number of cases), the surge capacity of the identified hospitals shall be enhanced, private hospitals will be roped in and sites for temporary hospitals identified and their logistic requirements shall be worked out.

Related guidelines are available at:

<https://www.mohfw.gov.in/pdf/AdvisoryforHospitalsandMedicalInstitutions.pdf>

9.2 Pre-hospital care (ambulance facility)

Ambulances need to be in place for transportation of suspect/confirmed cases. Such ambulances shall be manned by personnel adequately trained in infection prevention control, use of PPE and protocol that needs to be followed for disinfection of ambulances (by 1% sodium hypochlorite solution using knap sack sprayers).

The standard operating procedure for transporting Covid patient is at:

<https://www.mohfw.gov.in/pdf/StandardOperatingProcedureSOPfortransportingasuspectorconfirmedcaseofCOVID19.pdf>

9.3 Infection Prevention Control Practices

Nosocomial infection in fellow patients and attending healthcare personnel are well documented in the current COVID-19 outbreak as well. There shall be strict adherence to Infection prevention control practices in all health facilities. Detailed guidelines on infection prevention control are available at:

<https://www.mohfw.gov.in/pdf//National%20Guidelines%20for%20IPC%20in%20HCF%20-%20final%281%29.pdf>

IPC committees would be formed (if not already in place) with the mandate to ensure that all healthcare personnel are well aware of IPC practices and suitable arrangements for requisite PPE and other logistic (hand sanitizer, soap, water etc.) are in place. The designated COVID treatment facility will ensure that all healthcare staff is trained in IPC (washing of hands, respiratory etiquettes, donning/doffing & proper disposal of PPEs and bio-medical waste management).

Healthcare workers will be provided guidance on preventive measures and management of risk to accidental exposure or other-wise to COVID. Advisory for managing Health care workers exposed to COVID is available at:

<https://www.mohfw.gov.in/pdf/AdvisoryformanagingHealthcareworkersworkinginCOVIDandNonCOVIDareasofthehospital.pdf>

At all times health care workers in COVID treatment facilities and Non-covid treatment facility/ areas will use personal protection gears following the below mentioned guidelines:

<https://www.mohfw.gov.in/pdf/GuidelinesonrationaluseofPersonalProtectiveEquipment.pdf>

Additional guidelines for Non- Covid areas are available at:

<https://www.mohfw.gov.in/pdf/UpdatedAdditionalguidelinesonrationaluseofPersonalProtectiveEquipmentsettingapproachforHealthfunctionariesworkinginnonCOVID19areas.pdf>

Environmental cleaning should be done twice daily and will consist of damp dusting and floor mopping with sodium hypochlorite solution of frequently touched surfaces. Detailed guidelines are available at:

<https://www.mohfw.gov.in/pdf//National%20Guidelines%20for%20IPC%20in%20HCF%20-%20final%281%29.pdf>

The bio medical waste will be managed in accordance with Bio-medical waste management rules. Guidelines for handling, treatment and disposal of waste generated during treatment/diagnosis/quarantine of COVID-19 Patients is at:

<https://www.mohfw.gov.in/pdf/63948609501585568987wastesguidelines.pdf>

10. CLINICAL MANAGEMENT

10.1. Clinical Management

The hospitalized cases may require symptomatic treatment for fever. Paracetamol is the drug of choice. Suspect cases with co-morbid conditions, if any, will require appropriate management of co-morbid conditions.

For patients with severe acute respiratory illness (SARI), having respiratory distress may require, pulse oxymetry, oxygen therapy, non-invasive and invasive ventilator therapy.

The clinical management protocol to be followed is available at:

<https://www.mohfw.gov.in/pdf/RevisedNationalClinicalManagementGuidelineforCOVID1931032020.pdf>

10.2. Discharge Policy

Discharge policy for suspected cases of COVID-19 tested negative will be based on the clinical assessment of the treating physician. For those tested positive for COVID-19, their discharge from hospital will be governed by the discharge policy available at:

<https://www.mohfw.gov.in/pdf/ReviseddischargePolicyforCOVID19.pdf>

10.3. Dead body management

The dead body of a COVID case does not spread infection. The healthcare worker however handling the body immediately after death is at risk in case there is exposure to bodily fluids and shall be protected.

Detailed guidelines of dead body management as available at:

https://www.mohfw.gov.in/pdf/1584423700568_COVID19GuidelinesonDeadbodymanagement.pdf

shall be followed.

11. PHARMACEUTICAL INTERVENTIONS

As of now there is no approved drug or vaccine for treatment of COVID-19. Chemoprophylaxis with Hydroxychloroquine is recommended for healthcare workers and high risk contacts. Advisory on use of Hydroxychloroquine is available at:

<https://www.mohfw.gov.in/pdf/AdvisoryontheuseofHydroxychloroquinasprophylaxisforSARSCoV2infection.pdf>

12. NON-PHARMACEUTICAL INTERVENTIONS

In the absence of proven drug or vaccine, non-pharmaceutical interventions will be the main stay for containment of COVID-19 cluster.

12.1. Preventive public health measures

There will be social mobilization among the population in containment and buffer zone for adoption of community-wide practice of frequent washing of hands and respiratory etiquettes in schools, colleges, work places and homes. The community will also be encouraged to self-monitor their health and report to the visiting ASHA/Anganwadi worker or to nearest health facility.

12.2. Quarantine and isolation

Quarantine and Isolation are important mainstay of cluster containment. These measures help by breaking the chain of transmission in the community.

12.2.1. Quarantine

Quarantine refers to separation of individuals who are not yet ill but have been exposed to COVID-19 and therefore have a potential to become ill. There will be voluntary home quarantine of contacts of suspect /confirmed cases. The guideline on home quarantine is available at:

<https://www.mohfw.gov.in/pdf/Guidelinesforhomequarantine.pdf>

12.2.2. Isolation

Isolation refers to separation of individuals who are ill and suspected or confirmed of COVID-19. There are various modalities of isolating a patient. Ideally, patients can be isolated in individual isolation rooms or negative pressure rooms with 12 or more air-changes per hour.

In resource constrained settings, all positive COVID-19 cases can be cohorted in a ward with good ventilation (Covid Care Centre, Dedicated Covid Health Centre). Similarly, all suspect cases should also be cohorted in a separate ward. However, under no circumstances these cases should be mixed up. A minimum distance of 1 meter needs to be maintained between adjacent beds. All such patients need to wear a triple layer surgical mask at all times.

Pre-symptomatic cases/ very mild/ mild cases can opt for home isolation provided they follow the guidelines available at:

<https://www.mohfw.gov.in/pdf/RevisedguidelinesforHomeIsolationofverymildpresymptomaticCOVID19cases10May2020.pdf>

12.3 Social distancing measures

For the cluster containment, social distancing measures are key interventions to rapidly curtail the community transmission of COVID-19 by limiting interaction between infected persons and susceptible hosts. The following measures would be taken:

12.3.1 Closure of schools, colleges and work places

Administrative orders will be issued to close schools, colleges and work places in containment and buffer zones. Intensive risk communication campaign will be followed to encourage all persons to stay indoors for an initial period of 28 days, to be extended based on the risk assessment. Based on the risk assessment and indication of successful containment operations, an approach of staggered work and market hours may be put into practice.

12.3.2 Cancellation of mass gatherings

All mass gathering events and meetings in public or private places, in the containment and buffer zones shall be cancelled/banned till such time, the area is declared to be free of COVID-19 or the outbreak has increased to such scales to warrant mitigation measures instead of containment.

12.3.3. Advisory to avoid public places

The public in the containment and buffer zones will be advised to avoid public places and only if necessary for attending to essential services. The administration will ensure supply of enough triple layer masks to the households in the containment and buffer zones.

12.3.4. Cancellation of public transport (bus/rail)

There will be prohibition for persons entering the containment zone and on persons exiting the containment zone. To facilitate this, if there are major bus transit hubs or railway stations in the containment zone, the same would be made dysfunctional temporarily. Additionally, irrespective of fact that there is a rail/road transit hub, the perimeter control will take care of prohibiting people exiting the containment zone including those using private vehicles and taxis.

As significant inconvenience is caused to the public by adopting these measures in the containment zone, State government would proactively engage the community and work with them to make them understand the benefits of such measures.

Advisory on social distancing is at

<https://www.mohfw.gov.in/pdf/SocialDistancingAdvisorybyMOHFW.pdf>

13. MATERIAL LOGISTICS

13.1. Personal Protective Equipment

Personal protective equipments are a scarce resource and needs to be used rationally. Guidelines for rational use of PPEs using a setting approach is at:

<https://www.mohfw.gov.in/pdf/GuidelinesonrationaluseofPersonalProtectiveEquipment.pdf>

Additional guidelines for Non- Covid areas are available at:

<https://www.mohfw.gov.in/pdf/UpdatedAdditionalguidelinesonrationaluseofPersonalProtectiveEquipmentssettingapproachforHealthfunctionariesworkinginnonCOVID19areas.pdf>

The State Government has to ensure adequate stock of personal protective equipment. The quantity required for a containment operation will depend upon the size & extent of the cluster and the time required containing it.

13.2. Transportation

A large number of vehicles will be required for mobilizing the surveillance and supervisory teams. The vehicles will be pooled from Government departments. The shortfall, if any, will be met by hiring of vehicles.

13.3. Stay arrangements for the field staff

The field staff brought in for the surveillance activities and that for providing perimeter control need to be accommodated within the containment zone. Facilities such as schools, community buildings etc. will be identified for sheltering. Catering arrangement will need to be made at these locations.

14. RISK COMMUNICATION

14.1 Risk communication material

Risk communication materials comprising of

- (i) posters and pamphlets;

- (ii) audio only material;
- (iii) AV films

prepared by PIB/MoHFW will be provided to the States for targeted roll out in the containment and buffer zones.

14.2 Communication channels

14.2.1 Interpersonal communication

During house to house surveillance, ASHAs/ other community health workers will interact with the community

- (i) for reporting symptomatic cases
- (ii) contact tracing
- (iii) information on preventive public health measures.

14.2.2 Mass communication

Awareness will be created among the community through miking, distribution of pamphlets, mass SMS and social media. Also use of radio and television (using local channels) will ensure penetration of health messages in the target community.

14.2.3 Dedicated helpline

A dedicated helpline number will be established at Central, State and District level. Its number will be widely circulated for providing general population with information on risks of COVID-19 transmission, the preventive measures required and the need for prompt reporting to health facilities, availability of essential services and administrative orders on perimeter control.

14.2.4 Media Management

At the Central level, only Secretary (H) or representative nominated by her shall address the media. There will be regular press briefings/ press releases to keep media updated on the developments and avoid stigmatization of affected communities. Every effort shall be made to address and dispel any misinformation circulating in media incl. social media.

At the State level, only Principal Secretary (H), his/her nominee will speak to the media.

15. INFORMATION MANAGEMENT

15.1 Control room at State & District Headquarters

A control room (if not already in place) shall be set up at State and District headquarters, managed by designated officers. This shall be manned by State and District Surveillance Officer

(respectively) under which data managers (deployed from IDSP/ NHM) responsible for collecting, collating and analyzing data from field and health facilities. Daily situation reports will be put up.

The state will provide aggregate data on daily basis on the following (for the day and cumulative):

- i. Total number of suspect cases
- ii. Total number of confirmed cases
- iii. Total number of critical cases on ventilator
- iv. Total number of deaths
- v. Total number of contacts under surveillance

15.2 Control room in the containment zone

A control room shall be set up inside the containment zone to facilitate collection, collation and dissemination of data from various field units to District and State control rooms. This shall be manned by an epidemiologist under which data managers (deployed from IDSP/ NHM) will be responsible for collecting, collating and analyzing data from field and health facilities.

This control room will provide daily input to the District control room for preparation of daily situation report.

15.3 Alerting the neighboring districts/States

The control room at State Government will alert all neighboring districts. There shall be enhanced surveillance in all such districts for detection of clustering of symptomatic illness. Awareness will be created in the community for them to report symptomatic cases/contacts.

Also suitable provisions shall be created for enhancing horizontal communication between adjacent districts, especially for contact tracing exercise and follow up of persons exiting the containment zone.

16. CAPACITY BUILDING

16.1 Training content

Trainings will be designed to suit requirement of each and every section of healthcare worker involved in the containment operations. These trainings for different target groups shall cover:

1. Field surveillance, contact tracing, data management and reporting
2. Surveillance at designated exit points from the containment zone
3. Sampling, packaging and shipment of specimen

4. Hospital infection prevention and control including use of appropriate PPEs and bio-medical waste management
5. Clinical care of suspect and confirmed cases including ventilator management, critical care management
6. Risk communication to general community

16.2 Target trainee population

Various sections of healthcare workforce (including specialist doctors, medical officers, nurses, ANMs, Block Extension Educators, MHWs, ASHAs), workforce from non-health sector (security personnel, Anganwadi Workers, support staff etc.), volunteers for COVID and other essential services (NSS/NCC/NYK/IRCS/Home Guard/Civil Defence). Trainings will be tailored to requirements of each of these sections.

Online training will be made available in IGoT platform of DOPT. The trained resource will be made available at www.covidwarriors.gov.in.

An orientation training will be conducted by the RRT a day prior to containment operations are initiated.

16.3 Replication of training in other districts

The State Govt. will ensure that unaffected districts are also trained along the same lines so as to strengthen the core capacities of their RRTs, doctors, nurses, support staff and non-health field formations. These trainings should be accompanied with functional training exercises like mock-drills.

An SOP for Mock- drill is at <https://www.mohfw.gov.in/pdf/MockDrill.pdf>

17. FINANCING OF CONTAINMENT OPERATIONS

The fund requirement would be estimated taking into account the inputs in the micro-plan and funds will be made available to the district collector from NHM flexi-fund.

17.1 Scaling down of operations

The operations will be scaled down if no secondary laboratory confirmed COVID-19 case is reported from the containment and buffer zones for at-least 4 weeks after the last confirmed test has been isolated and all his contacts have been followed up for 28 days. The containment operation shall be deemed to be over 28 days from the discharge of last confirmed case (following negative tests as per discharge policy) from the designated health facility i.e. when the follow up of hospital contacts will be complete.

The closing of the surveillance for the clusters could be independent of one another provided there is no geographic continuity between clusters. However, the surveillance will continue for ILI/SARI.

However, if the containment plan is not able to contain the outbreak and large numbers of cases start appearing, then a decision will need to be taken by State administration to abandon the containment plan and start on mitigation activities.

18. IMPLEMENTATION OF THE MICRO-PLAN

Based on the above activities, the State/ District will prepare an event specific micro-plan and implement the containment operations.

19. FOLLOWING UP OF ADDITIONAL GUIDELINES ISSUED FROM TIME TO TIME

As the situation is still evolving, based on additional evidence, and the spread of cases, additional guidelines are issued by the government from time to time. Those applicable in terms of management efforts in the identified clusters shall be taken into account and implemented accordingly.

The additional instructions, if any, are made available on MoHFW website from time to time.



Updated Containment Plan for
Large Outbreaks
Novel Coronavirus Disease 2019
(COVID-19)

[Version 3 16th May 2020]

Ministry of Health and Family Welfare
Government of India

1. INTRODUCTION

1.1. Background

Coronaviruses are large group of viruses that cause illness in humans and animals. Rarely, animal coronaviruses can evolve and infect people and then spread between people such as has been seen with MERS and SARS. Although most human coronavirus infections are mild, the epidemics of the severe acute respiratory syndrome coronavirus (SARS-CoV) and Middle East respiratory syndrome coronavirus (MERS-CoV), have caused more than 10,000 cumulative cases in the past two decades, with mortality rates of 10% for SARS-CoV and 37% for MERS-CoV.

The outbreak of Novel coronavirus disease (COVID-19) was initially noticed in a seafood market in Wuhan city in Hubei Province of China in mid-December, 2019, has now spread to 214 countries/territories/areas worldwide.

1.2. Risk Assessment

WHO (under International Health Regulations) has declared this outbreak as a “Public Health Emergency of International Concern” (PHEIC) on 30th January 2020. WHO subsequently declared COVID-19 a pandemic on 11th March, 2020.

Most people infected with COVID-19 virus have mild disease and recover. Approximately 80% of laboratory confirmed patients have had mild disease, 15% require hospitalization and 5% cases are critical requiring ventilator management.

The overall case fatality ratio (CFR) is 6.9% globally, which is considerably lower than that was reported during SARS (15%) and MERS-CoV outbreaks (37%). The CFR varies by location and intensity of transmission. The mortality is high among elderlies, particularly those with co-morbid conditions like coronary artery disease, diabetes, hypertension, chronic respiratory diseases etc.

1.3. Global Scenario

As on 14th May, 2020, COVID-19 confirmed cases are being reported from 214 countries/territories/areas. A total of 42,48,389 laboratory confirmed cases and 2,92,046 deaths have been reported from globally. Focus of outbreak that was initially China, has now shifted to European region and United States of America.

Maximum number of cases is currently being reported from USA, Russia, Spain, UK, Italy, Germany, Brazil, Turkey and France.

1.4. Indian Scenario

As on 14th May, 2020, a total of 51401 active cases, 27919 cured/ discharged and 2649 deaths have been reported so far.

1.5. Epidemiology

Coronaviruses belong to a large family of viruses, some causing illness in people and others that circulate among animals, including camels, cats, bats etc. Rarely, animal corona viruses may evolve and infect people and then spread between people as witnessed during the outbreak of Severe Acute Respiratory Syndrome (SARS, 2003) and Middle East Respiratory Syndrome (MERS, 2014). The etiologic agent responsible for current outbreak of SARS-CoV-2 is a novel coronavirus is closely related to SARS-Coronavirus.

In humans, the transmission of SARS-CoV-2 can occur via respiratory secretions (directly through droplets from coughing or sneezing, or indirectly through contaminated objects or surfaces as well as close contacts). Current estimates of the incubation period of COVID range from 2-14 days. Common symptoms include fever, fatigue, dry cough and breathing difficulty. Upper respiratory tract symptoms like sore throat, rhinorrhoea, and gastrointestinal symptoms like diarrhoea and nausea/ vomiting are also reported.

As per analysis of the biggest cohort reported by Chinese CDC, about 81% of the cases are mild, 14% require hospitalization and 5% require ventilator and critical care management. The deaths reported are mainly among elderly population particularly those with co-morbidities.

At the time of writing this document, many of the crucial epidemiological information particularly source of infection, mode of transmission, period of infectivity, etc. are still under investigation.

2. Strategic Approach

India would be following a scenario based approach for the following possible scenarios:

- i. Travel related case reported in India
- ii. Local transmission of COVID-19
- iii. Large outbreaks amenable to containment
- iv. Wide-spread community Transmission of COVID-19 disease
- v. India becomes endemic for COVID-19

2.1. Strategic Approach for when “only travel related cases reported from India”

- (i) Inter-ministerial coordination (Group of Ministers, Committee of Secretaries) and Centre-State Co-ordination been established.

- (ii) Early Detection through Points of Entry (PoE) screening of passengers coming from affected countries through 30 designated airports, 12 major ports, 65 minor ports and 8 land crossings.
- (iii) Surveillance and contact tracing through Integrated Disease Surveillance Programme (IDSP) for tracking travellers in the community who have travelled from affected countries and to detect clustering, if any, of acute respiratory illness.
- (iv) Early diagnosis through a network laboratory of ICMR which are testing samples of suspect cases.
- (v) Buffer stock of personal protective equipment maintained.
- (vi) Risk communication for creating awareness among public to follow preventive public health measures.

2. 2. Local transmission of COVID-2019 disease

The strategy will remain the same as explained in para 2.1 as above. In addition, cluster containment strategy will be initiated with:

- Active surveillance in containment zone with contact tracing within and outside the containment zone.
- Expanding laboratory capacity for testing all suspect samples, close contacts, ILI and SARI
- Establishing surge capacities for isolating all suspect / confirmed cases for clinical management.
- Implementing social distancing measures.
- Intensive risk communication.

2.3 Large outbreaks amenable to containment

The strategy will remain the same as explained in para 2.2 as above but vary in extent depending upon spread and response to be mounted to contain it. Geographic quarantine and containment strategy will include:

- Defining large area of operation and applying strict perimeter control
- Active search of cases, early isolation, contact listing and tracking, quarantine and follow up of contacts
- Testing all suspect cases, symptomatic contacts, asymptomatic direct and high-risk contacts of a confirmed case and ILI/ SARI cases as per the guidelines issued from time to time.
- Clinical management based on risk profile
- Social distancing measures
- Administer HCQ in healthcare workers and contacts as per the defined protocol
- Create awareness on hand hygiene, respiratory etiquettes and sanitation

3. Scope of this Document

In alignment with strategic approach, this document provides action that needs to be taken for containing a large outbreak. The actions for mitigation phase will be dealt separately under a mitigation plan.

4. Objective

The objective of this plan is to break the chain of transmission thus reducing the morbidity and mortality due to COVID-19.

5. Containment for large outbreaks through geographic quarantine

5.1 Large outbreak

A large outbreak is defined as localized increase in the incidence of a COVID-19 cases occurring within a defined geographic area e.g., in a village, town, or city. This could also imply progression of a small cluster, earlier noticed for which cluster management action is under implementation, into multiple clusters. The cases may or may not be epidemiologically linked. For operational purpose, as a working definition a large outbreak is deemed to be present when there are 15 or more cases.

5.2 Geographic quarantine

Geographic quarantine (cordon sanitaire) strategy calls for near absolute interruption of movement of people to and from a relatively large defined geographic area where there is single large outbreak or multiple foci of local transmission of COVID-19. In simple terms, it is a barrier erected around the focus of infection.

Geographic quarantine shall be applicable to such areas reporting large outbreak and/or multiple clusters of COVID-19 spread over multiple blocks of one or more districts that are contiguous based on the distribution of cases and contacts.

5.3. Containment of individual clusters within the geographically defined perimeter

The strategy is to contain multiple clusters noted within the outbreak zone. Cluster Containment Strategy would be to contain the disease within a defined geographic area by early detection of cases, breaking the chain of transmission and thus preventing its spread to new areas. This would include geographic quarantine, social distancing measures, enhanced active surveillance, testing all suspected cases, isolation of cases, quarantine of contacts and risk communication to create awareness among public on preventive public health measures.

5.4. Evidence for implementing geographic quarantine

In 2009, during the H1N1 Influenza pandemic it was observed that well connected big cities with substantive population movement were reporting large number of cases, whereas rural areas and smaller towns with low population densities and relatively poor road/rail/airway connectivity were reporting only few cases.

The current geographic distribution of COVID-19 mimics the distribution of H1N1 Pandemic Influenza. This suggests that while the spread of COVID-19 in our population could be high, it's unlikely that it will be uniformly affecting all parts of the country. This calls for differential approach to different regions of the country, while mounting a strong containment effort in hot spots.

Large scale measures to contain COVID-19 over large territories have been tried in China. Mathematical modeling studies have suggested that containment might be possible especially when other public health interventions are combined with an effective social distancing strategy.

5.4. Factors affecting large outbreak cluster containment

A number of variables determine the success of the containment operations through geographic quarantine. These are:

- (i) Number and size of the cluster/s.
- (ii) Effectiveness of geographic quarantine.
- (iii) How efficiently the virus is transmitting in Indian population, taking into account environmental factors especially temperature and humidity.
- (iv) Public health response in terms of active case finding, testing of large number of cases, immediate isolation of suspect and confirmed cases and quarantine of contacts.
- (v) Geographical characteristics of the area (e.g. accessibility, natural boundaries)
- (vi) Population density and their movement (including migrant population).
- (vii) Ability to ensure basic infrastructure and essential services.

6. Action plan for geographic quarantine for large outbreak containment

6.1. Legal framework

The State should review the existing legal instruments to implement the containment plan. Some of the Acts/ Rules for consideration could be

- (i) Disaster Management Act (2005)
- (ii) Epidemic Act (1897)

- (iii) Cr.PC and
- (iv) State Specific Public Health Acts.

The Home Ministry has delegated the powers under DM Act, 2005 [Section 10 sub-section 2 clauses (i) and (I)] to Secretary (Health and Family Welfare) to act in such a way to contain or control the outbreak. States may invoke the provisions under DM Act, 2005 or under the Epidemic Act, 1897 to delegate powers to identified authority to act in such a manner to control or contain the outbreak.

Indian Penal Code under sections 270 provides power to act against those indulging in spread of disease. Section 144 of the Code of Criminal Procedure, when invoked, prohibits gathering of people.

6.1. Institutional mechanisms and Inter-sectoral Co-ordination

At the Union Government level

6.1.1 The Group of Ministers (GoM) under the Chairmanship of Union Health Minister will be the apex body to take policy decisions. The GoM will have Ministers of External Affairs, Civil Aviation, Shipping, Pharmaceuticals, Home Ministry and option for co-opting any other Ministry. The Union Health Minister will have an advisory Group that will advise him on way forward. The Public Health Working Group under Secretary (H) and Joint Monitoring Group under DGHS will provide technical inputs.

6.1.2. At the national level, the Cabinet Secretary/ National Crisis Management Committee (NCMC) / Committee of Secretaries (CoS) will review the situation across the country and continue to direct the concerned Ministries to implement its directions. The co-ordination with health and non-health sectors will be managed by NCMC/ CoS, on issues, flagged by Ministry of Health.

The scale of arrangement within the Ministry of health will be expanded with additional areas among the core capacities assigned to various officers. If need be, Empowered group will take decisions for the core areas of work (planning-co-ordination, surveillance, laboratory support, hospital preparedness, human resource, logistics and data analysis etc.).

At the State level

6.1.3. The Concerned State will activate State Crisis Management Committee or the State Disaster Management Authority, as the case may be to manage the clusters of COVID-19.

Institutional arrangement at the operational level

6.1.4. District Collector would be the nodal person for all preparedness and response activities within his jurisdiction. District Collector will hold regular meetings with health functionaries, DDMA, Revenue, PWD, Forest, Education and Panchayati Raj/ Local Self Governance Departments where the containment plan will be finalized and operationalized. These officials will issue directions to their ground level staff in all aspects of preparedness, control and containment in accordance with the Containment Plan and Guidelines.

District Collector would need to identify key issues (logistics, legal, technical and resources) and address them for implementing containment operations. He/she will keep ready all administrative orders for social distancing, restriction of rail/road/air transport, perimeter control and continuity of essential services.

In addition, a compendium of all the administrative orders required for enforcing the non-pharmaceutical interventions would be prepared well in advance and kept ready to be executed during response phase.

6.2. Trigger for Action

Epidemiological intelligence on increase in the incidence of a COVID-19 cases occurring within a defined geographic area will be trigger for action. This will be provided by IDSPs early warning and response (EWAR) system. Routine laboratory based surveillance of SARI cases is another trigger for action.

6.3. Deployment of Rapid Response Teams (RRT)

State will deploy its state RRT and district RRT teams to undertake mapping of cases and contacts so as to delineate the containment and buffer zones. Emergency Medical Relief (EMR) division, Ministry of Health and Family Welfare may deploy the Central Rapid Response Team (RRT) to support and advice the State.

6.4. Identify area under geographic quarantine (Containment zone)

6.4.1 Defining containment and buffer zones:

Boundary for geographic quarantine will be defined based on:

- i. Mapping of cases and contacts
- ii. Geographical dispersion of cases and contacts
- iii. Area having well demarcated perimeter
- iv. Enforceability of perimeter control

This is done by mapping the cases & contacts for defining the area of operation. If data for mapping is not readily available or could not be mapped immediately, then the below mentioned criteria will be followed:

- **Rural areas:**
 - Block/Sub district/district population with buffer zone of all neighboring block/sub district/district
- **Urban areas:**
 - Containment Zone: Entire population of towns and for large cities, zones/districts from where cases are reported
 - Buffer Zone: Neighboring urban/rural districts

The area should be appropriately defined by the district administration/local urban body with technical inputs at local level & it would be appropriate to err on the higher side.

The buffer zone is an area where new cases are more likely to appear. Thus, the health institutions, including private institutions, should be aware of the signs & symptoms and undertake SARI/ and ILI surveillance as per norms.

6.4.2 Perimeter

Once the Containment Zone is delineated the perimeter will be defined and there would be strict perimeter control with:

- i. Establishment of clear entry and exit points,
- ii. No movement to be allowed except for medical emergencies and essential goods and services,
- iii. No unchecked influx of population to be allowed and
- iv. People transiting to be recorded and followed through IDSP.

6.4.3 Activities in Containment and Buffer zones

Containment Zone	Buffer Zone
<ol style="list-style-type: none"> i. Active search for cases through physical house to house surveillance by Special Teams formed for the purpose ii. Testing of all cases as per sampling guidelines iii. Contact tracing iv. Identification of local community volunteers to help in surveillance, contact tracing and risk communication 	<ol style="list-style-type: none"> i. Enhanced passive surveillance for ILI and SARI cases in the buffer zone through the existing Integrated Disease Surveillance Programme. ii. Create community awareness on preventive measures such as personal hygiene, hand hygiene and respiratory etiquettes. iii. Use of face cover, social distancing through enhanced IEC activities. iv. To ensure social distancing by:

<ul style="list-style-type: none"> v. Extensive inter-personal and community based communication vi. Strict enforcement of social distancing vii. Advocacy on hand hygiene, respiratory hygiene, environmental sanitation and wearing of masks / face-covers viii. Clinical management of all confirmed cases 	<ul style="list-style-type: none"> a. Cancelling all mass gathering events, meetings in public or private places. b. Avoiding public places c. Closure of schools, colleges and work places
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7. Surveillance

7.1. Active Surveillance

The residential areas will be divided into sectors for the ASHAs/Anganwadi workers/ANMs each covering 100 households (50 households in difficult areas). Additional workforce would be mobilized from neighboring districts (except buffer zone) to cover all the households in the containment zone. Additional workforce if required will be listed from the covidwarriors.gov.in. This website provides access to list of volunteers trained for surveillance (ASHAs, Anganwadi workers, NSS, NCC, IRCS, NYKV). This workforce will have supervisory officers (PHC/CHC/Ayush doctors) in the ratio of 1:5.

The field workers will be performing active house to house surveillance daily in the containment zone from 8:00 AM to 2:00 PM. They will line list the family members and those having symptoms. The field worker will provide a mask to the suspect case and to the care giver identified by the family. The patient will be isolated at home till such time he/she is examined by the supervisory officer. They will also follow up contacts identified by the RRTs within the sector allocated to them.

All ILI/SARI cases reported in the last 14 days by the IDSP in the containment zone will be tracked and reviewed to identify any missed case of COVID-19 in the community.

Any case falling within the case definition will be conveyed to the supervisory officer who in turn will visit the house of the concerned, confirm that diagnosis as per case definition and will make arrangements to shift the suspect case to the designated treatment facility. The supervisory officer will collect data from the health workers under him/ her, collate and provide the daily and cumulative data to the control room by 4.00 P.M. daily.

7.2. Passive Surveillance

All health facilities in the containment zone will be listed as a part of mapping exercise. All such facilities both in Government and private sector (including clinics) shall report clinically suspect cases of COVID-19 on real time basis (including 'Nil' reports) to the control room at the district level. The health facilities in the buffer

7.3. Contact Tracing

The contacts of the laboratory confirmed case/ suspect case of COVID-19 will be line-listed and tracked and kept under surveillance at home for 28 days (by the designated field worker). The Supervisory officer in whose jurisdiction, the laboratory confirmed case/ suspect case falls shall inform the Control Room about all the contacts and their residential addresses. The control room will in turn inform the supervisory officers of concerned sectors for surveillance of the contacts. If the residential address of the contact is beyond the allotted sector, the district IDSP will inform the concerned Supervisory officer/concerned District IDSP/State IDSP.

7.4. Surveillance in Buffer zone

The surveillance activities to be followed in the buffer zone are as follows:

- i. Review of ILI/SARI cases reported in the last 14 days by the District Health Officials to identify any missed case of COVID-19 in the community.
- ii. Enhanced passive surveillance for ILI and SARI cases in the buffer zone through the existing Integrated Disease Surveillance Programme.
- iii. In case of any identified case of ILI/SARI, sample should be collected and sent to the designated laboratories for testing COVID-19.

All health facilities in the buffer zone will be listed as a part of mapping exercise. All such facilities both in Government and private sector (including clinics) shall report clinically suspect cases of COVID-19 on real time basis (including 'nil' reports) to the control room at the district level. Measures such as personal hygiene, hand hygiene, social distancing to be enhanced through IEC activities in the buffer zone.

7.5. Perimeter Control

The perimeter control will ensure that there is no unchecked outward movement of population from the containment zone except for maintaining essential services (including medical emergencies) and government business continuity. It will also limit unchecked influx of population into the containment zone. The authorities at these entry points will be required to inform the incoming travelers about precautions to be taken and will also provide such travelers with an information pamphlet and mask.

All vehicular movement, movement of public transport and personnel movement will be restricted. All roads including rural roads connecting the containment zone will be guarded by police.

The District administration will post signs and create awareness informing public about the perimeter control. Health workers posted at the exit point will perform screening (e.g. interview travelers, measure temperature, record the place and duration of intended visit and keep complete record of intended place of stay).

Details of all persons moving out of perimeter zone for essential/ emergency services will be recorded and they will be followed up through IDSP. All vehicles moving out of the perimeter control will be decontaminated with sodium hypochlorite (1%) solution.

8. LABORATORY SUPPORT

8.1 Designated laboratories

The identified VRDL network laboratory, nearest to the affected area, will be further strengthened to test samples. The other available govt. laboratories and private laboratories (BSL 2 following BSL 3 precautions) if required, shall also be engaged to test samples, after ensuring quality assurance by ICMR/VRDL network. If the number of samples exceeds its surge capacity, samples will be shipped to other nearby laboratories or to NCDC, Delhi or NIV, Pune or to other ICMR lab networks depending upon geographic proximity.

The list of laboratories identified for testing COVID is at:

https://www.icmr.gov.in/pdf/covid/labs/COVID_Testing_Labs_15052020.pdf

All test results should be available within 24 hours of sampling. ICMR along with the State Government will ensure that there are designated agencies for sample transportation to identified laboratories. The contact number of such courier agencies shall be a part of the micro-plan.

The guidelines for sample collection, packaging and transportation is available at:

https://www.mohfw.gov.in/pdf/5Sample%20collection_packaging%20%202019-nCoV.pdf

The designated laboratory will provide daily update (daily and cumulative) to District, State and Central Control Rooms on:

- i. No. of samples received
- ii. No. of samples tested
- iii. No. of samples under testing
- iv. No. of positive samples

8.2 Testing criteria

The ICMR strategy for testing is given below:

1. All symptomatic individuals who have undertaken international travel in the last 14 days
2. All symptomatic contacts of laboratory confirmed cases
3. All symptomatic health care workers
4. All patients with Severe Acute Respiratory Illness (fever AND cough and/or shortness of breath)
5. Asymptomatic direct and high-risk contacts of a confirmed case should be tested once between day 5 and day 14 of coming in his/her contact

Details are available at:

https://main.icmr.nic.in/sites/default/files/upload_documents/Strategy_for_COVID19_Test_v4_09042020.pdf

The testing at the field level shall be taken up as per the criteria proposed by ICMR from time to time.

8.3. Tests approved for COVID Diagnosis

RT-PCR is the standard test for laboratory diagnosis. In laboratories, wherever Cepheid Xpert Xpress SARS-CoV2 Cartridge Based Nucleic Acid Amplification Test (CBNAAT) has been made available, the advisory of ICMR at the following link will be followed:

https://main.icmr.nic.in/sites/default/files/upload_documents/Cepheid_Xpert_Xpress_SARS-CoV2_advisory_v2.pdf

Laboratories following TrueNat as a screening test for detecting SARS-CoV2 will follow additional guidelines available at:

https://main.icmr.nic.in/sites/default/files/upload_documents/Additional_guidance_on_TrueNat_based_COVID19_testing.pdf

For testing persons in quarantine camps of migrant workers or those international passengers returning home, RT-PCR test based on pooled sampling will be used. The guideline for pooling of samples is available at:

<https://www.mohfw.gov.in/pdf/GuidelineforrtPCRbasedpooledsamplingFinal.pdf>

ICMR specimen referral form is available at:

https://main.icmr.nic.in/sites/default/files/upload_documents/SRF_v9.pdf

Additional testing methodologies prescribed from time to time by government shall be adopted at the field level.

9. Hospital care

All suspect/confirmed COVID-19 cases will be hospitalized and kept in isolation in dedicated COVID-19 hospitals/hospital blocks. Persons testing positive for COVID-19 will remain hospitalized till such time as two of their samples are tested negative as per discharge policy. About 15% of the patients are likely to require hospitalization, and an additional 5 % will require critical care and ventilator management.

A three tier arrangement for managing suspect/ confirmed cases will be implemented to decrease burden on the COVID Block/ hospital.

- (i) The mild and very mild cases will be kept in COVID Care Centers which essentially are temporary makeshift hospital facilities made by converting hotels/ hostel/ guest houses/ stadiums near a COVID-19 hospital. The existing quarantine facility

may also be converted. This will be identified near an existing COVID hospital/ COVID block.

- (ii) Dedicated COVID Health Centers would be identified in existing hospitals. These centers will have isolation beds with oxygen support for managing moderate cases, which require monitoring of their clinical status (patients with radiological evidence of pneumonia).
- (iii) Severe cases requiring critical care/intensive care will be managed in Dedicated COVID Hospitals. Some of the severe cases may progress to respiratory failure and /or progress to multi-organ failure and hence critical care facility/ dialysis facility/ and Salvage therapy [Extra Corporeal Membrane Oxygenator(ECMO)] facility for managing the respiratory/renal complications/ multi-organ failure shall be required. If such facilities are not available in the containment zone, nearest tertiary care facility in Government / private sector needs to be identified, that becomes a part of the plan.

The categorization of COVID health facilities and categorization of patients based on severity are available at:

<https://www.mohfw.gov.in/pdf/FinalGuidanceonMangaementofCovidcasesversion2.pdf>.

In every hospital fever clinic with triage, holding areas, sampling stations and individual doctor's chambers where patients with fever/cough/breathing difficulty will be attended will be established. Necessary infection prevention and control practices shall be ensured at all such facilities.

9.1 Surge capacity

Based on the risk assessment, if the situation so warrants (if data suggests an exponential rise in the number of cases), the surge capacity of the identified hospitals will be enhanced, private hospitals shall also be roped in and sites identified for temporary hospitals to be operationalized.

Related guidelines are available at:

<https://www.mohfw.gov.in/pdf/AdvisoryforHospitalsandMedicalInstitutions.pdf>

9.2 Pre-hospital care (ambulance facility)

Ambulances need to be in place for transportation of suspect/confirmed cases. Such ambulances shall be manned by personnel adequately trained in Infection Prevention and Control (IPC), use of PPE and protocol that needs to be followed for disinfection of ambulances (by 1% sodium hypochlorite solution using knap sack sprayers).

The standard operating procedure for transporting Covid patient is at:

<https://www.mohfw.gov.in/pdf/StandardOperatingProcedureSOPfortransportingasuspectorconfirmedcaseofCOVID19.pdf>

9.3 Infection Prevention Control Practices

Healthcare associated infections in fellow patients and attending healthcare personnel are well documented in the current COVID-19 outbreak as well. There shall be strict adherence to Infection prevention control practices in all health facilities. Detailed guidelines on infection prevention control are available at:

<https://www.mohfw.gov.in/pdf//National%20Guidelines%20for%20IPC%20in%20HCF%20-%20final%281%29.pdf>

IPC committees would be formed (if not already in place) with the mandate to ensure that all healthcare personnel are well aware of IPC practices and suitable arrangements for requisite PPE and other logistic (hand sanitizer, soap, water etc.) are in place. The designated COVID treatment facility will ensure that all healthcare staff is trained in IPC (washing of hands, respiratory etiquettes, donning/doffing & proper disposal of PPEs and bio-medical waste management).

Healthcare workers will be provided guidance on preventive measures and management of risk to accidental exposure or other-wise to COVID. Advisory for managing Health care workers exposed to COVID is available at:

<https://www.mohfw.gov.in/pdf/AdvisoryformanagingHealthcareworkersworkinginCOVIDandNonCOVIDareasofofthehospital.pdf>

At all times health care workers in COVID treatment facilities and Non-covid treatment facility/ areas will use personal protection gears following the below mentioned guidelines:

<https://www.mohfw.gov.in/pdf/GuidelinesonrationaluseofPersonalProtectiveEquipment.pdf>

Additional guidelines for Non- Covid areas are available at:

<https://www.mohfw.gov.in/pdf/UpdatedAdditionalguidelinesonrationaluseofPersonalProtectiveEquipmentsettingapproachforHealthfunctionariesworkinginnonCOVID19areas.pdf>

Environmental cleaning should be done twice daily and will consist of damp dusting and floor mopping with sodium hypochlorite solution of frequently touched surfaces. Detailed guidelines are available at:

<https://www.mohfw.gov.in/pdf//National%20Guidelines%20for%20IPC%20in%20HCF%20-%20final%281%29.pdf>

The bio medical waste will be managed in accordance with Bio-medical waste management rules. Guidelines for handling, treatment and disposal of waste generated during treatment/diagnosis/ quarantine of COVID-19 Patients is at:

<https://www.mohfw.gov.in/pdf/63948609501585568987wastesguidelines.pdf>

10. CLINICAL MANAGEMENT

10.1. Clinical Management

The hospitalized cases may require symptomatic treatment for fever. Paracetamol is the drug of choice. Suspect cases with co-morbid conditions, if any, will require appropriate management of co-morbid conditions.

For patients with severe acute respiratory illness (SARI), having respiratory distress may require, pulse oximetry, oxygen therapy, non-invasive and invasive ventilator therapy.

The clinical management protocol to be followed is available at: <https://www.mohfw.gov.in/pdf/RevisedNationalClinicalManagementGuidelineforCOVID1931032020.pdf>

10.2. Discharge Policy

Discharge policy for suspected cases of COVID-19 tested negative will be based on the clinical assessment of the treating physician. For those tested positive for COVID-19, their discharge from hospital will be governed by the discharge policy available at:

<https://www.mohfw.gov.in/pdf/ReviseddischargePolicyforCOVID19.pdf>

10.3. Dead body management

The dead body of a COVID case does not spread infection. The healthcare worker however handling the body immediately after death is at risk in case there is exposure to bodily fluids and shall be protected.

Detailed guidelines of dead body management as available at:

https://www.mohfw.gov.in/pdf/1584423700568_COVID19GuidelinesonDeadbodymanagement.pdf shall be followed.

11. Psychosocial support

Quarantine, isolation and being affected by a new disease, all can be very stressful for those involved and for their family members. Social distancing measures that force one to stay at home and resulting social isolation can be frustrating. This apart, the healthcare workers working under the fear of an unknown disease, under stressful and demanding situations, impact their mental well-being. A guidance note on dealing with various mental issues is available at: <https://www.mohfw.gov.in/pdf/MindingourmindsduringCoronaeditedat.pdf>.

The National Institute of Mental Health and Neuro-Sciences (NIMHANS) will be the nodal agency to plan and execute psycho-social support. NIMHANS will prepare a Psycho-Social Support plan and implement the same in the COVID affected areas.

12. Pharmaceutical interventions

As of now there is no approved specific drug or vaccine for cure or prevention of COVID-19.

However, Hydroxychloroquine has been recommended as chemoprophylaxis drug for use by asymptomatic healthcare workers managing COVID-19 cases and asymptomatic contacts of confirmed COVID-19 cases under medical supervision.

Advisory issued by ICMR in this regard is available at:

<https://www.mohfw.gov.in/pdf/AdvisoryontheuseofHydroxychloroquinasprophylaxisforSARS-CoV2infection.pdf>).

Contacts and healthcare workers receiving Hydroxychloroquine as chemoprophylaxis will be informed to report any untoward health event to nearest health facility.

In addition, a combination of Hydroxychloroquine and Azithromycin has been advocated for use in severe cases of COVID-19 under medical supervision.

Guideline on clinical management protocol of COVID-19 is available at: <https://www.mohfw.gov.in/pdf/RevisedNationalClinicalManagementGuidelineforCOVID1931032020.pdf>

13. NON-PHARMACEUTICAL INTERVENTIONS

In the absence of proven drug or vaccine, non-pharmaceutical interventions will be the main stay for containment of COVID-19 cluster.

13.1. Preventive public health measures

There will be social mobilization among the population in containment and buffer zone for adoption of community-wide practice of frequent washing of hands and respiratory etiquettes in schools, colleges, work places and homes. The community will also be encouraged to self-monitor their health and report to the visiting ASHA/Anganwadi worker or to nearest health facility.

13.2. Quarantine and isolation

Quarantine and Isolation are important mainstay of cluster containment. These measures help by breaking the chain of transmission in the community.

13.2.1. Quarantine

Quarantine refers to separation of individuals who are not yet ill but have been exposed to COVID-19 and therefore have a potential to become ill. There will be voluntary home quarantine of contacts of suspect /confirmed cases. The guideline on home quarantine is available at:

<https://www.mohfw.gov.in/pdf/Guidelinesforhomequarantine.pdf>

13.2.2. Isolation

Isolation refers to separation of individuals who are ill and suspected or confirmed of COVID-19. There are various modalities of isolating a patient. Ideally, patients can be isolated in individual isolation rooms or negative pressure rooms with 12 or more air-changes per hour.

In resource constrained settings, all positive COVID-19 cases can be cohorted in a ward with good ventilation (Covid Care Centre, Dedicated Covid Health Centre). Similarly, all suspect cases should also be cohorted in a separate ward. However, under no circumstances these cases should be mixed up. A minimum distance of 1 meter needs to be maintained between adjacent beds. All such patients need to wear a triple layer surgical mask at all times.

Pre-symptomatic cases/ very mild/ mild cases can opt for home isolation provided they follow the guidelines available at:

<https://www.mohfw.gov.in/pdf/RevisedguidelinesforHomelsofverymildpresymptomaticCOVID19cases10May2020.pdf>

13.3 Social distancing measures

For the cluster containment, social distancing measures are key interventions to rapidly curtail the community transmission of COVID-19 by limiting interaction between infected persons and susceptible hosts. The following measures would be taken:

13.3.1 Closure of schools, colleges and work places

Administrative orders will be issued to close schools, colleges and work places in containment and buffer zones. Intensive risk communication campaign will be followed to encourage all persons to stay indoors for an initial period of 28 days, to be extended based on the risk assessment. Based on the risk assessment and indication of successful containment operations, an approach of staggered work and market hours may be put into practice.

13.3.2 Cancellation of mass gatherings

All mass gathering events and meetings in public or private places, in the containment and buffer zones shall be cancelled/banned till such time, the area is declared to be free of COVID-19 or the outbreak has increased to such scales to warrant mitigation measures instead of containment.

13.3.3. Advisory to avoid public places

The public in the containment and buffer zones will be advised to avoid public places and only if necessary for attending to essential services. The administration will ensure supply of enough triple layer masks to the households in the containment and buffer zones.

13.3.4. Cancellation of public transport (bus/rail)

There will be prohibition for persons entering the containment zone and on persons exiting the containment zone. To facilitate this, if there are major bus transit hubs or railway stations in the containment zone, the same would be made dysfunctional temporarily. Additionally, irrespective of fact that there is a rail/road transit hub, the perimeter control will take care of prohibiting people exiting the containment zone including those using private vehicles and taxis.

As significant inconvenience is caused to the public by adopting these measures in the containment zone, State government would proactively engage the community and work with them to make them understand the benefits of such measures.

Advisory on social distancing is at

<https://www.mohfw.gov.in/pdf/SocialDistancingAdvisorybyMOHFW.pdf>

14. Material Logistics

14.1. Personal Protective Equipment

Personal protective equipments are a scarce resource and needs to be used rationally. Guidelines for rational use of PPEs using a setting approach is at:

<https://www.mohfw.gov.in/pdf/GuidelinesonrationaluseofPersonalProtectiveEquipment.pdf>

Additional guidelines for Non- Covid areas are available at:

<https://www.mohfw.gov.in/pdf/UpdatedAdditionalguidelinesonrationaluseofPersonalProtectiveEquipmentssettingapproachforHealthfunctionariesworkinginnonCOVID19areas.pdf>

The State Government has to ensure adequate stock of personal protective equipment. The quantity required for a containment operation will depend upon the size & extent of the cluster and the time required containing it.

14.2. Transportation

A large number of vehicles will be required for mobilizing the surveillance and supervisory teams. The vehicles will be pooled from all Government departments. The shortfall, if any, will be met by hiring of vehicles.

14.3. Stay arrangements for the field staff

The field staff brought in for the surveillance activities and that for providing perimeter control need to be accommodated within the containment zone. Facilities such as schools, community buildings, etc. will be identified for sheltering. Catering arrangement will have to be made at these locations.

15. Risk communication

15.1 Risk communication material

Risk communication materials [comprising: (i) posters and pamphlets (ii) audio only material (iii) AV films (prepared by PIB/MoH&FW)] will be prepared and kept ready for targeted roll out in the entire geographic quarantine zone.

15.2 Communication channels

15.2.1 Interpersonal communication

During house to house surveillance, ASHAs/ other community health workers will interact with the community for:

- (i) Reporting symptomatic cases
- (ii) Contact tracing
- (iii) Information on preventive public health measures.

15.2.2 Mass communication

Awareness will be created among the community through miking, distribution of pamphlets, mass SMS and social media. Also use of radio and television (using local channels) will ensure penetration of health messages in the target community.

15.2.3 Dedicated helpline

A dedicated helpline number will be provided at the Control Room (District Headquarter) and its number will be widely circulated for providing general population with information on risks of COVID-19 transmission, the preventive measures required and the need for prompt reporting to health facilities, availability of essential services and administrative orders on perimeter control.

15.2.4 Media Management

At the Central level, only Secretary (H) or representative nominated by her shall address the media. At the State level, only Principal Secretary (H), his/her nominee will speak to the media. At the District level DM/DC will address the media.

There will be regular press briefings/ press releases to keep media updated on the developments and avoid stigmatization of affected communities. Every effort shall be made to address and dispel any misinformation circulating in media including social media.

16. INFORMATION MANAGEMENT

16.1 Control room at State & District Headquarters

A control room (if not already in place) shall be set up at State and District headquarters, managed by designated officers. This shall be manned by State and District Surveillance Officer (respectively) under which data managers (deployed from IDSP/ NHM) responsible for collecting, collating and analyzing data from field and health facilities. Daily situation reports will be put up.

The state will provide aggregate data on daily basis on the following (for the day and cumulative):

- i. Total number of suspect cases
- ii. Total number of confirmed cases
- iii. Total number of critical cases on ventilator
- iv. Total number of deaths
- v. Total number of contacts under surveillance

16.2 Control room in the containment zone

A control room shall be set up inside the containment zone to facilitate collection, collation and dissemination of data from various field units to District and State control rooms. This shall be manned by an epidemiologist under which data managers (deployed from IDSP/ NHM) will be responsible for collecting, collating and analyzing data from field and health facilities.

This control room will provide daily input to the District control room for preparation of daily situation report.

16.3 Alerting the neighboring districts/States

The control room at State Government will alert all neighboring districts. There shall be enhanced surveillance in all such districts for detection of clustering of symptomatic illness. Awareness will be created in the community for them to report symptomatic cases/contacts.

Also suitable provisions shall be created for enhancing horizontal communication between adjacent districts, especially for contact tracing exercise and follow up of persons exiting the containment zone.

17. Capacity building

It is expected that in such circumstances, large human resource requirement will be there to manage: (i) Field activities including surveillance, (ii) Clinical care at hospitals, (iii) laboratory testing and (iv) support staff to provide support services.

17.1 Training content

Trainings will be designed to suit requirement of each and every section of healthcare worker involved in the containment operations. These trainings for different target groups shall cover:

1. Field surveillance, contact tracing, data management and reporting
2. Surveillance at designated exit points from the containment zone
3. Sampling, packaging and shipment of specimen
4. Hospital infection prevention and control including use of appropriate PPEs and bio-medical waste management
5. Clinical care of suspect and confirmed cases including ventilator management, critical care management
6. Risk communication to general community and health service providers

17.2 Target trainee population

Various sections of healthcare workforce (including specialist doctors, medical officers, nurses, ANMs, Block Extension Educators, MHWs, ASHAs) and workforce from non-health sector (security personnel, Anganwadi Workers, support staff etc.) will be trained. A normative guidance is as under:

- Trained health workforce for surveillance – ANM, AASHA, Anganwadi, NSS, Red Cross, Ayush students and NYK Volunteers
- Trained supervisory field staff – PHC, Ayush and CHC doctors
- For COVID Care Center – AYUSH doctors
- For Dedicated COVID Health Center – PHC doctors
- For Dedicated COVID Hospitals – Training will be imparted on clinical and ventilatory management - Respiratory physicians, anaesthetists, intensivists, MBBS doctors who have handled ventilators, including DNB and MD students drawn from medical college/private hospitals.

District-wise trained manpower made available on dashboard of MoHFW and all training material made available on IGOT platform

Orientation training will be conducted by the RRT a day prior to containment operations are initiated.

17.3 Replication of training in other Districts

The State Govt. will ensure that unaffected Districts are also trained along the same lines so as to strengthen the core capacities of their RRTs, doctors, nurses, support staff and non-health field formations. These trainings should be accompanied with functional training exercises like mock-drills.

18. Financing of containment operations

The fund requirement would be estimated taking into account the scale of operations and funds will be made available to the district collector from NHM flexi-fund. The SDRF funds can also be used as per notification issued by Ministry of Home Affairs.

19. Scaling down of operations

The operations will be scaled down if no secondary laboratory confirmed COVID-19 case is reported from the geographic quarantine zone for at least four weeks after the last confirmed test has been isolated and all his contacts have been followed up for 28 days. A containment operation (large outbreak or cluster) is deemed to be over 28 days from the date the last case in the containment zone tests negative.

The closing of the surveillance for the clusters could be independent of one another provided there is no geographic continuity between clusters. However, the surveillance will continue for ILI/SARI.

States shall ensure that all required steps are taken to contain clusters within the large outbreak and chain of transmission is broken.

20. FOLLOWING UP OF ADDITIONAL GUIDELINES ISSUED FROM TIME TO TIME

As the situation is still evolving, based on additional evidence, and the spread of cases, additional guidelines are issued by the government from time to time. Those applicable in terms of management efforts in the identified clusters shall be taken into account and implemented accordingly.

The additional instructions, if any, are made available on MoHFW website from time to time.

**Ministry of Health & Family Welfare
Directorate General of Health Services
(Emergency Medical Relief Division)**

Preparedness and response to COVID-19 in Urban Settlements

1. Background

Informal settlements within cities that may have mushroomed due to migration have inadequate housing and poor living conditions. These settlements are affordable and accessible to the poor in the cities. The main reason for these settlements proliferation is rapid and non-inclusive patterns of urbanization catalyzed by increasing rural migration to urban areas. According to 2011 Census there are 2613 towns/cities such settlements with 6.54 crore population residing in 1.39 crore households, representing 17.4 of all urban population. This would have increased in number further since last few years.

2. Key vulnerabilities of these urban settlements

These localities are often overcrowded, with many people crammed into very small living spaces. A substantial percentage of this population is migrant workers employed in industrial and other informal sector. These areas are characterized by poor structural quality of housing, inadequate access to safe water, poor sanitation and insecure residential status. There are gaps in health and healthcare services.

In the context of COVID (or any other respiratory infectious disease for that matter) implementing strategic interventions such as surveillance, physical distancing, isolation, quarantine and communicating the risk to the dwellers could be challenging.

3. Scope of document

This document delineates focus area that need to be addressed by the Urban Local Bodies for preparedness in these settlements for responding to COVID-19.

4. Preparing these urban settlements for prevention and control of COVID-19.

4.1 Institutional mechanism

As these settlements are governed under the jurisdiction of Urban Local Bodies (Municipal Corporations or Municipalities). Planning on preparedness and response to COVID-19 by such local bodies should cover the management of COVID-19 as well as focusing on challenges unique to such populations.

4.1.1 Incident Response System

An Incident Commander of appropriate seniority would be identified depending upon the geographic extent of the settlements and its population size. The Incident Commander will identify its planning, operation, logistics and finance teams to implement the preparedness

measures to respond to a COVID outbreak. The Incident Commander shall report to the Municipal Commissioner.

4.1.2 Coordination Mechanism

A coordination mechanism shall be evolved under the leadership of Incident Commander and would comprise of representatives from Health, W&CD, ICDS, Housing & Urban Affairs, Public Health Engineering Wing, Swachh Bharat Mission, elected representatives, prominent NGOs already serving the area, community leaders, etc.

4.2 COVID-19 containment plan

The COVID containment plan for these urban settlements will address the key challenges specific to these areas. Implementation of this plan will ensure that the core capacities are available to respond to COVID-19. The core components of this plan shall be as detailed in the following sections.

4.2.1 Surveillance

In most of the cities/towns the disease surveillance system is not as well organized as in the rural areas. This is more so pronounced in these urban settlements. Hence the surveillance system shall be strengthened for surveillance and contact tracing mechanism. This would include identification of the health workers in the health posts/dispensaries, ANMs, ASHAs, Anganwadi Workers, municipal health staff, sanitation staff, community health volunteers and other volunteers (NSS/NYK/IRCS/NCC and NGOs) etc. The trained manpower available on www.covidwarriors.gov.in will be contacted for their readiness to deployment at short notice.

An orientation training will be organized by the Chief Medical Officer/Executive Health Officer to train the identified surveillance workers. The training would emphasize on the following:

- i. Basic information on COVID-19
- ii. Orientation on basic Dos and Don'ts with focus on hand hygiene, respiratory hygiene, environmental sanitation and use of face covers/masks
- iii. Active case search through questionnaire during field visit
- iv. Listing and tracking of contacts
- v. Recording temperature with handheld thermometer, recording oxygen saturation with pulse oximeter
- vi. Identification of high risk individuals based on contact history, age, and co-morbidities
- vii. Inter-personal communication with households for creating awareness on COVID-19 and other essential health services (immunization, RCH, nutrition, NCDs etc.)
- viii. Addressing stigma, health seeking behavior and other issues
- ix. Establishing rapport with the community

The plan will clearly delineate the allocation of households for the surveillance staff for house to house survey for case detection & contact tracing, coordinating sample collection, case management, data collection and reporting. The existing routine surveillance would be strengthened through dispensaries/health posts/urban health center and private health facilities for ILI/SARI surveillance.

4.2.2 Hospital preparedness and clinical management

There may not be community level structures in these areas that can be transformed into designated health facilities (COVID Care Centers); hence the existing facilities identified by the urban local body near to these settlements shall be earmarked as COVID Care Centers, Dedicated COVID Health Center and Dedicated COVID Hospital.

The civil dispensaries, health posts, health & family welfare centers and private health facilities within these settlements will act as nodal points for the wards/sub-wards/zones for detecting and reporting ILI/SARI cases through their OPDs. Such facilities will also be used as depot holder for Hydroxychloroquine, masks, household disinfectants etc. Non Covid services especially immunization, management of communicable and non-communicable diseases, and maternal and child health services should continue to be provided in these areas.

The earmarked COVID health facilities will identify teams for sample collection of suspect cases.

Ambulances for referral to be stationed within or at the perimeter of these localities, will be identified. The toll free number shall be widely disseminated in the community.

4.2.3 Pharmaceutical intervention

Enough quantity of Hydroxychloroquine will be stocked in civil dispensaries, health posts, health & family welfare centers for chemo-prophylaxis of healthcare workers and high risk contacts of confirmed cases of COVID-19.

4.2.4 Non-pharmaceutical interventions

4.2.4.1 COVID Related Behaviour: There will be community mobilization to adopt COVID related behavior for life style changes. This would include

- (i) practicing frequent hand washing,
- (ii) following respiratory etiquettes,
- (iii) ban spitting in public places,
- (iv) following social distancing and promotion of masks/face covers
- (v) avoiding consumption of gutkha, paan, cigarettes/bidis etc.

4.2.4.2 Social distancing will be a major challenge due to many people crammed into very small living spaces. While sleeping the distancing can be achieved to an extent by sleeping in opposite direction in a manner that head end of one person faces the leg of the other. Social distancing should be practiced particularly in

- (i) community water points,
- (ii) public toilets,
- (iii) PDS distribution points,
- (iv) health centers etc.

Social distancing is to be promoted at all formal and informal gatherings.

4.2.4.3 Quarantine facility (school, stadium, etc.) in a nearby area needs to be identified, where large number of high risk contacts can be accommodated. Shifting of high risk contacts (elderly and those with co-morbid conditions) is a crucial intervention to minimize the spread of disease in such persons, thereby limiting morbidity and mortality among them. A contingency plan will also be in place to move high risk population to alternate or temporary sites.

4.2.4.4 Face cover should be made mandatory. It can be manufactured locally within the area as self-help group activity or through NGOs. Common mask distribution sites and disposal sites should be identified and all dwellers may be made aware about the same.

4.2.4.5 Sanitation: Community cleaning and disinfection drive needs to be undertaken on daily basis. In particular, the community toilets need to be cleaned at-least three to four times a day.

4.2.5 Logistics

Adequate arrangement for soaps (in public toilets), disinfectants (bleaching powder, 1% sodium hypochlorite) will be ensured at the civil dispensaries, health posts, health & family welfare centers catering to the area. Similarly, availability of triple layer medical masks and gloves for healthcare workers will be ensured.

The civil dispensaries, health posts, health & family welfare centers will also be used as depot holder for Hydroxychloroquine, masks household disinfectants etc.

4.2.6 Community Volunteers

Community groups are key to creating awareness on COVID among these populations. Use of local (political, religious and opinion) leaders for communicating all aspects of the COVID prevention and control is vital as dwellers are more inclined to trust them. Under these leaders, community cadres need to be created for community engagement.

4.2.7 Risk communication

All risk communication interventions must address psycho-social issues and stigma removal messages particularly in local languages. Posters should be put up outside in the community area, toilets, water points. Local cable TV channels may be utilized to create community awareness. The population uses mobile and social media applications for communication. Hence social media should be used with appropriate messages to target these population and for refuting fake news. Community groups should also popularize adoption of AarogyaSetu application. The risk communication will be designed to create awareness on:

- Common signs and symptoms of COVID-19
- High risk population particularly elderlies with co-morbidities like hypertension, cardiovascular diseases, diabetes, renal disease etc.

Helpline number should be widely publicized for reporting cases.

4.2.8 Capacity building

The District Surveillance Officer will undertake orientation trainings of different cadres of healthcare workers working in health facilities catering to these areas, designated COVID health facilities. Such trainings will cover case management, IPC practices and data management. The District IDSP unit will also map field workers that can be used for surveillance and contact tracing. This includes ANMs, ASHAs, AWWs, corporation health staff, and community level volunteers (NSS, NCC, IRCS, NYK). Their trainings would focus on surveillance, contact tracing, home quarantine, IPC, managing quarantine and isolation centers, supply of ration to homes etc.

5. Response to COVID-19 outbreak in Urban settlements

5.1 Trigger for Action

The trigger for action would be reporting of a suspect/confirmed case from routine ILI/SARI surveillance or cluster of cases of similar ILI/SARI observed by the health post/practitioners etc. It could also be a contact of a known confirmed case.

5.2 Implementation of Cluster Containment plan

5.2.1 Incident Command System and Control room will be activated for planning, operations and logistic support. Pre-implementation coordination meetings will be held at the incident command level and at sub-ward/ward/zone level with ward officer/assistant commissioner/local CBOs/NGOs. Inter-departmental meetings will be held with health department, District Surveillance Officer, National Urban Health Mission, Sanitation Officials, Education, WCD/ICDS/ AWW, MAHILA AROGYA SAMITIS, AYUSH, NYK, NSS etc.

5.2.2 Implementation of COVID Cluster Containment Plan

The following activities will be ensured:

5.2.2.1 Defining area of operation: Upon reporting of a suspect/confirmed case of COVID-19, the District Surveillance Unit will undertake rapid identification of other cases and contacts to define containment and buffer zones. If data for mapping is not readily available, for small clusters the containment zone can be mapped as the administrative boundaries of residential colony/mohalla, surrounded by a buffer zone.

In case of a large outbreak, the entire population of municipal ward, municipal zone, police station area, towns etc. from where cases and contacts are reported may be taken as containment zone with all neighboring wards/zones/towns/districts in the buffer zone.

5.2.2.2 Applying strict perimeter control:

Most of the inhabitants of such communities are daily wage workers, who might be compelled to go outside for work. Hence, strict perimeter control must be enforced to regulate entry and exit from the containment zone.

Section 144 under CrPC will be enforced to ensure people remain in their dwelling units. The local administration however must make every effort to maintain supply of essential commodities (food, milk, groceries, medicine and other essential supplies) in such area. The routine medical needs of the population (immunization, RCH, TB, Dialysis, NCDs) must be catered to. If feasible, the relief centers in the containment zone may be geo-tagged and information may be made available through mobile applications.

The containment activities shall be implemented in line with the MoHFW's plans on COVID-19 containment (available at:

<https://www.mohfw.gov.in/pdf/Containmentplan16052020.pdf>

and

<https://www.mohfw.gov.in/pdf/UpdatedContainmentPlanforLargeOutbreaksofCOVID19Version3.0.pdf>)

for small clusters and large outbreaks respectively.

However, special considerations and needs of such population should be kept in mind while implementing the plan in these dwellings as detailed below.

5.2.2.3 Surveillance

Active Surveillance: Considering the large and dense population, the designated health worker may be allotted a much larger number of households to be visited per day. However, in spite of that some of these areas would require mobilization of large human resource

trained and listed earlier. The identified and trained health workforce and also the already listed volunteers shall be deployed for active surveillance in the containment zone.

The key activities for surveillance workers during house to house visits are:

- i. Active case search through questionnaire
- ii. Listing and tracking of contacts
- iii. Coordinating sample collection as per criteria
- iv. Recording temperature with handheld thermometer, recording oxygen saturation with pulse oximeter
- v. Identification of high risk individuals based on contact history, age, and co-morbidities
- vi. Inter-personal communication with households for creating awareness on COVID-19 and other essential health services (immunization, RCH, nutrition, NCDs etc.)
- vii. Address stigma, health seeking behavior and other issues

Adequate provisions for appropriate PPEs must be made for field level surveillance teams.

Passive Surveillance: In addition to government health facilities serving these population, surveillance network linkages need to be established with private medical practitioners working in such localities. These practitioners also need to be informed about common signs and symptoms of COVID-19, the IPC protocol to be followed while dealing with suspect cases, need for alerting the local public health authorities and referral centers for suspect cases. If deemed necessary, suitable incentive/compensation to such practitioners may be considered by local authorities.

The surveillance teams conducting active surveillance and passive surveillance being undertaken in the containment as well as buffer zones must submit their daily reports on suspect cases detected and referred, contacts traced etc.

5.2.2.4 Clinical management

The management of the suspect and confirmed cases shall be institutional, in accordance with MoHFW guidelines (available at:

<https://www.mohfw.gov.in/pdf/FinalGuidanceonMangaementofCovidcasesversion2.pdf>) and no COVID-19 case will be managed at home.

Those undergoing treatment at the identified COVID care centers shall be monitored using pulse oximetry and a provision for early oxygen supplementation and referral to Dedicated COVID Health Centers shall be made for those showing low/declining oxygen saturation.

Referral system has to be clearly defined and it shall be ensured that there are no delays in transferring patients from one facility to another as per need including availability of sufficient ambulances.

Strict adherence to Infection, Prevention and Control practices shall be followed in all COVID and Non-COVID health facilities.

In case of occurrence of a death, management of the dead body shall be in accordance with the MoHFW guidelines (available at:

https://www.mohfw.gov.in/pdf/1584423700568_COVID19GuidelinesonDeadbodymanagement.pdf)

5.2.2.5 Psychosocial support

A provision for psycho-social counselling (including addressing issues like stigma, discrimination etc) through inter-personal communication or helplines should be made available to such communities by trained personnel. Psycho-social teams shall be deployed to the area to address mental health needs (incl. treatment of pre-existing psychiatric illness) and provide mental health services.

Resource material available at <https://www.mohfw.gov.in/> under Behavioural Health : Psycho-Social module can be utilised for the same.

5.2.2.6 Non-pharmaceutical interventions (NPI)

5.2.2.6.1 NPI measures include

(i) Imposition of social distancing, including ban on all sorts of social gatherings, and very restricted movement of personnel especially within the containment zone

(ii) mandatory use of face covers with proper disposal at identified sites and

(iii) intensification of community cleaning and disinfection drive under the Swatchh Bharat initiative, with more frequent cleaning of public places especially toilets.

5.2.2.6.2 The high risk population as per clinical assessment and feasibility of effective home quarantine, if need be, can be shifted to institutional quarantine so as to have focused management of such cases as it may have an impact on mortality.

5.2.2.7 Risk Communication

COVID Appropriate Behaviour: There will be further intensification of risk communication and community mobilization to inculcate COVID appropriate behaviour for life style changes, especially hand hygiene and respiratory etiquettes.

The surveillance teams during their house to house visits shall inform the inhabitants about common signs and symptoms, preventive measures that need to be adopted, need for prompt reporting of symptoms and also address stigma and fake news. It must be stressed at all times that hiding of cases would only prove detrimental to not only their health but also to their close family members. Social mobilization will be achieved by engaging local religious, self-help groups, NGOs, local community, opinion makers and religious leaders.

5.2.3.8 Supervising, monitoring and reporting

The Incident Command will daily review the implementation of containment plans in the settlements. All information will be shared on a daily basis with the District and State Control rooms also.

The Control rooms shall analyze the information on a daily basis and necessary guidance in turn will be provided to the teams at field level as per the information so collated regularly.

**Government of India
Ministry of Health & Family Welfare
Directorate General of Health Services
(EMR Division)**

Guidelines on preventive measures to contain spread of COVID-19 in workplace settings

1. Background

Offices and other workplaces are relatively close setting, with shared spaces like (corridors, elevators & stairs, parking places, cafeteria, meeting rooms and conference halls etc.) and thus COVID-19 infection can spread relatively fast among officials, staffs and visitors.

Thus there is a need to prevent importation of infection in workplace settings and to respond in a timely and effective manner in case suspect case of COVID-19 is detected in these settings, so as to limit the spread of infection.

2. Scope

This document outlines the preventive and response measures to be observed to contain the spread of COVID-19 in workplace settings. The document is divided into the following sub-sections

- (i) basic preventive measures to be followed at all times
- (ii) measures specific to offices
- (iii) measures to be taken on occurrence of case(s)
- (iv) disinfection procedures to be implemented in case of occurrence of suspect/confirmed case.

3. Basic preventive measures

The basic preventive measures include simple public health measures that are to be followed to reduce the risk of infection with COVID-19. These measures need to be observed by all (employees and visitors) at all times. These include:

- i. Physical distancing of at least one meter to be followed at all times.
- ii. Use of face covers/masks to be mandatory.
- iii. Practice frequent hand washing (for at least 40-60 seconds) even when hands are not visibly dirty and use of alcohol based hand sanitizers (for at least 20 seconds).
- iv. Respiratory etiquettes to be strictly followed. This involves strict practice of covering one's mouth and nose while coughing/sneezing with a tissue/handkerchief/flexed elbow and disposing off used tissues properly.
- v. Self-monitoring of health by all and reporting any illness at the earliest

4. Preventive measures for offices:

Guidelines with respect to preventive measures specific to offices have been issued by DoPT. These guidelines are available at:

<https://www.mohfw.gov.in/pdf/PreventivemeasuresDOPT.pdf>.

Any staff reportedly suffering from flu-like illness should not attend office and seek medical advice from local health authorities [e.g. CGHS wellness center, medical attendance under CS (MA) etc.]. Such persons, if diagnosed as a suspect/confirmed case of COVID-19 should immediately inform the office authorities.

Any staff requesting home quarantine based on the containment zone activities in their residential areas should be permitted to work from home.

DoPT guidelines with respect to organizing meetings, coordinating visitors shall be scrupulously followed.

5. Measures to be taken on occurrence of case(s):

Despite taking the above measures, the occurrence of cases among the employees working in the office cannot be ruled out. The following measures will be taken in such circumstances:

5.1. When one or few person(s) who share a room/close office space is/are found to be suffering from symptoms suggestive of COVID-19:

5.1.1. Place the ill person in a room or area where they are isolated from others at the workplace. Provide a mask/face cover till such time he/she is examined by a doctor.

5.1.2. Report to concerned central/state health authorities. Helpline 1075 will be immediately informed.

5.1.3. A risk assessment will be undertaken by the designated public health authority (district RRT/treating physician) and accordingly further advice shall be made regarding management of case, his/her contacts and need for disinfection.

5.1.4. The suspect case if reporting very mild / mild symptoms on assessment by the health authorities would be placed under home isolation, subject to fulfilment of criteria laid down in MoHFW guidelines (available at:

<https://www.mohfw.gov.in/pdf/RevisedguidelinesforHomeIsolationofverymildpresymptomaticCOVID19cases10May2020.pdf>)

5.1.5. Suspect case, if assessed by health authorities as moderate to severe, he/she will follow guidelines at:

<https://www.mohfw.gov.in/pdf/FinalGuidanceonMangaementofCovidcasesversion2.pdf>.

5.1.6. The rapid response team of the concerned district shall be requisitioned and will undertake the listing of contacts.

5.1.7. The necessary actions for contact tracing and disinfection of work place will start once the report of the patient is received as positive. The report will be expedited for this purpose.

5.2. If there are large numbers of contacts from a pre-symptomatic/asymptomatic case, there could be a possibility of a cluster emerging in workplace setting. Due to the close environment in workplace settings this could even be a large cluster (>15 cases). The essential principles of risk assessment, isolation, and quarantine of contacts, case referral and management will remain the same. However, the scale of arrangements will be higher.

5.3. Management of contacts:

The contacts will be categorised into high and low risk contacts by the District RRT as detailed in the **Annexure I**.

The high risk exposure contacts shall be quarantined for 14 days. They will follow the guidelines on home quarantine (available on:

<https://www.mohfw.gov.in/pdf/Guidelinesforhomequarantine.pdf>).

These persons shall undergo testing as per ICMR protocol (available at: <https://www.mohfw.gov.in/pdf/Revisedtestingguidelines.pdf>).

The low risk exposure contacts shall continue to work and closely monitor their health for next 14 days.

6. Closure of workplace

If there are one or two cases reported, the disinfection procedure will be limited to places/areas visited by the patient in past 48 hrs. **There is no need to close the entire office building/halt work in other areas of the office** and work can be resumed after disinfection as per laid down protocol (see para 7).

However, if there is a larger outbreak, the entire building will have to be closed for 48 hours after thorough disinfection. All the staff will work from home, till the building is adequately disinfected and is declared fit for re-occupation.

7. Disinfection Procedures in Offices

Detailed guidelines on the disinfection procedures in offices have already been issued by the MOHFW and are available on:

<https://www.mohfw.gov.in/pdf/Guidelinesondisinfectionofcommonpublicplacesincludingoffices.pdf>.

Risk profiling of contacts

Contacts are persons who have been exposed to a confirmed case anytime between 2 days prior to onset of symptoms (in the positive case) and the date of isolation (or maximum 14 days after the symptom onset in the case).

High-risk contact

- Touched body fluids of the patient (respiratory tract secretions, blood, vomit, saliva, urine, faeces; e.g. being coughed on, touching used paper tissues with a bare hand)
- Had direct physical contact with the body of the patient including physical examination without PPE
- Touched or cleaned the linens, clothes, or dishes of the patient.
- Lives in the same household as the patient.
- Anyone in close proximity (within 1 meter) of the confirmed case without precautions.
- Passengers in close proximity (within 1 meter) in a conveyance with a symptomatic person who later tested positive for COVID-19 for more than 6 hours.

Low-risk contact

- Shared the same space (worked in same room/similar) but not having a high-risk exposure to confirmed case of COVID-19.
- Travelled in same environment (bus/train/flight/any mode of transit) but not having a high-risk exposure.

Figure 1: Management of the case(s) and contacts

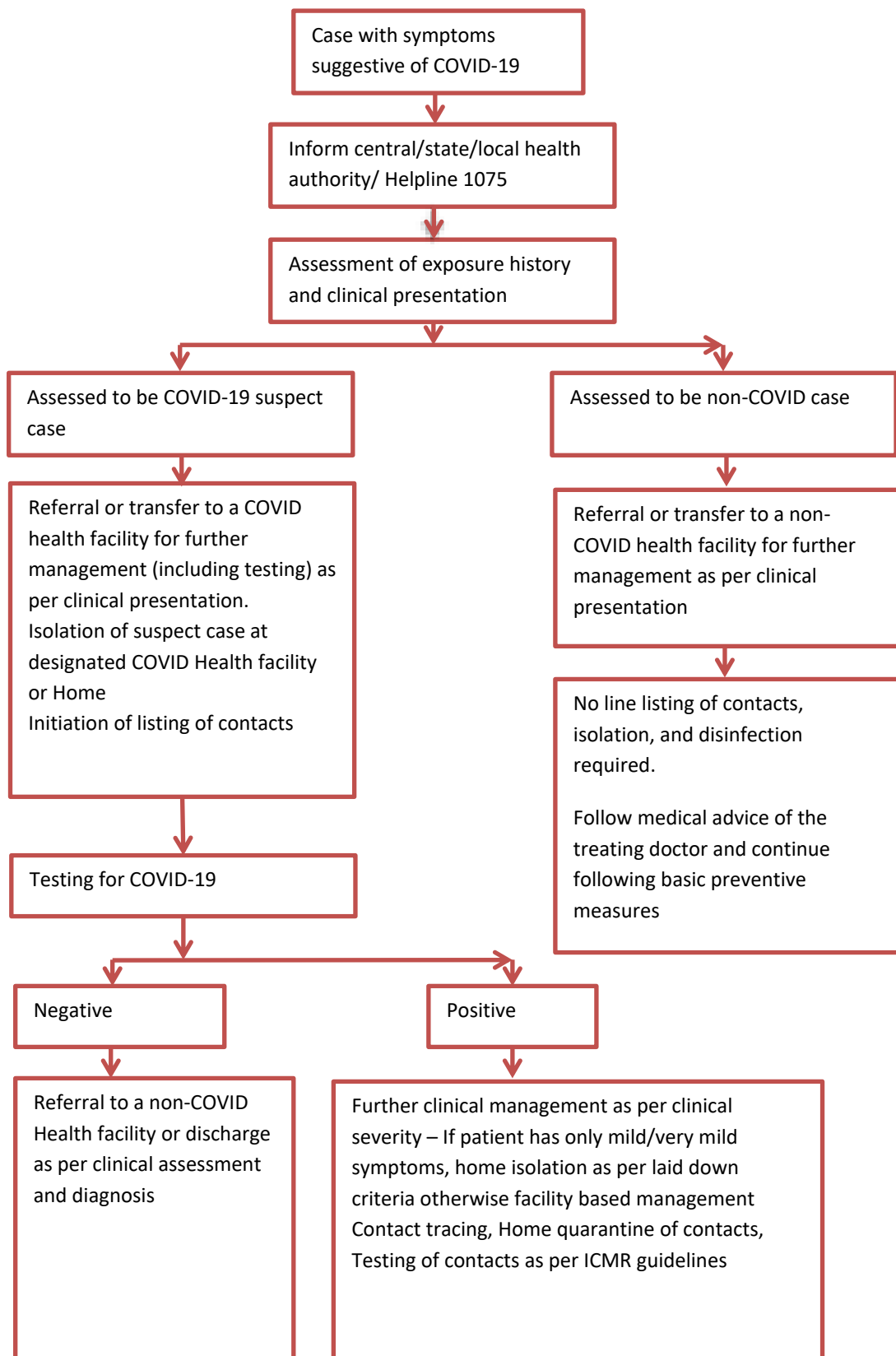
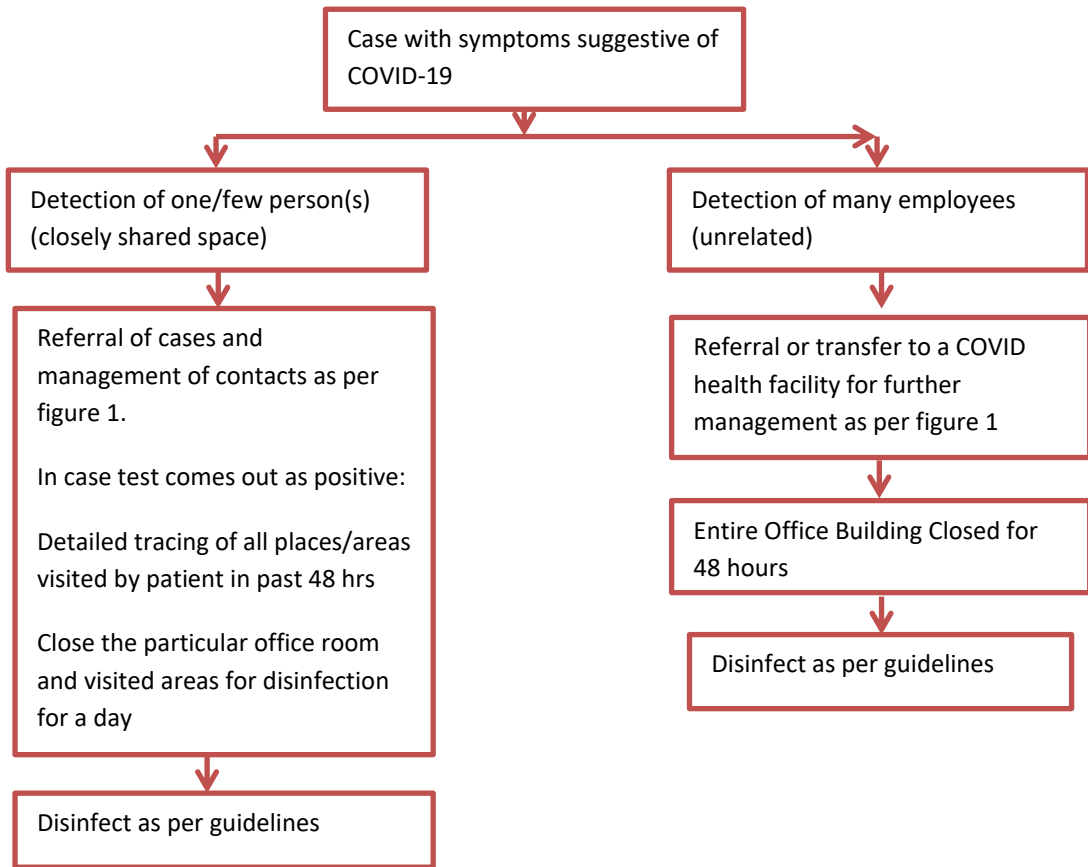


Fig-2: Disinfection of workplace





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स्वास्थ्य अनुसंधान विभाग, स्वास्थ्य और परिवार
कल्याण मंत्रालय, भारत सरकार

Indian Council of Medical Research
Department of Health Research, Ministry of Health
and Family Welfare, Government of India

Date: 22/05/2020

Revised advisory on the use of Hydroxychloroquine (HCQ) as prophylaxis for SARS-CoV-2 infection (in supersession of previous advisory dated 23rd March, 2020)

1. Background

The Joint Monitoring Group under the Chairmanship of DGHS and including representatives from AIIMS, ICMR, NCDC, NDMA, WHO and experts drawn from Central Government hospitals reviewed the prophylactic use of Hydroxychloroquine (HCQ) in the context of expanding it to healthcare and other front line workers deployed in non-COVID and COVID areas, respectively.

The National Task force (NTF) for COVID-19 constituted by Indian Council of Medical Research also reviewed the use of HCQ for prophylaxis of SARS-CoV-2 infection for high risk population based on the emerging evidence on its safety and efficacy. The NTF reviewed the data on in-vitro testing of HCQ for antiviral efficacy against SARS-CoV-2, safety profile of HCQ reported to the pharmacovigilance program of India, and data on the use of HCQ for the prophylaxis of SARS-CoV-2 infection among health care workers (HCWs) and reported its findings as detailed below:

1.1 In-vitro study

At NIV, Pune, the report of the in-vitro testing of HCQ for antiviral efficacy showed reduction of infectivity /log reduction in viral RNA copy of SARS-CoV2.

1.2 Safety Profile of HCQ

The data on assessment of HCQ prophylaxis among 1323 HCWs indicated mild adverse effects such as nausea (8.9%), abdominal pain (7.3%), vomiting (1.5%), hypoglycemia (1.7%) and cardio-vascular effects (1.9%). However, as per the data from the Pharmacovigilance program of India, there have been 214 reported instances of adverse drug reactions associated with prophylactic HCQ use. Of these, 7 were serious individual case safety reports with prolongation of QT interval on ECG in 3 cases.

1.3 Studies on prophylaxis of SARS-CoV-2 infection

- A retrospective case-control analysis at ICMR has found that there is a significant dose-response relationship between the number of prophylactic doses taken and frequency of



occurrence of SARS-CoV-2 infection in symptomatic healthcare workers who were tested for SARS-CoV-2 infection.

- Another investigation from 3 central government hospitals in New Delhi indicates that amongst healthcare workers involved in COVID-19 care, those on HCQ prophylaxis were less likely to develop SARS-CoV-2 infection, compared to those who were not on it. The benefit was less pronounced in healthcare workers caring for a general patient population.
- An observational prospective study of 334 healthcare workers at AIIMS, out of which 248 took HCQ prophylaxis (median 6 weeks of follow up) in New Delhi also showed that those taking HCQ prophylaxis had lower incidence of SARS-CoV-2 infection than those not taking it.

2. Eligibility criteria for HCQ prophylaxis

The Advisory earlier issued (dated 23rd March, 2020; available at: <https://www.mohfw.gov.in/pdf/AdvisoryontheuseofHydroxychloroquinaprophylaxisforSARSCoV2infection.pdf>), provided placing the high risk population (asymptomatic Healthcare Workers involved in the care of suspected or confirmed cases of COVID-19 and asymptomatic household contacts of laboratory confirmed cases of COVID-19) under chemoprophylaxis with HCQ.

In light of all of the above, the Joint Monitoring Group and NTF have now recommended the prophylactic use of HCQ in the following categories:

1. All asymptomatic healthcare workers involved in containment and treatment of COVID19 and asymptomatic healthcare workers working in non-COVID hospitals/non-COVID areas of COVID hospitals/blocks
2. Asymptomatic frontline workers, such as surveillance workers deployed in containment zones and paramilitary/police personnel involved in COVID-19 related activities.
3. Asymptomatic household contacts of laboratory confirmed cases.

3. Exclusion/contraindications

- The drug is contraindicated in persons with known case of:
 1. Retinopathy,
 2. Hypersensitivity to HCQ or 4-aminoquinoline compounds
 3. G6PD deficiency
 4. Pre-existing cardiomyopathy and cardiac rhythm disorders
- The drug is not recommended for prophylaxis in children under 15 years of age and in pregnancy and lactation.

Rarely the drug causes cardiovascular side effects such as cardiomyopathy and rhythm (heart rate) disorders. In that situation the drug needs to be discontinued. The drug can rarely cause visual disturbance including blurring of vision which is usually self- limiting and improves on



discontinuation of the drug. For the above cited reasons the drug has to be given under strict medical supervision with an informed consent.

4. Dosage

S. No.	Category of personnel	Dosage
1	<ul style="list-style-type: none">Asymptomatic household contacts of laboratory confirmed cases	400 mg twice a day on Day 1, followed by 400 mg once weekly for next 3 weeks; to be taken with meals
2	<ul style="list-style-type: none">All asymptomatic healthcare workers involved in containment and treatment of COVID-19 and asymptomatic healthcare workers working in non-COVID hospitals/non-COVID areas of COVID hospitals/blocksAsymptomatic frontline workers, such as surveillance workers deployed in containment zones and paramilitary/police personnel involved in COVID-19 related activities	400 mg twice a day on Day 1, followed by 400 mg once weekly for next 7 weeks; to be taken with meals

5. Use of HCQ prophylaxis beyond 8 weeks [in categories 4 (2) above]

In clinical practice HCQ is commonly prescribed in a daily dose of 200mg to 400mg for treatment of diseases such as Rheumatoid Arthritis and Systemic Lupus Erythematosus for prolonged treatment periods with good tolerance. With available evidence for its safety and beneficial effect as a prophylactic drug against SARS-COV-2 during the earlier recommended 8 weeks period, the experts further recommended for its use beyond 8 weeks on weekly dosage with strict monitoring of clinical and ECG parameters which would also ensure that the therapy is given under supervision.

Based on the available evidence, it has been opined that HCQ is relatively safe, when certain contraindications are avoided, and has some beneficial effect as a prophylactic option.

6. Monitoring

- An ECG (with estimation of QT interval) may be done before prescribing HCQ prophylaxis.
- An ECG should be done in case any new cardiovascular symptoms occurs (e.g., palpitations, chest pain syncope) during the course of prophylaxis.
- An ECG (with estimation of QT interval) may be done in those who are already on HCQ prophylaxis before continuing it beyond 8 weeks.
- One ECG should be done anytime during the course of prophylaxis.



7. Key considerations

While following above recommendations, it should be noted that:

- 1) The drug has to be given under strict medical supervision with an informed consent.
- 2) The drug has to be given only on the prescription of a registered medical practitioner.
- 3) Advised to consult with a physician for any adverse event or potential drug interaction before initiation of medication. The contraindications mentioned in the recommendations should strictly be followed.
- 4) Health care workers and other frontline workers on HCQ should be advised to use PPE. Front line workers should use PPEs in accordance with the guidelines issued by this Ministry (available at: <https://www.mohfw.gov.in/pdf/GuidelinesonrationaluseofPersonalProtectiveEquipment.pdf> and <https://www.mohfw.gov.in/pdf/UpdatedAdditionalguidelinesonrationaluseofPersonalProtectiveEquipmentsettingapproachforHealthfunctionariesworkinginnonCOVID19areas.pdf>) or by their respective organization.
- 5) They should be advised to consult their physician (within their hospital/surveillance team/security organization) for any adverse event or potential drug interaction before initiation of medication. The prophylactic use of HCQ to be coupled with the pharmacovigilance for adverse drug reactions through self-reporting using the Pharmacovigilance Program of India (PvPI) helpline/app. (available at: https://play.google.com/store/apps/details?id=com.vinfotech.suspectedadversedrugreaction&hl=en_IN)
- 6) If anyone becomes symptomatic while on prophylaxis, he/she should immediately contact the health facility, get tested as per national guidelines and follow the standard treatment protocol. Apart from the symptoms of COVID-19 (fever, cough, breathing difficulty), if the person on chemoprophylaxis develops any other symptoms, he should immediately seek medical treatment from the prescribing medical practitioner.
- 7) All asymptomatic contacts of laboratory confirmed cases should remain in home quarantine as per the National guidelines, even if they are on prophylactic therapy.
- 8) Simultaneously, proof of concept and pharmacokinetics studies should be continued/ taken up expeditiously. Findings from these studies and other new evidence will guide any change further in the recommendation.
- 9) They should follow all prescribed public health measures such as frequent washing of hands, respiratory etiquettes, keeping a distance of minimum 1 meter and use of Personal protective gear (wherever applicable).

Note: It is reiterated that the intake of above medicine should not instil a sense of false security.

AJAY BHALLA, IAS



गृह सचिव
Home Secretary
भारत सरकार
Government of India
North Block,
New Delhi

D.O. 40-10/2020-DM-I(A)

Dated: 11.05.2020

Dear *Chief Secretary,*

Kindly refer to the meeting, chaired by the Cabinet Secretary through Video Conference (VC) on 10th May, 2020, wherein the issue of restrictions being imposed by some States/ UTs on the movement of medical professionals and para-medical personnel was flagged.

2. As you are aware, the services of medical and para-medical staff are urgently required in meeting the challenge of COVID-19 pandemic. Furthermore, the existing staff, apart from this duty, also have to render normal responsibilities, such as conducting immunization programmes, handling the onset of vector and other seasonal diseases, and meeting other non-COVID emergencies etc.
3. In this scenario, as pointed out by the Cabinet Secretary, any restrictions on the movement of medical professionals and para-medical staff can lead to severe constraints in rendering COVID and non-COVID medical services. As such, ensuring unhindered movement of all such medical professionals is essential for meeting public health requirements and saving precious human lives.
4. At many places, private clinics and nursing homes are also reported to have not been allowed to open. The functioning of these medical facilities, which supplement the regular medical infrastructure, and relieve the burden on hospitals, is also crucial. I would urge all States and UTs to ensure that such clinics and nursing homes continue to function without any hindrances.
5. I would like to emphasize that all State/ UT Governments should ensure that their field officials allow smooth movement of all medical professionals, nurses, para medical, sanitation personnel and ambulances, and ensure the opening of all private clinics, nursing homes and labs with all their medical professional and staff. Such movement shall also be facilitated inter-State, wherever required.

With regards,

Yours sincerely


(Ajay Bhalla)

To

Chief Secretaries of all States

AJAY BHALLA, IAS



गृह सचिव
Home Secretary
भारत सरकार
Government of India
North Block,
New Delhi

D.O. 40-10/2020-DM-I(A)

Dated: 11.05.2020

Dear *Administrators,*

Kindly refer to the meeting, chaired by the Cabinet Secretary through Video Conference (VC) on 10th May, 2020, wherein the issue of restrictions being imposed by some States/ UTs on the movement of medical professionals and para-medical personnel was flagged.

2. As you are aware, the services of medical and para-medical staff are urgently required in meeting the challenge of COVID-19 pandemic. Furthermore, the existing staff, apart from this duty, also have to render normal responsibilities, such as conducting immunization programmes, handling the onset of vector and other seasonal diseases, and meeting other non-COVID emergencies etc.
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With regards,

Yours sincerely

(Ajay Bhalla) 11/05/2020

To

Administrators of all UTs

No. 40-3/2020-DM-I(A)
Government of India
Ministry of Home Affairs

North Block, New Delhi-110001
Dated 17th May, 2020

ORDER

Whereas, the National Disaster Management Authority (NDMA) in exercise of their powers under section 6(2)(i) of the Disaster Management Act, 2005, vide their Orders dated 24.03.2020, 14.04.2020 and 01.05.2020 had directed the National Executive Committee (NEC) to take lockdown measures so as to contain the spread of COVID-19 in the country;

Whereas, Chairperson NEC, in exercise of the powers conferred under Section 10(2)(l) of the Disaster Management Act, 2005, has issued Orders of even number on lockdown measures dated 24.03.2020, 29.03.2020, 14.04.2020, 15.04.2020 and 01.05.2020;

Whereas, save as otherwise provided in the guidelines annexed to this Order, all Orders issued by NEC under Section 10(2)(l) of the Disaster Management Act, 2005, shall cease to have effect from 18.05.2020;

Whereas, in exercise of the powers under section 6(2)(i) of the Disaster Management Act, 2005, NDMA has issued an Order number 1-29/2020 - PP dated 17.05.2020 directing the Chairperson, NEC that lockdown measures to contain the spread of COVID-19 be continued to be implemented in all parts of the Country, for a further period upto 31.05.2020;

Now therefore, under directions of the aforesaid Order of NDMA dated 17.05.2020, and in exercise of the powers, conferred under Section 10(2)(l) of the Disaster Management Act, 2005, the undersigned, in his capacity as Chairperson, NEC, hereby issues directions for strict implementation, to all the Ministries/ Departments of Government of India, State/Union Territory Governments and State/ Union Territory Authorities that lockdown measures to contain the spread of COVID-19 will continue for a period of upto 31.05.2020, as per the guidelines annexed to this Order, which will come into effect from 18.05.2020.


17/05/2020
Union Home Secretary

To:

1. The Secretaries of Ministries/ Departments of Government of India
2. The Chief Secretaries/Administrators of States/Union Territories
(As per list attached)

Copy to:

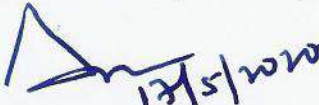
- i. All members of the National Executive Committee.
- ii. Member Secretary, National Disaster Management Authority.

Guidelines on the measures to be taken by Ministries/ Departments of Government of India, State/ UT Governments and State/ UT Authorities for containment of COVID-19 in the country upto 31st May, 2020.

[As per Ministry of Home Affairs (MHA) Order No. 40-3/2020-DM-I (A) dated 17th May, 2020]

1. Lockdown shall continue to remain in force upto 31st May, 2020.
2. **The following activities shall continue to remain prohibited throughout the country:**
 - i. All domestic and international air travel of passengers, except for domestic medical services, domestic air ambulance and for security purposes or purposes as permitted by MHA.
 - ii. Metro rail services.
 - iii. Schools, colleges, educational/ training/ coaching institutions etc. will remain closed. Online/ distance learning shall continue to be permitted and shall be encouraged.
 - iv. Hotels, restaurants and other hospitality services, except those meant for housing health/ police/ Government officials/ healthcare workers/ stranded persons including tourists and for quarantine facilities; and running of canteens at bus depots, railway stations and airports. Restaurants shall be permitted to operate kitchens for home delivery of food items.
 - v. All cinema halls, shopping malls, gymnasiums, swimming pools, entertainment parks, theatres, bars and auditoriums, assembly halls and similar places. Sports complexes and stadia will be permitted to open; however, spectators will not be allowed.
 - vi. All social/ political/ sports/ entertainment/ academic/ cultural/ religious functions/ other gatherings and large congregations.
 - vii. All religious places/ places of worship shall be closed for public. Religious congregations are strictly prohibited.
3. **The following activities shall be permitted with restrictions, except in the Containment Zones:**
 - i. Inter-State movement of passenger vehicles and buses, with mutual consent of the State(s)/ UT(s) involved.
 - ii. Intra-State movement of passenger vehicles and buses, as decided by the States and UTs.
 - iii. Standard Operating Procedures (SOPs) for movement of persons, as mentioned in **Annexure I**, shall continue to operate.
4. **National Directives for COVID-19 Management**

National Directives for COVID 19 Management, as specified in **Annexure II**, shall be followed throughout the country.
5. **Containment, Buffer, Red, Green and Orange Zones**
 - i. The delineation of Red, Green and Orange Zones will be decided by the respective State and UT Governments, after taking into consideration the parameters shared by Ministry of Health & Family Welfare (MoHFW), Government of India (GoI).


17/5/2020

- ii. Within the Red and Orange Zones, Containment Zones and Buffer Zones will be demarcated by the District authorities, after taking into consideration the guidelines of MoHFW.
- iii. In the Containment Zones, only essential activities shall be allowed. There shall be strict perimeter control to ensure that there is no movement of people in or out of these zones, except for medical emergencies and for maintaining supply of essential goods and services. Guidelines of MoHFW shall be taken into consideration for the above purpose.
- iv. In the Containment Zones, there shall be intensive contact tracing, house-to-house surveillance, and other clinical interventions, as required.

6. **Night curfew**

The movement of individuals shall remain strictly prohibited between 7.00 pm to 7.00 am, except for essential activities. Local authorities shall issue orders, in the entire area of their jurisdiction, under appropriate provisions of law, such as prohibitory orders [Curfew] under Section 144 of CrPC, and ensure strict compliance.

7. **Protection of vulnerable persons**

Persons above 65 years of age, persons with co-morbidities, pregnant women, and children below the age of 10 years, shall stay at home, except for essential and health purposes.

8. **All other activities will be permitted, except those which are specifically prohibited.**

However, in Containment Zones, only essential activities shall be allowed, as mentioned in para 5(iii) above.

Further, States/ UTs, based on their assessment of the situation, may prohibit certain other activities in the various zones, or impose such restrictions as deemed necessary.

9. **Use of Aarogya Setu**

- i. *Aarogya Setu* enables early identification of potential risk of infection, and thus acts as a shield for individuals and the community.
- ii. With a view to ensuring safety in offices and work places, employers on best effort basis should ensure that *Aarogya Setu* is installed by all employees having compatible mobile phones.
- iii. District authorities may advise individuals to install the *Aarogya Setu* application on compatible mobile phones and regularly update their health status on the app. This will facilitate timely provision of medical attention to those individuals who are at risk.

10. **Special directions to ensure movement of persons and goods in certain cases**

- i. All States/ UTs shall allow inter-State and intra-State movement of medical professionals, nurses and para medical staff, sanitation personnel and ambulances, without any restriction.
- ii. All States/ UTs shall allow inter-State movement of all types of goods/ cargo, including empty trucks.

A handwritten signature in blue ink, appearing to be 'M. S. ...', is written over the bottom right portion of the page.

iii. No State/ UT shall stop the movement of any type of goods/ cargo for cross land-border trade under Treaties with neighbouring countries.

11. Strict enforcement of the guidelines

- i. State/ UT Governments shall not dilute these guidelines issued under the Disaster Management Act, 2005, in any manner.
- ii. All the District Magistrates shall strictly enforce the above measures.
- iii. In order to implement these measures, the District Magistrates will deploy Executive Magistrates as Incident Commanders in the respective local jurisdictions. The Incident Commander will be responsible for the overall implementation of these measures in their respective jurisdictions.

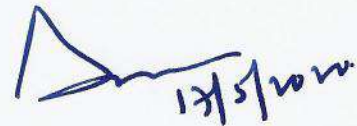
12. Penal provisions

Any person violating these measures will be liable to be proceeded against as per the provisions of Section 51 to 60 of the Disaster Management Act, 2005, besides legal action under Sec. 188 of the IPC, and other legal provisions as applicable. Extracts of these penal provisions are at **Annexure III**.


17/05/2020
Union Home Secretary

Standard Operating Procedures (SOPs) issued by MHA

- i. SOP on transit arrangement for foreign national(s) in India issued vide Order dated April 02, 2020.
- ii. SOP on movement of stranded labour within States/ UTs, issued vide Order dated April 19, 2020.
- iii. SOP on sign-on and sign-off of Indian seafarers, issued vide Order dated April 21, 2020.
- iv. SOP on movement of stranded migrant workers, pilgrims, tourists, students and other persons, issued vide Order dated April 29, 2020 and Order dated May 01, 2020.
- v. SOP on movement of Indian Nationals stranded outside the country and of specified persons to travel abroad, issued vide Order dated May 5, 2020.
- vi. SOP on movement of persons by train, issued vide Order dated May 11, 2020.



13/5/2020

National Directives for COVID 19 Management

- i.** Wearing of face cover is compulsory in all public and work places.
- ii.** Spitting in public & work places shall be punishable with fine, as may be prescribed in accordance with its laws, rules or regulations by the State/ UT local authority.
- iii.** Social distancing shall be followed by all persons in public places and in transport.
- iv.** Marriage related gathering shall ensure social distancing, and the maximum number of guests allowed shall not be more than 50.
- v.** Funeral/ last rites related gathering shall ensure social distancing, and the maximum numbers allowed shall not be more than 20.
- vi.** Consumption of liquor, *paan*, *gutka*, tobacco etc. in public places is not allowed.
- vii.** Shops will ensure minimum six feet distance (*2 gaz ki doori*) among customers and shall not allow more than 5 persons at the shop.

Additional directives for Work Places

- viii.** As far as possible, the practice of work from home should be followed.
- ix.** Staggering of work/ business hours shall be followed in offices, work places, shops, markets and industrial & commercial establishments.
- x.** Provision for thermal scanning, hand wash and sanitizer will be made at all entry and exit points and common areas.
- xi.** Frequent sanitization of entire workplace, common facilities and all points which come into human contact e.g. door handles etc., shall be ensured, including between shifts.
- xii.** All persons in charge of work places shall ensure social distancing through adequate distance between workers, adequate gaps between shifts, staggering the lunch breaks of staff, etc.



Offences and Penalties for Violation of Lockdown Measures

A. Section 51 to 60 of the Disaster Management Act, 2005

51. Punishment for obstruction, etc.—Whoever, without reasonable cause —

- (a) obstructs any officer or employee of the Central Government or the State Government, or a person authorised by the National Authority or State Authority or District Authority in the discharge of his functions under this Act; or
- (b) refuses to comply with any direction given by or on behalf of the Central Government or the State Government or the National Executive Committee or the State Executive Committee or the District Authority under this Act,

shall on conviction be punishable with imprisonment for a term which may extend to one year or with fine, or with both, and if such obstruction or refusal to comply with directions results in loss of lives or imminent danger thereof, shall on conviction be punishable with imprisonment for a term which may extend to two years.

52. Punishment for false claim.—Whoever knowingly makes a claim which he knows or has reason to believe to be false for obtaining any relief, assistance, repair, reconstruction or other benefits consequent to disaster from any officer of the Central Government, the State Government, the National Authority, the State Authority or the District Authority, shall, on conviction be punishable with imprisonment for a term which may extend to two years, and also with fine.

53. Punishment for misappropriation of money or materials, etc.—Whoever, being entrusted with any money or materials, or otherwise being, in custody of, or dominion over, any money or goods, meant for providing relief in any threatening disaster situation or disaster, misappropriates or appropriates for his own use or disposes of such money or materials or any part thereof or wilfully compels any other person so to do, shall on conviction be punishable with imprisonment for a term which may extend to two years, and also with fine.

54. Punishment for false warning.—Whoever makes or circulates a false alarm or warning as to disaster or its severity or magnitude, leading to panic, shall on conviction, be punishable with imprisonment which may extend to one year or with fine.

55. Offences by Departments of the Government.—(1) Where an offence under this Act has been committed by any Department of the Government, the head of the Department shall be deemed to be guilty of the offence and shall be liable to be proceeded against and punished accordingly unless he proves that the offence was committed without his knowledge or that he exercised all due diligence to prevent the commission of such offence.

(2) Notwithstanding anything contained in sub-section (1), where an offence under this Act has been committed by a Department of the Government and it is proved that the offence has been committed with the consent or connivance of, or is attributable to any neglect on the part of, any officer, other than the head of the Department, such officer shall be deemed to be guilty of that offence and shall be liable to be proceeded against and punished accordingly.

56. Failure of officer in duty or his connivance at the contravention of the provisions of this Act.—Any officer, on whom any duty has been imposed by or under this Act and who ceases or refuses to perform or withdraws himself from the duties of his office shall, unless he has obtained the express written permission of his official superior or has other lawful excuse for so doing, be punishable with imprisonment for a term which may extend to one year or with fine.

57. Penalty for contravention of any order regarding requisitioning.—If any person contravenes any order made under section 65, he shall be punishable with imprisonment for a term which may extend to one year or with fine or with both.

58. Offence by companies.—(1) Where an offence under this Act has been committed by a company or body corporate, every person who at the time the offence was committed, was in charge of, and was responsible to, the company, for the conduct of the business of the company, as well as the company, shall be deemed to be guilty of the contravention and shall be liable to be proceeded against and punished accordingly:

Provided that nothing in this sub-section shall render any such person liable to any punishment provided in this Act, if he proves that the offence was committed without his knowledge or that he exercised due diligence to prevent the commission of such offence.

(2) Notwithstanding anything contained in sub-section (1), where an offence under this Act has been committed by a company, and it is proved that the offence was committed with the consent or connivance of or is attributable to any neglect on the part of any director, manager, secretary or other officer of the company, such director, manager, secretary or other officer shall also, be deemed to be guilty of that offence and shall be liable to be proceeded against and punished accordingly.

Explanation.—For the purpose of this section—

- (a) “company” means anybody corporate and includes a firm or other association of individuals; and
- (b) “director”, in relation to a firm, means a partner in the firm.

59. Previous sanction for prosecution.—No prosecution for offences punishable under sections 55 and 56 shall be instituted except with the previous sanction of the Central Government or the State Government, as the case may be, or of any officer authorised in this behalf, by general or special order, by such Government.

60. Cognizance of offences.—No court shall take cognizance of an offence under this Act except on a complaint made by—

- (a) the National Authority, the State Authority, the Central Government, the State Government, the District Authority or any other authority or officer authorised in this behalf by that Authority or Government, as the case may be; or
- (b) any person who has given notice of not less than thirty days in the manner prescribed, of the alleged offence and his intention to make a complaint to the National Authority, the State Authority, the Central Government, the State Government, the District Authority or any other authority or officer authorised as aforesaid.

B. Section 188 in the Indian Penal Code, 1860

188. Disobedience to order duly promulgated by public servant.—Whoever, knowing that, by an order promulgated by a public servant lawfully empowered to promulgate such order, he is directed to abstain from a certain act, or to take certain order with certain property in his possession or under his management, disobeys such direction, shall, if such disobedience causes or tends to cause obstruction, annoyance or injury, or risk of obstruction, annoyance or injury, to any person lawfully employed, be punished with simple imprisonment for a term which may extend to one month or with fine which may extend to two hundred rupees, or with both; and if such disobedience causes or trends to cause danger to human life, health or safety, or causes or tends to cause a riot or affray, shall be punished with imprisonment of either description for a term which may extend to six months, or with fine which may extend to one thousand rupees, or with both.

Explanation.—It is not necessary that the offender should intend to produce harm, or contemplate his disobedience as likely to produce harm. It is sufficient that he knows of the order which he disobeys, and that his disobedience produces, or is likely to produce, harm.

Illustration

An order is promulgated by a public servant lawfully empowered to promulgate such order, directing that a religious procession shall not pass down a certain street. A knowingly disobeys the order, and thereby causes danger of riot. A has committed the offence defined in this section.

GOVERNMENT OF MAHARASHTRA
Department of Revenue and Forest, Disaster Management,
Relief and Rehabilitation, Mantralaya, Mumbai- 400 032
No: DMU/2020/CR. 92/DisM-1, Dated: 7th May, 2020

ORDER

Addendum to the Consolidated Revised Guidelines on the measures to be taken for containment of COVID-19 in the State


Reference:

- 1) Revenue and Forest, Disaster Management, Relief and Rehabilitation Department Order No. DMU-2020/C.R.92/DMU-1, dated 25th March 2020, 15th April 2020, dated 17th April, 2020, 21st April 2020, 23rd April 2020, 24th April 2020, 28th April 2020, 30th April, 2020 and 1st May, 2020
- 2) Ministry of Home Affairs (MHA) Order No. 40-3/2020-DM-I (A) Dated 15th April, 2020, 19th April, 2020, 21st April, 2020, 24th April, 2020 and 29th April 2020

In continuation to the Order No. DMU-2020/C.R.92/DMU-1, 30th April 2020 and 1st May, 2020 of the State Government and in exercise of the powers, conferred under the Disaster Management Act, 2005 the undersigned, in his capacity as Chairperson, State Executive Committee, hereby issues orders to *amend and include* the following for the strict implementation by the concerned authorities in the State of Maharashtra:

1. A provision of requirement of *a registered medical practitioner* in para 2 of the order dated 1st May, 2020 is *deleted*.
2. The migrants/stranded persons desirous of travelling to home state should be screened at the time of starting of journey, by use of digital thermometer and symptomatic examination. This be done free of cost through Medical Officers of Government/Municipal Corporations or by hiring the services of registered medical practitioners by the Municipal Corporations.
3. A single list of all passengers indicating that they have been screened and found to be not displaying any *influenza like illness (ILI)* be issued by the Medical person in-charge. There will be no need for individual certificates and a certification of passengers manifest shall suffice.

BY ORDER AND IN THE NAME OF GOVERNOR OF MAHARASHTRA



(AJAY MEHTA)

CHIEF SECRETARY

GOVERNMENT OF MAHARASHTRA

Copy to:

1. Principal Secretary to Hon'ble Governor of Maharashtra, Mumbai,

2. Hon'ble Chairman, Maharashtra Legislative Council,
3. Hon'ble Speaker, Maharashtra Legislative Assembly,
4. Principal Secretary to Hon'ble Chief Minister, Government of Maharashtra,
5. Secretary to Hon'ble Deputy Chief Minister, Government of Maharashtra,
6. Private Secretary to Leader of Opposition, Legislative Council / Assembly,
7. Private Secretaries of All Hon'ble Minister/Minister of State, Mantralaya,
8. Chief Secretaries of the concerned States.
9. All Additional Chief Secretaries/Principal Secretaries/Secretaries of Government of Maharashtra,
10. Director General of Police, Maharashtra State, Mumbai,
11. Principal Resident Commissioner / Resident Commissioner of concerned States.
12. Principal Secretary, Public Health Department, Mantralaya,
13. Secretary, Medical Education, Mantralaya,
14. All Divisional Commissioners in the State,
15. All Commissioners of Police in the State,
16. All Commissioners of Municipal Corporations in the State,
17. All District Collectors,
18. All Chief Executive Officers, Zilla Parishad,
19. All District Superintendents of Police in the State.

Government of Maharashtra

Public Health Department
10th Floor, G.T. Hospital Compound,
L.T.Marg, Mumbai 400 001

No. Corona 2020/CR.58/Aarogya-5

Dated 5th May 2020

ORDER

References:

1. The Epidemic Disease Act, 1897
2. The Disaster Management Act, 2005
3. The Maharashtra Essential Service Maintenance (Amendment) Act, 2011
4. The Mumbai Nursing Homes Registration (Amendment) Act, 2006

Whereas, in exercise of the power conferred under Disaster Management Act, 2005, the undersigned, in his capacity as Chairperson, State Executive Committee and Section 2, 3 & 4 of the Epidemic Disease Act 1897 has issued several previous orders;

2. And whereas instances have been brought to notice that the Private hospitals, Nursing homes, clinics, dialysis centres are either refusing or delaying treatment/admission of the patients on account of suspicion of Covid-19 causing delay in treatment and holding ambulances for long time & it is affecting care of Non Covid patients.

3. And whereas Secretary, Ministry of Health & Family welfare, Govt. of India has issued guidance note vide letter dated 14/4/2020. In this regard the attention of all concerned is invited to this guidance note for delivery of essential health services during COVID-19 issued by the Ministry of Health & Family Welfare, Govt. of India wherein it has been emphasized that while continuing to focus on COVID-19 related activities, providing other essential services was important not only to maintain people's trust in the health system to deliver essential health services, but also to minimize an increase in morbidity and mortality from other health conditions. Accordingly all states were directed to identify essential services such as: pregnant women, those recently delivered, infants and children under five, those on treatment for chronic diseases, communicable diseases like TB/Leprosy, vector borne diseases, requiring treatment for dialysis, cancer, blood transfusions, and other special needs, that would be prioritized in the efforts to maintain continuity of service delivery.

4. Hence in exercise of powers conferred Under Epidemic Disease Act 1897 & the Disaster Management Act 2005, it is directed that no patient who is reaching the non-COVID Hospital (whether Government

or Private) other than with confirmed corona infection (COVID-19) should be denied treatment or admission in the hospital. Further it is clearly directed that no hospital will deny any End Stage Renal Disease Patient with maintenance Haemodialysis or shut down its Dialysis unit beyond period of 24 hours for decontamination in case of treating any COVID-19 patient.

5. Hence in this context the following orders/guidelines/SOPs issued by the Government of India are brought to notice of all concerned:-

- (i) Revised Guidelines for Dialysis of COVID-19 patients dated 07/4/2020 issued by the Ministry of Health & Family Welfare, GOI (Annexure-I)
- (ii) Guidelines on Rational use of Personal Protective Equipment dated 01/5/2020 issued by Ministry of Health & Family Welfare, GOI (Annexure-II)
- (iii) Guidelines to be followed on detection of suspect or confirmed COVID-19 case in a non-COVID facility dated 20/4/2020 issued by the Ministry of Health & Family Welfare, GOI (Annexure-III)
- (iv) Advisory on the use of Hydroxy-Choloquin as prophylaxis for SARS-COV-2 infection dated 23/3/2020 (Annexure-IV)

6. The above guidelines/SOPs provide complete information on issue of taking precautions for personal protection by health care providers while facilitating the continuation of health care facilities.

7. Any patient entering into hospital premises for any treatment for Non Covid ailment should be immediately checked into casualty or screening clinic and after triage patient may be shifted or admitted. Depending upon the site condition the staging area may be created for screening and triage of the patient in isolation so that infections are not transmitted. No patient is to be turned away without examination and required intervention under any circumstances.

8. The Directors of the Health Services should prepare the Standard Operating Procedure for screening, transferring, admitting and discharge of the patients.

9. If a patient is admitted in a Non Covid Hospital & the treating doctor suspects Covid-19 infection then the hospital should collect Nasopharyngeal swab of the suspected Covid patients admitted on top priority and ensure that reports are collected within 12 hours and should ensure that patients are triaged as per the clinical conditions and based on results of swab shifted to CCC (Covid Care Corners), Dedicated Covid Health Centre (DCHC) or Dedicated Covid Hospitals (DCH) Hospitals.

10. In case of death of Covid +ve patient the hospital administration should ensure that the dead body is shifted from ward within 30

minutes of death and should dispose off the bodies within 12 hours after following due processes under existing regulations.

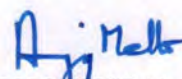
11. And whereas that Ministry of Home Affairs vide order no. 40-3/2020-DM-I(A) dated 15/4/2020 also have provisioned that all health services should remain functional during the period of lockdown.

12. Hence all the hospitals/Nursing homes/clinics especially those in private sectors, are hereby directed to remain functional and ensure that anyone needing any essential critical services including dialysis, blood transfusion, chemotherapy and institutional deliveries, is not denied any of such service.

13. Noncompliance will be viewed seriously and action as per provisions of law, Disaster Management Act 2005, Epidemic Disease Act 1897 & Mumbai Nursing Homes Registration (Amendment) Act 2006 including cancellation of the registration of the defaulter hospital/Nursing homes/clinic will be initiated without further notice.

This order should come into force from 10 am of 6th of May 2020 throughout the Maharashtra.

BY ORDER AND IN THE NAME OF THE GOVERNOR OF MAHARASHTRA.



(AJOY MEHTA)
CHIEF SECRETARY

GOVERNMENT OF MAHARASHTRA

1. Principal Secretary to Hon'ble Governor, Rajbhavan, Mumbai
2. Principal Secretary to Hon'ble Chief Minister, Mantralaya, Mumbai
3. Principal Secretary to Hon'ble Deputy Chief Minister, Mantralaya, Mumbai
4. PS to Hon'ble Minister (Health & Family Welfare), Mantralaya
5. PS to Hon'ble Minister of State (Health & Family Welfare), Mantralaya
6. DS to Chief Secretary Mantralaya, Mumbai
7. Additional Chief Secretary/Principal Secretary/Secretary (All), Mantralaya
8. Secretary, Maharashtra Legislature Secretariat, Vidhan Bhavan, Mumbai
9. Commissioner (Health Services) & Mission Director, NHM, Mumbai
10. Charity Commissioner, M.S. Mumbai
11. All Divisional Commissioners
12. All District Collectors
13. All Municipal Commissioners
14. All Chief Executive Officers, Zilla Parishad

15. Director, Health Services- I/II, Mumbai/Pune
16. Additional Director, Health Services (All)
17. Joint Director, Health Services (All)
18. Deputy Directors, Health Services (All)
19. Civil Surgeons (All)
20. District Health Officers (All)
21. District Malaria Officers (All)
22. Deputy Secretary to Chief Secretary, Mantralaya, Mumbai
23. All Joint / Deputy Secretary, Public Health Department
24. PA to Principal Secretary, Public Health Department
25. All Section Officers, Public Health Department
26. Select File: Aarogy-5



Government of India
Ministry of Health & Family Welfare

**Revised Guidelines for
Dialysis of COVID – 19
patients**

Guidelines for Dialysis with reference to COVID-19 Infection

COVID-19, a disease caused by a novel corona virus (SARS CoV-2), is currently a pandemic, which produces high morbidity in the elderly and in patients with associated comorbidities. Chronic kidney disease stage-5 (CKD-5) patients on dialysis [maintenance hemodialysis (MHD) or continuous ambulatory peritoneal dialysis (CAPD)] are also vulnerable group because of their existing comorbidities, repeated unavoidable exposure to hospital environment and immunosuppressed state due to CKD-5. These patients are therefore not only more prone to acquire infection but also develop severe diseases as compared to general population.

Patients on regular dialysis should adhere to prescribed schedule and not miss their dialysis sessions to avoid any emergency dialysis.

There will be three situations of patients who require dialysis; patients already on maintenance dialysis, patients requiring dialysis due to acute kidney injury (AKI) and patients critically ill requiring continuous renal replacement therapy (CRRT).

General Guidelines for Administration

1. State/UT should identify and earmark at-least one hemodialysis facility with adequate number of dialysis machines, trained staff, reverse osmosis (RO) water system and other support equipment as preparatory fixed-point dialysis unit in case of rise of Covid-19 epidemic.
2. Health departments may issue directives to the district administrations allowing easy movements of these patients (with one attendant) to dialysis facility. Patients who do not have private vehicles, government run transport system should be organized for facilitating transport of these patients. Patients should use their hospital papers as pass to commute to the dialysis unit.
3. District administration should ensure that service providers for the dialysis consumables, both for MHD and CAPD should be allowed to deliver the material to the hospital or home as the case may be.

General Guidance for Dialysis Unit

1. Adequate medical supplies such as dialysate, dialyzers and tubing, catheters, fistula needles, disinfectant and medicines etc. must be ensured in adequate quantity
2. A sign board should be posted prominently in the local understandable language as well as Hindi and English asking patients to report any fever, coughing or breathing problem in dialysis unit and waiting area. The information including images for education can be obtained on the International Society of Nephrology website <https://www.theisn.org/covid-19>

3. All hemodialysis units should educate their personnel in hemodialysis units; including nephrologists, nurses, technicians, other staff and all patients undergoing MHD along with their care givers about COVID 19
4. All universal precautions must be strictly followed.
5. All staff should strictly follow hand hygiene (seven steps) with soap and water for 20 second before handling any patient and in between two patients. If soap and water are not readily available, use a hand sanitizer that contains at least 60% alcohol. If hands are visibly soiled or dirty, they should be first washed with soap and water and then an alcoholic hand rub used. Avoid touching your eyes, nose, and mouth with unwashed hands.
6. Medical and support staff treating infected patients should be monitored for COVID infection at the dialysis facility and should take necessary action if found infected.
7. Dialysis units should organize healthcare workers shift duties in a way that work of dialysis unit is not affected.
8. All hemodialysis units should be aware of the testing, triage and notification policy recommended by the Union Ministry of health and Family welfare and those by State/ UT Health Departments as well as District health authorities.
9. The dialysis unit staff should be trained for donning and doffing of Personal Protective Equipment (PPE) to be used for dialysis of COVID-19 positive patients.
10. All staff should be trained for cough etiquette, hand hygiene and proper use and disposal of mask, gown and eye glasses and the need to protect themselves.
11. All patients on dialysis, suspected of COVID – 19 should be tested with RT – PCR test as per Government of India protocol.
12. Patients with suspected or positive COVID-19 should be referred to COVID-19 care team as per local guidelines.

GUIDELINES FOR HEMODIALYSIS

I. For Patients

a. Before Arrival to Dialysis Unit

1. All units should instruct their patients to recognize early symptoms of COVID-19 (recent onset fever, Sore throat, Cough, recent Shortness of breath/dyspnea, without major interdialytic weight gain, rhinorrhea, myalgia/bodyache, fatigue and Diarrhea) and contact dialysis staff before coming to dialysis center. The unit needs to make necessary arrangement for their arrival in the screening area.
2. Patients, who are stable on MHD may be encouraged to come to the unit alone without any attendant

b. Screening Area

1. We recommend that dialysis unit should have a designated screening area, where patients can be screened for COVID-19 before allowing them to enter inside dialysis area. Where this is not possible, patients may wait away from the dialysis unit until they receive specific instructions from the unit staff.

2. The screening area should have adequate space to implement social distancing between patients and accompanying persons while waiting for dialysis staff. In screening area, every patient should be asked about:
 - Symptoms suspected of COVID-19 as above.
 - History of contact with a diagnosed case of COVID 19
 - History of contact with person who has had recent travel to foreign country or from high COVID-19 prevalence area within our country as notified by the Central and State/ UT governments respectively.
3. Patients with symptoms of a respiratory infection should put on a facemask before entering screening area and keep it on until they leave the dialysis unit. Dialysis unit staff should make sure an adequate stock of masks is available in screening area to provide to the patients and accompanying person if necessary.
4. There should be display of adequate IEC material (posters etc.) about COVID – 19 in the screening area.

c. Inside Dialysis Unit

1. Suspected or positive COVID-19 patients should properly wear disposable three-layer surgical mask throughout dialysis duration.
2. Patients should wash hands with soap and water for at least 20 seconds, using proper method of hand washing. If soap and water are not readily available, a hand sanitizer containing at least 60% alcohol can be used.
3. Patients should follow cough etiquettes, like coughing or sneezing using the inside of the elbow or using tissue paper.
4. Patients should throw used tissues in the trash. The unit should ensure the availability of plastic lined trash cans appropriately labeled for disposing of used tissues. The trash cans should be foot operated ideally to prevent hand contact with infective material.
5. There should be display of adequate IEC material (posters etc.) about COVID – 19 in the dialysis area.

II. For Dialysis Staff

a. Screening Area

1. The unit staff should make sure an adequate stock of masks and sanitizers are available in screening area to provide to the patients and accompanying person if necessary.

b. During Dialysis

1. It should be ensured that a patient or staff in a unit does not become the source of an outbreak.
2. Each dialysis chair/bed should have disposable tissues and waste disposal bins to ensure adherence to hand and respiratory hygiene, and cough etiquette and appropriate alcohol-based hand sanitizer within reach of patients and staff.
3. Dialysis personnel, attendants and caregivers should also wear a three-layer surgical facemask while they are inside dialysis unit.
4. Ideally all patients with suspected or positive COVID-19 be dialyzed in isolation. The isolation ideally be in a separate room with a closed door, but may not be possible in all units. The next most suitable option is the use of a separate shift, preferably the last of the day for dialyzing all such patients. This offers the advantage of avoiding long waiting periods or the need for extensive additional disinfection in between shifts. The next suitable option is to physically separate areas for proven positive and suspected cases. Where this is also not possible, we suggest that the positive or suspected patient may be dialyzed at a row end within the unit ensuring a separation from all other patients by at least 2 meters.
5. Staff caring for suspected or proved cases should not look after other patients during the same shift.
6. Dialysis staff should use of all personal protective equipment (PPE) for proven or strongly suspected patients of COVID-19. Isolation gowns should be worn over or instead of the cover gown (i.e., laboratory coat, gown, or apron with incorporate sleeves) that is normally worn by hemodialysis personnel. If there are shortages of gowns, they should be prioritized for initiating and terminating dialysis treatment, manipulating access needles or catheters, helping the patient into and out of the station, and cleaning and disinfection of patient care equipment and the dialysis station. Sleeved plastic aprons may be used in addition to and not in place of the PPE recommended above.
7. Separating equipments like stethoscopes, thermometers, Oxygen saturation probes and blood pressure cuffs between patients with appropriate cleaning and disinfection should be done in between shifts.
8. Stethoscope diaphragms and tubing should be cleaned with an alcohol-based disinfectant including hand rubs in between patients. As most NIBP sphygmomanometer cuffs are now made of rexine they should also be cleaned by alcohol or preferably hypochlorite-based (1% Sodium Hypochlorite) solutions however the individual manufacturer's manuals should be referred to.
9. Staff using PPE should be careful of the following issues:

- While using PPE, they will not be able to use wash room so prepare accordingly
- After wearing eye shield, moisture appears after some time and visibility may become an issue. Therefore, machine preparation can be done in non-infected area before shifting to near the patient
- If dialysis is to be done bed-side in the hospital, portable RO should be properly disinfected with hypochlorite (1% Sodium Hypochlorite) solution between use of two patients

DISINFECTION AND DISPOSAL PRACTICES IN DIALYSIS UNIT

- Bed linen should be changed between shifts and used linen and gowns be placed in a dedicated container for waste or linen before leaving the dialysis station. Disposable gowns should be discarded after use. Cloth gowns should be soaked in a 1% hypochlorite solution for 20 minutes before sluicing and then be transported for laundering after each use.
- Inside dialysis unit, clean and disinfect frequently touched surfaces at least thrice daily and after every shift. This includes bedside tables and lockers, dialysis machines, door knobs, light switches, counter tops, handles, desks, phones, keyboards, toilets, faucets, and sinks etc.
- It is recommended that solutions for disinfection be composed either of hypochlorite, alcohol, formaldehyde or glutaraldehyde for disinfection of surfaces in accordance with the manufacturer's instructions. Almost all common disinfectant solutions are effective in killing the virus on surfaces, the key is effective and frequent cleaning.
- **Bleach solution**
 - Mix 1 liter of Medichlor with 9 liters of water. This solution can be used for upto 24 hours after which it should be discarded and a fresh solution prepared.
 - As an alternative 10 Grams of household bleaching powder can be dissolved in a liter of water and used for a period of 24 hours.
- **Alcohol based solutions**
 - Ensure solution has at least 60% alcohol. Appropriate commercially available solutions include Aerodosin a mixture of isopropanol, glutaraldehyde and ethanol or lysoformin a mixture of formaldehyde and glutaraldehyde can be used.
- Wear unsterile but clean disposable gloves when cleaning and disinfecting surfaces. Gloves should be discarded after each cleaning. If reusable gloves are used, those gloves should be dedicated for cleaning and disinfection of surfaces for COVID-19 and should not be used for other purposes. Clean hands by above method immediately after gloves are removed.
- For soft (porous) surfaces such as carpeted floor, rugs, and drapes, remove visible contamination if present and clean with appropriate cleaners indicated for use on these surfaces. After cleaning, launder items as appropriate in accordance with the manufacturer's instructions. If possible, launder items using the warmest appropriate water setting for the items and dry items completely.

- Wear disposable gloves when handling dirty laundry from an ill person and then discard after each use. Do not shake dirty laundry. This will minimize the possibility of dispersing virus through the air.
- Clean and disinfect clothes buckets or drums according to guidance above for surfaces. If possible, consider placing a bag liner that is either disposable (can be thrown away) or can be laundered.

DIALYSIS OF COVID – 19 PATIENT WITH ACUTE KIDNEY INJURY (AKI)

A small proportion of patients (~5%) of COVID – 19 develops AKI. The disease is usually mild but a small number may require RRT (Renal Replacement Therapy). In addition, even smaller proportion of patients with secondary bacterial infection will have septic shock, drug nephrotoxicity or worsening of existing CKD severe enough to require RRT (Renal Replacement Therapy).

- It is suggested that all modalities of RRT may be used for patients with AKI depending on their clinical status.
- Patient admitted in other ward of the hospital with AKI should be preferably given bed-side dialysis rather than shifting patient in main dialysis unit.
- In such situation portable reverse osmosis water in a tank will serve the purpose for the dialysis.
- If more dialysis is expected in selected area, dialysis machine may be left in the same area for future dialysis.
- Ideally, this procedure should happen in COVID – 19 dedicated hospital/ ward.

CONTINUOUS RENAL REPLACEMENT THERAPY (CRRT)

- CRRT machines are free standing and can function anywhere in the hospital using sterile bagged replacement fluid and dialysate, but operating costs are high.

OTHER EXTRACORPOREAL THERAPY FOR COVID-19

- Use of cytokine removal therapies with Cytosorb, Oxiris and other similar devices is unproven and is not recommended except in the context of a clinical trial.
- Cytokine storm associated with elevated levels of IL-6, IL-18 and IFN gamma are associated with more severe disease and higher mortality. Extracorporeal therapies using high volume hemofiltration or adsorption to decrease cytokine levels may theoretically be expected to confer benefit and 1 study of HVHF at 6L/hr showed cytokine reduction and improvement in SOFA scores in septic patients.

PERITONEAL DIALYSIS

1. Patients already on CAPD

- Patients who are already receiving peritoneal dialysis (PD) treatment have the relative advantage over patients who are receiving hospital or satellite-based haemodialysis treatment as they will not be exposed to hospital environment. This will reduce their exposure to infection. However, they should arrange their delivery of supply well in time to avoid missing dialysis exchanges.
- Used dialysis bags and tubing should be properly disposed using 1% hypochlorite solution first and disposed in a sealed bag. Used dialysis fluid should be drained in the flush.

2. New patient planned for CAPD

- It will be difficult to maintain a service that can commence new patients on PD, mainly through a lack of healthcare worker to insert PD catheter and to provide the intensive training required. Therefore, initiation of new patient should be avoided, unless the resources are available and the facility is equipped.

3. Acute PD

- Use of acute peritoneal dialysis can be lifesaving and should be used as and when required and, in the setting, where hemodialysis facility is not available. Health care worker should use all precautions while initiating acute PD and discard used consumables properly.

PERSONAL PROTECTIVE EQUIPMENTS (PPE)

Personal protective equipment must be used while dialyzing COVID-19 positive patients.

These include:

- Shoe covers
- Gown
- Surgical cap or hood
- Goggles or eye shields
- Mask: Ideally all masks should be N95 respirators with filters. However, as the life of such masks is approximately 6-8 hours and they can be uncomfortable over a long term and are also in short supply, they should be prioritized for aerosol generating procedures, namely intubation, open suction and bronchoscopy. Surgical triple layer masks and cloth masks can be used as alternatives for all other procedures.
- Surgical gloves.

The correct method of donning and doffing personal protective equipment's (PPE) can be viewed on YouTube at <https://youtu.be/NrKo2vWJ8m8>. However, it is always better to give hands on training of donning and doffing to staff who is going to handle suspected or positive patients.

**Ministry of Health and Family Welfare
Directorate General of Health Services
[Emergency Medical Relief]**

Novel Coronavirus Disease 2019 (COVID-19): Additional guidelines on rational use of Personal Protective Equipment (setting approach for Health functionaries working in non-COVID areas)

1. About this guideline

This guideline is for health care workers and others working in Non COVID hospitals and Non-COVID treatment areas of a hospital which has a COVID block. These guidelines are in continuation of guidelines issued previously on ‘Rational use of Personal Protective Equipment’ (<https://www.mohfw.gov.in/pdf/GuidelinesonrationaluseofPersonalProtectiveEquipment.pdf>). This guideline uses “settings” approach to guide on the type of personal protective equipment to be used in different settings.

2. Rational use of PPE for Non COVID hospitals and Non-COVID treatment areas of a hospital which has a COVID block

The PPEs are to be used based on the risk profile of the health care worker. The document describes the PPEs to be used in different settings.

2.1. Out Patient Department

S.No.	Setting	Activity	Risk	Recommended PPE	Remarks
1	Help desk/ Registration counter	Provide information to patients	Mild risk	<ul style="list-style-type: none"> ▪ Triple layer medical mask ▪ Latex examination gloves 	Physical distancing to be followed at all times
2	Doctors chamber	Clinical management	Mild risk	<ul style="list-style-type: none"> ▪ Triple layer medical mask ▪ Latex examination gloves 	No aerosol generating procedures should be allowed.
3	Chamber of Dental/ENT doctors/ Ophthalmology doctors	Clinical management	Moderate risk	<ul style="list-style-type: none"> ▪ N-95 mask ▪ Goggles ▪ Latex examination gloves <p>+ face shield</p>	<p>Aerosol generating procedures anticipated.</p> <p>Face shield, when a splash of body fluid is expected</p>
4	Pre- anesthetic check-up clinic	Pre-anesthetic check-up	Moderate risk	<ul style="list-style-type: none"> ▪ N-95 mask ▪ Goggles* ▪ Latex examination gloves 	* Only recommended when close examination of oral cavity/dentures is to be done
5	Pharmacy counter	Distribution of drugs	Mild risk	<ul style="list-style-type: none"> ▪ Triple layer medical mask ▪ Latex examination gloves 	Frequent use of hand sanitizer is advised over gloves.

6	Sanitary staff	Cleaning frequently touched surfaces/ Floor	Mild risk	<ul style="list-style-type: none"> ▪ Triple layer medical mask ▪ Latex examination gloves 	
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#All hospitals should identify a separate triage and holding area for patients with Influenza like illness so that suspect COVID cases are triaged and managed away from the main out-patient department.

2.2. In-patient Department (Non-COVID Hospital & Non-COVID treatment areas of a hospital which has a COVID block)

S.No.	Setting	Activity	Risk	Recommended PPE	Remarks
1	Ward/individual rooms	Clinical management	Mild risk	<ul style="list-style-type: none"> ▪ Triple layer medical mask ▪ Latex examination gloves 	Patients stable. No aerosol generating activity.
2	ICU/ Critical care	Critical care management	Moderate risk	<ul style="list-style-type: none"> ▪ N-95 mask ▪ Goggles ▪ Nitrile examination gloves +Face shield	Aerosol generating activities performed. Face shield, when a splash of body fluid is expected
3	Ward/ICU /critical care	Dead body packing	Low Risk	<ul style="list-style-type: none"> ▪ Triple Layer medical mask ▪ Latex examination gloves 	
4	Ward/ICU/ Critical care (Non-COVID)	Dead body transport to mortuary	Low Risk	<ul style="list-style-type: none"> ▪ Triple Layer medical mask ▪ Latex examination gloves 	
5	Labor room	Intra-partum care	Moderate Risk	<ul style="list-style-type: none"> ▪ Triple Layer medical mask ▪ Face shield ▪ Sterile latex gloves N-95 mask*	Patient to be masked in the Labor room *If the pregnant woman is a resident of containment zone
6	Operation Theater	Performing surgery, administering general anaesthesia	Moderate Risk	<ul style="list-style-type: none"> ▪ Triple Layer medical mask ▪ Face shield (- wherever feasible) ▪ Sterile latex gloves + Goggles	Already OT staff shall be wearing For personnel involved in aerosol generating procedures

				N-95 mask*	*If the person being operated upon is a resident of containment zone
7	Sanitation	Cleaning frequently touched surfaces/ floor/ changing linen	Low Risk	<ul style="list-style-type: none"> ▪ Triple Layer medical mask ▪ Latex examination gloves 	

2.3. Emergency Department (Non-COVID)

S.No.	Setting	Activity	Risk	Recommended PPE	Remarks
1	Emergency	Attending emergency cases	Mild risk	<ul style="list-style-type: none"> ▪ Triple Layer medical mask ▪ Latex examination gloves 	No aerosol generating procedures are allowed
2		Attending to severely ill patients while performing aerosol generating procedure	High risk	<ul style="list-style-type: none"> ▪ Full complement of PPE (N-95 mask, coverall, goggle, Nitrile examination gloves, shoe cover) 	

2.4. Other Supportive/ Ancillary Services

S.No.	Setting	Activity	Risk	Recommended PPE	Remarks
1.	Routine Laboratory	Sample collection and transportation and testing of routine (non-respiratory) samples	Mild risk	<ul style="list-style-type: none"> ▪ Triple layer medical mask ▪ Latex examination gloves 	
		Respiratory samples	Moderate risk	<ul style="list-style-type: none"> ▪ N-95 mask ▪ Latex examination gloves 	
2	Radio-diagnosis, Blood bank, etc.	Imaging services, blood bank services etc.	Mild risk	<ul style="list-style-type: none"> ▪ Triple layer medical mask ▪ Latex examination gloves 	
3	CSSD/Laundry	Handling linen	Mild risk	<ul style="list-style-type: none"> ▪ Triple layer medical mask ▪ Latex examination 	

				gloves	
4	Other supportive services incl. Kitchen	Administrative Financial Engineering** and dietary** services,etc.	Low risk	<ul style="list-style-type: none"> ▪ Face cover 	** Engineering and dietary service personnel visiting treatment areas will wear personal protective gears appropriate to that area

2.5. Pre-hospital (Ambulance) Services

S.No.	Setting	Activity	Risk	Recommended PPE	Remarks
1	Ambulance Transfer to designated hospital	Transporting patients not on any assisted ventilation	Low risk	<ul style="list-style-type: none"> ▪ Triple layer medical mask ▪ Latex examination gloves 	
		Management of SARI patient	High risk	<ul style="list-style-type: none"> ▪ Full complement of PPE (N-95 mask, coverall, goggle, latex examination gloves, shoe cover) 	While performing aerosol generating procedure
		Driving the ambulance	Low risk	<ul style="list-style-type: none"> ▪ Triple layer medical mask ▪ Latex examination gloves 	Driver helps in shifting patients to the emergency

Points to remember while using PPE

1. Standard precaution to be followed at all times
2. PPEs are not alternative to basic preventive public health measures such as hand hygiene, respiratory etiquettes which must be followed at all times.
3. Always follow the laid down protocol for disposing off PPEs as detailed in infection prevention and control guideline available on website of MoHFW.

In addition, patients and their attendants to be encouraged to put on face cover.

In case a COVID-19 patient is detected in such Non-COVID Health facility, the MoHFW guidelines for the same has to be followed (Available at: <https://www.mohfw.gov.in/pdf/GuidelinestobefollowedondetectionofsuspectorconfirmedCOVID19case.pdf>)

**Ministry of Health & Family Welfare
Directorate General of Health Services
EMR Division**

Guidelines to be followed on detection of suspect/confirmed COVID-19 case in a non-COVID Health Facility

1. Background

There have been some instances of hospitals having closed down as few health care workers (HCW) working there turned out to be positive for COVID -19. Also some non-COVID health facilities have reported confirmation of COVID-19, in patients admitted for unrelated/non-respiratory illness, causing undue apprehension among healthcare workers, sometimes leading to impaired functionality of such hospitals.

Although Ministry of Health & Family Welfare has issued comprehensive guidance to prevent occurrence of Hospital Acquired Infection (HAI) in health facilities, the practice of universal precautions might still be lacking in many of our hospitals. A COVID-19 case with mild/asymptomatic/atypical presentation may go undetected and inadvertently transmit the infection to other patients and healthcare workers, putting these individuals at risk of contracting disease and compromise the functionality of the healthcare facility.

2. Purpose of document

This document aims to provide guidance on action to be taken on detection of suspect/confirmed COVID-19 case in a healthcare facility.

3. Scope

This document is intended for both (i) COVID-19 healthcare facilities (public and private) which are already receiving or preparing to receive suspected or confirmed COVID-19 patients as well as (ii) Non-COVID healthcare facilities.

4. Institutional arrangement

The Hospital Infection Control Committee (HICC) has well-defined composition, roles and responsibilities. This committee is responsible for establishing a mechanism for reporting of development of symptoms suggestive of COVID-19 in HCW. These include surveillance for fever/cough/breathing difficulty through either self-reporting or active and passive screening at the beginning of their shift. The Committee will also monitor patients (who have been admitted for non-COVID illness) for development of unexplained fever/cough/breathing difficulty during their stay.

HICC will ensure that existing IPC guidelines against such high risk situations must be audited, updated and reiterated to all HCW. Further, all IPC guidelines will be strictly

adhered to and followed at all times. As a matter of abundant precautions for hospitals located in proximity/catering to COVID-19 containment zone/s it might be desirable to treat all patients as suspect COVID-19 case until proven otherwise and exercise standard care.

Whenever a non-COVID patient or any healthcare workers is suspected to have COVID like symptoms/tests positive for COVID-19, the HICC will come into action, investigate the matter and suggest further course of action as described below.

4.1 Action to be taken on detection of COVID -19 case in non-COVID health facility

When a positive COVID-19 patient is identified in a health care facility, not designated as COVID-19 isolation facility:

- Inform the local health authorities about the case
- Assess the clinical status of the patient prior to referral to a designated COVID facility
- The patient should be immediately isolated to another room (if currently being managed in a shared ward/room). If the clinical condition permits, such patients should be masked and only a dedicated healthcare worker should attend this case, following due precautions.
- If the clinical status of the case permits, transfer such case to a COVID-19 isolation facility (Dedicated COVID Health Centre or dedicated COVID Hospital), informing the facility beforehand about the transfer, as per his/her clinical status, test results (if available), with information to local health authority. Complete case records of such patients must be made available to the receiving hospital.
- Follow appropriate standard precautions while transporting the patient
- This should be followed by disinfection procedures at the facility and the ambulance
- All contacts of this patient (other patients being managed in the same room or ward, healthcare workers who have attended to him/her, support staff who may have come in close contact, caretaker/visitors etc.) should be quarantined and followed up for 14 days. Their details must also be shared with the local health authorities.
- All close contacts (other HCWs and supportive staff) of the confirmed case should be put on Hydroxychloroquine chemoprophylaxis for a period of 7 weeks, keeping in mind the contraindications of HCQ.
- If a healthcare worker is suspected to have contacted the disease, the following additional action needs to be performed.

4.2 When a suspect/confirmed COVID-19 HCW is identified

- HCWs developing respiratory symptoms (e.g. fever, cough, shortness of breath) should be considered suspected case of COVID-19.
- He/she should immediately put on a facemask, inform his supervisor and HICC. He/she should be isolated and arrangement must be made to immediately refer such a HCW

to COVID-19 designated hospital (if not already working in such a facility) for isolation and further management.

- He/she should be immediately taken off the roster
- Rapidly risk stratify other HCWs and other patients that might have been exposed to the suspect HCW and put them under quarantine and follow up for 14 days (or earlier if the test result of a suspect case turns out negative). Their details must also be shared with the local health authorities.
- All close contacts (other HCW and supportive staff) of the confirmed case should be put on Hydroxychloroquine chemoprophylaxis for a period of 7 weeks, keeping in mind the contraindications of the HCQ.
- **All health facilities (HCF) must have a staffing plan in place including a contingency plan for such an event to maintain continuity of operations. E.g. staff in HCF can be divided into groups to work on rotation basis every 14 days and a group of back up staff which is pooled in case some high risk exposure/HCW with suspected COVID-19 infection is detected.**
- Ensure that the disinfection procedures are strictly followed.

Once a suspect/confirmed case is detected in a healthcare facility, standard procedure of rapid isolation, contact listing and tracking disinfection will follow with no need to shut down the whole facility.

5. Decision on further /continued use of non-COVID facilities where a single/multiple COVID-19 case has been reported

The likely scenarios could be:

- Socio-demographic reasons:

- a) Hospital's catchment area is a large cluster of COVID-19.
- b) Catchment area is having a population which has a large number of vulnerable individuals having multiple co-morbid condition, poor nutritional status and/or having individuals not able to practice social distancing e.g. slum clusters.

- Internal Administrative Reasons:

- a) The health facility is not up to the mark in IPC practices.
- b) Non-fulfilment of guidelines regarding triaging of patients in the outpatient department and emergency.

Based on the scope of the cluster and degree to which the hospital has been affected (HCW patients, and HCW contacts), degree of the risk to the patients visiting the hospital such as those with chronic diseases etc. the decision can be made based on a risk assessment to:

- If the hospital authorities are reasonably satisfied that the source case/s have been identified and isolated, all contacts have been traced and quarantined and adequate disinfection has been achieved, the hospital will continue to function.
- In addition to steps taken above, if the health facility still continues to report new hospital acquired COVID-19 cases in the following days, it would be advisable to temporarily close the defined section of the health facility where the maximum number of HAI is being reported. After thorough cleaning and disinfection it can be put to use again.
- Despite taking the above measures, if the primary source of infection could not be established and /or the hospital is still reporting large number of cases among patients and HCWs a decision needs to be taken to convert the non-COVID health facility into a COVID health facility under intimation to the local health department. In such a scenario, the entire healthcare workers of the facility should be oriented in Infection Prevention and Control practices and other protocols for which guidance is available at www.mohfw.gov.in.

6. Follow up actions

When a non-COVID health facility reports a COVID-19 case, the HICC will ensure the following in order to minimize the possibility of an undetected contact/case amongst other patients/HCWs:

- Ensure that active screening of all staff at the hospitals is done daily (by means of thermal screening especially at the start of shift)
- All healthcare and supportive staff is encouraged to monitor their own health at all the time for appearance of COVID-19 symptoms and report them at the earliest.
- Be on the lookout for atypical presentation (or clinical course) of admitted patients
- Standard precautions to be followed diligently by all
- Follow all guidelines regarding triaging of patients in hospital emergency and outpatient departments.

Advisory on the use of hydroxy–chloroquine as prophylaxis for SARS-CoV-2 infection

The National Task force for COVID-19 constituted by Indian Council of Medical Research recommends the use of hydroxy– chloroquine for prophylaxis of SARS-CoV-2 infection for high risk population. Copy is annexed.

The Advisory provides for placing the following high risk population under chemoprophylaxis with hydroxy chloroquine:

- Asymptomatic Healthcare Workers involved in the care of suspected or confirmed cases of COVID-19
- Asymptomatic household contacts of laboratory confirmed cases

The protocol recommended by the National Task force has been approved by the Drug Controller General of India for restricted use in emergency situations.

While following the above recommendations, States should take note of the following:

- 1) **The placing of healthcare workers under chemoprophylaxis should not instill a sense of false security.** They should follow all prescribed public health measures such as frequent washing of hands, respiratory etiquettes, keeping a distance of minimum 1m and use of Personal protective equipment (wherever applicable).
- 2) They should self-monitor their health and report to health authorities immediately in the event of them becoming symptomatic.
- 3) The high risk contacts of a positive case placed under chemo prophylaxis, **should remain in home quarantine while on prophylactic therapy.**
- 4) As recommended by the said Task Force, the drug should only be given on the prescription of a registered medical practitioner. The contraindications mentioned in the recommendations should strictly be followed.
- 5) Apart from the symptoms of COVID-19 (fever, cough, breathing difficulty), if the person on chemo-prophylaxis develops any other symptoms, he should immediately seek medical treatment of the medical practitioner who has prescribed the chemoprophylaxis.

It is reiterated that the intake of the above medicine should not in still sense of false security.



सत्यमेव जयते

प्रोफेसर (डा.) बलराम भार्गव, पद्म श्री

एमडी, डीएम, एफआरसीपी (जी.), एफआरसीपी (ई.), एफएसीसी,
एफएएचए, एफएएमएस, एफएनएस, एफएएससी, एफ.एन.ए., डी.एन.सी.

सचिव, भारत सरकार

स्वास्थ्य अनुसंधान विभाग

स्वास्थ्य एवं परिवार कल्याण मंत्रालय एवं

महानिदेशक, आई सी एम आर

Prof. (Dr.) Balram Bhargava, Padma Shri

MD, DM, FRCP (Glasg.), FRCP (Edin.),
FACC, FAMA, FAMS, FNAsc, FASc, FNA, DSc

Secretary to the Government of India

Department of Health Research

Ministry of Health & Family Welfare &

Director-General, ICMR



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भारतीय आयुर्विज्ञान अनुसंधान परिषद

स्वास्थ्य अनुसंधान विभाग

स्वास्थ्य एवं परिवार कल्याण मंत्रालय

भारत सरकार

वी. रामलिंगस्वामी भवन, अंसारी नगर

नई दिल्ली - 110 029

Indian Council of Medical Research

Department of Health Research

Ministry of Health & Family Welfare

Government of India

V. Ramalingaswami Bhawan, Ansari Nagar

New Delhi - 110 029

D.O.No.VIR/4/2020/ECD-I

22nd March, 2020

Dear Madam

Please find attached the final recommendation of the National Taskforce for COVID-19 for the use of hydroxychloroquine as prophylaxis. This recommendation supersedes the earlier recommendation dated 21.3.2020

With regards

Yours sincerely,

(Balram Bhargava)

Encl: As above

Smt. Preeti Sudan,

Secretary (Health & Family Welfare)

Ministry of Health & Family Welfare,

Nirman Bhawan,

New Delhi-110008.

Recommendation for empiric use of hydroxy-chloroquine for prophylaxis of SARS-CoV-2 infection

Background:

Hydroxy-chloroquine is found to be effective against coronavirus in laboratory studies and in-vivo studies. Its use in prophylaxis is derived from available evidence of benefit as treatment and supported by pre-clinical data. The following recommendation for the use of hydroxy-chloroquine as a prophylactic agent against SARS-CoV-2 infection is based on these considerations, as well as risk-benefit consideration, under exceptional circumstances that call for the protection of high-risk individuals.

The National Taskforce for COVID-19 recommends the use of hydroxy-chloroquine for prophylaxis of SARS-CoV-2 infection for selected individuals as follows:

Eligible Individuals:

- Asymptomatic healthcare workers involved in the care of suspected or confirmed cases of COVID-19
- Asymptomatic household contacts of laboratory confirmed cases

Dose:

- Asymptomatic healthcare workers involved in the care of suspected or confirmed cases of COVID-19: 400 mg twice a day on Day 1, followed by 400 mg once weekly for next 7 weeks; to be taken with meals
- Asymptomatic household contacts of laboratory confirmed cases: 400 mg twice a day on Day 1, followed by 400 mg once weekly for next 3 weeks; to be taken with meals

Exclusion/contraindications:

- The drug is not recommended for prophylaxis in children under 15 years of age.
- The drug is contraindicated in persons with known case of retinopathy, known hypersensitivity to hydroxychloroquine, 4-aminoquinoline compounds

Key considerations:

- The drug has to be given only on the prescription of a registered medical practitioner.
- Advised to consult with a physician for any adverse event or potential drug interaction before initiation of medication
- The prophylactic use of hydroxychloroquine to be coupled with the pharmacovigilance for adverse drug reactions through self-reporting using the Pharmacovigilance Program of India (PvPI) helpline/app.
- If anyone becomes symptomatic while on prophylaxis he/she should immediately contact the health facility, get tested as per national guidelines and follow the standard treatment protocol.
- All asymptomatic contacts of laboratory confirmed cases should remain in home quarantine as per the national guidelines, even if they are on prophylactic therapy.
- Simultaneously, proof of concept and pharmacokinetics studies be taken up expeditiously. Findings from these studies and other new evidence will guide any change in the recommendation.



सत्यमेव जयते

डॉ. प्रदीप व्यास, भा.प्र.से.

प्रधान सचिव

Dr. Pradeep Vyas, I.A.S.

Principal Secretary



सार्वजनिक आरोग्य विभाग
महाराष्ट्र शासन

महाराष्ट्र शासन

सार्वजनिक आरोग्य विभाग

१०वा मजला, गोकुळदास तेजपाल रुग्णालय कॉम्प्लेक्स बिल्डींग,

नविन मंत्रालय, मुंबई- ४०० ००१

दुरध्वनी : कार्यालय - ०२२-२२६१७३८८ फॅक्स : २२६१७९९९

GOVERNMENT OF MAHARASHTRA

Public Health Department

10th Floor, G.T. Hospital Complex Building,

New Mantralaya, Mumbai- 400 001.

Phone : 022-22617388 Fax : 022-22617999

E-mail : psec.pubhealth@maharashtra.gov.in

प.क्र.कोविड २०२०/प्र.क्र.५८/आ-५

दिनांक: ७ मे, २०२०

प्रति,

उप संचालक आरोग्य सेवा, प्रभारी मंडळ (सर्व)
जिल्हा शल्य चिकित्सक, जिल्हा रुग्णालय... (सर्व)
जिल्हा आरोग्य अधिकारी, जिल्हा परिषद ... (सर्व)
वैद्यकीय आरोग्य अधिकारी, महानगरपालिका.. (सर्व)
कार्यकारी आरोग्य अधिकारी, बृहन्मुंबई महानगरपालिका, मुंबई

विषय:- कोविड-१९ रुग्णालयात मनुष्यबळाचे व्यवस्थापन

राज्यात प्रत्येक जिल्ह्यात कोविड-१९ रुग्णालये (Dedicated Covid Hospital), कोविड आरोग्य केंद्रे (Dedicated Covid Health Centre) आणि कोविड उपचार केंद्र (Covid Care Centre) स्थापन करण्यात आलेली आहेत. या ठिकाणी कार्य करणाऱ्या मनुष्यबळाचे योग्य प्रकारे नियोजन करणे अत्यावश्यक आहे. या रुग्णालयात कर्तव्यावर असलेल्या वैद्यकीय तज्ञांपासून ते रुग्णालयीन स्वच्छता पाहणाऱ्या कर्मचाऱ्यांच्या सुरक्षिततेचा विचार करून त्यांच्या कर्तव्याचे व्यवस्थापन करणे आवश्यक आहे.

कोविड-१९ रुग्णालये (DCH), कोविड आरोग्य केंद्रे (DCHC) आणि कोविड उपचार केंद्र (CCC) येथे कर्तव्यावर असलेल्या मनुष्यबळाचे व्यवस्थापन करतांना पुढील बाबी लक्षात घेण्यात आलेल्या आहेत:-

१. उपलब्ध तज्ञ व इतर मनुष्यबळाची सुरक्षा
२. उपलब्ध तज्ञ व इतर मनुष्यबळाचा पूर्ण क्षमतेने वापर

चक्राकार पध्दतीने कामकाज:

- १) DCH/DCHC/CCC मध्ये अधिकारी व कर्मचारी यांची ड्युटी ही चक्राकार पध्दतीने लावणे आवश्यक आहे. यात संपूर्ण एक चक्र हे २१ दिवसांचे राहिल. ७ दिवस कोविड भागात DCH/DCHC/CCC ड्युटी, त्यानंतर ७ दिवस ड्युटी ऑफ आणि ७ दिवस नॉन कोविड भागात ड्युटी लावण्यात यावी. ७ दिवसांच्या कोविड ड्युटी कालावधीत त्यांना रुग्णालय परिसरात राहण्याची व्यवस्था करण्यात यावी.



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२) कोविड ड्युटी कालावधीत कर्मचारी यांची रुग्णालय परिसरात किंवा नजीक परिसरात राहण्याची व्यवस्था करण्यात यावी.

उपलब्ध तज्ञ व इतर मनुष्यबळ:

(अ) वैद्यकीय विशेषज्ञ:

कोविड रुग्णालयात भिषकतज्ञ, बधीरीकरणतज्ञ, सोनोलॉजीस्ट यांची महत्त्वाची भूमिका आहे. भिषकतज्ञ सोबतच चेस्ट फिजिशियन असल्यास त्यांची सेवासुध्दा कोविड रुग्णालयात घेण्यात याव्यात.

नियमित कर्तव्यावर तज्ञांच्या उपस्थितीसाठी कोविड रुग्णालयात (DCH) तज्ञांचे तीन चमू तयार करण्यात यावे. यामध्ये नियमित तज्ञ तसेच कंत्राटी तत्वावर घेतलेले तज्ञ यांचा समावेश असावा. IMA, Physician Association, Consultant Association यांना संपर्क साधून त्यांच्यातील सेवाभावी तज्ञांच्या सेवासुध्दा उपलब्ध करून द्याव्यात. शक्य असल्यास व उपलब्धता असल्यास Intensivist आणि Hematologist यांच्या On call सुविधा उपलब्ध करून घ्याव्यात.

अतिदक्षता विभागात सहा (६) तासांची ड्युटी लावण्यात यावी. या सहा तासांच्या ड्युटीसाठी भिषक तज्ञ किंवा चेस्ट फिजिशियन यांची ड्युटी लावण्यात यावी. बधीरीकरणतज्ञ, Intensivist आणि Hematologist उपलब्ध असल्यास त्यांना On call बोलाविण्यात यावे. या तज्ञांच्या उपलब्धतेनुसार ८ तास/१२ तासांच्या ड्युटीज लावण्यात याव्यात. हे तज्ञ सदर कर्तव्य कालावधीत On Campus उपलब्ध राहणे आवश्यक आहे.

ज्या ठिकाणी भिषक तज्ञ यांची कमतरता आहे तसेच प्रयत्न करूनही उपलब्ध होत नाही तेथे भिषक तज्ञ यांची On call duty लावावी. सदर ड्युटी ८ ते १२ तासांची राहिल. यात भिषक तज्ञ यांनी किमान २ वेळा Isolation आणि ICU चा राऊंड घेऊन रुग्णांना तपासणे आवश्यक राहिल. या कालावधीत भिषकतज्ञ यांनी शक्यतो On Campus रहावे.

ज्या कोविड आरोग्य केंद्राच्या ठिकाणी ICU आहेत व ICU मध्ये नियमितपणे रुग्ण दाखल होतात, त्या ठिकाणी सुध्दा याच प्रकारे ड्युटी लावण्यात याव्यात. ज्या कोविड आरोग्य केंद्रात ICU नाही, त्या ठिकाणी भिषकतज्ञ यांनी On call राहून Isolation Ward मध्ये ड्युटी करावी.

कोविड उपचार केंद्रात (CCC) विशेषज्ञांची ड्युटी लावण्यात येऊ नये.

(ब) एम.बी.बी.एस. वैद्यकीय अधिकारी:

प्रत्येक कोविड रुग्णालयामध्ये (DCH) प्रशिक्षित एम.बी.बी.एस. वैद्यकीय अधिकारी यांची ड्युटी लावण्यात यावी. Isolation Ward आणि ICU मध्ये वेगळे वैद्यकीय अधिकारी असावेत. ICU ड्युटी ही ६ तासांची राहिल आणि Isolation कक्षात ८ तासांची ड्युटी राहिल. कोविड रुग्णालयीन ड्युटी कालावधी किमान ७ दिवसांचा राहिल.

(क) स्टाफ नर्स (Staff Nurse):

कोविड रुग्णालय (DCH) आणि कोविड आरोग्य केंद्रात (DCHC) प्रत्येक कक्षात एक स्टाफ नर्सची ड्युटी लावण्यात यावी. स्टाफ नर्सची ICU मधील ड्युटी ६ तासांसाठी लावण्यात यावी. वॉर्ड मधील ड्युटी ८ तासांची असावी.

(ड) परिचर/कक्षसेवक/वॉर्डबॉय:

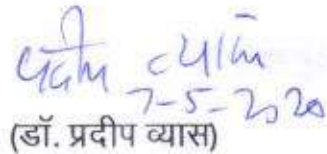
प्रत्येक परिचर/कक्ष सेवक यांचीसुध्दा ICU मध्ये ६ तास आणि Isolation Ward मध्ये ८ तासांची ड्युटी लावावी. यांचेपण ७ दिवसांचे रोटेशन करण्यात यावे. कोविड उपचार केंद्रात ८ तासांची ड्युटी लावावी व त्यांचेदेखील ७ दिवसांचे रोटेशन लावण्यात यावे.

ड्युटी कालावधीत घ्यावयाची काळजी आणि Quarantine व Isolation बाबत मार्गदर्शक सूचना:

- १) सर्व कर्मचारी आणि अधिकारी यांना मार्गदर्शक सुचनेनुसार Hydroxychloriquine ची प्रतिबंधात्मक मात्रा सुरु करण्यात यावी.
- २) सात दिवसांच्या कोविड रुग्णालयातील कर्तव्याच्या काळात सर्व तज्ञ आणि कर्मचारी Campus मध्ये राहतील याची दक्षता घ्यावी व त्याप्रमाणे सुविधा देण्यात यावी.

- ३) या कालावधीत सदर तज्ञ व कर्मचारी यांची नॉन कोविड भागात ड्युटी लावण्यात येऊ नये.
- ४) प्रत्येक अधिकारी/कर्मचारी यांनी रुग्णालयाच्या ज्या भागात कार्य करणार आहेत, त्या भागासाठी आवश्यक केंद्र शासनाच्या मार्गदर्शक सूचनांनुसार PPE चा वापर करावा.
- ५) सात दिवस ड्युटी रजा कालावधीत कर्मचाऱ्यांनी Campus मध्ये किंवा घरी Home Quarantine राहावे.
- ६) कर्तव्य कालावधीत ज्या अधिकारी आणि कर्मचारी यांचा PPE न वापरता पॉझिटिव्ह रुग्णांशी संपर्क आल्यास High Risk Category नुसार कार्यवाही करावी.
- ७) कर्तव्य कालावधीत आजारंची लक्षणे दिसल्यास त्वरीत तपासणी करण्यात यावी व ILI/SARI किंवा कोविड-१९ संशयीत असल्यास त्यांना Isolation मध्ये भरती करून उपचार करण्यात यावेत.
- ८) सेवानिवृत्त कर्मचारी/अधिकारी कर्तव्यावर घेतल्यास त्यांना ICU मध्ये कर्तव्यावर ठेवू नये. तसेच ६० वर्षांपुढील कर्मचारी यांना HT/DM/दुर्धर आजार नाही याची तपासणी करूनच कर्तव्यावर घेण्यात यावे.
- ९) रुग्णालयातील कर्मचारी/अधिकारी यांनी एकत्र जेवण, एकत्र रेकॉर्ड पूर्ण करणे अशा बाबी करू नये. प्रत्येकाने इतर कर्मचाऱ्यांपासून किमान ३ फूट अंतर ठेवावे.
- १०) कर्मचाऱ्यास ताप/खोकला/दम लागणे लक्षणे दिसू लागताच त्वरीत Separate Ward मध्ये दाखल करावे आणि Throat Swab घेण्यात यावा.

उपरोक्त प्रमाणे मार्गदर्शक सूचनांनुसार कोविड रुग्णालये आणि केंद्रात स्टाफ रोटेशन करून मनुष्यबळाचे नियोजन करावे. याप्रमाणे स्थानिक गरजेनुसार आवश्यकता असल्यास मनुष्यबळाची उपलब्धता आणि सुरक्षितता जिल्हा शल्य चिकित्सक यांनी नियोजन करावे.


 (डॉ. प्रदीप व्यास)

प्रधान सचिव, महाराष्ट्र शासन

प्रत रवाना:

१. आयुक्त आरोग्य सेवा तथा अभियान संचालक, राआअ, मुंबई.
२. संचालक आरोग्य सेवा, पुणे
३. संचालक आरोग्य सेवा, मुंबई

महाराष्ट्र शासन

अत्यंत तातडीचे

क्रमांक कोरोना २०२०/प्र.क्र. ५८/आरोग्य ५
सार्वजनिक आरोग्य विभाग
गोकुळदास तेजपाल रुग्णालय आवार
कॉम्प्लेक्स बिल्डिंग, नविन मंत्रालय,
मुंबई-४०० ००९
दिनांक- ०९.०५.२०२०

प्रति,

जिल्हाधिकारी(सर्व)
आयुक्त महानगरपालिका(सर्व)
कार्यकारी आरोग्य अधिकारी, बृहन्मुंबई महानगरपालिका.
उपसंचालक आरोग्य सेवा, परिमंडळे(सर्व)
जिल्हा शल्य चिकित्सक, सामान्य रुग्णालय.....(सर्व)
जिल्हा आरोग्य अधिकारी, जिल्हा परिषद.....(सर्व)
वैद्यकिय आरोग्य अधिकारी , महानगरपालिका (सर्व)

विषय:- कोवीड १९ रुग्णांसाठी सुधारीत डिस्चार्ज पॉलिसी

संदर्भ:- केंद्र शासनाच्या मार्गदर्शक सूचना दिनांक ८/५/२०२०

केंद्र शासनाच्या मार्गदर्शक सूचनांनुसार कोवीड १९ रुग्णांसाठी निश्चित केलेल्या त्रीस्तरीय संस्थात्मक रचनेनुसार या रुग्णांसाठी सुधारीत डिस्चार्ज पॉलिसी तयार करण्यात आली आहे. ही पॉलिसी रुग्णांच्या लक्षणांच्या स्थितीवर अवलंबून आहे.

(<https://www.mohfw.gov.in/pdf/finalGuidanceonMangaementofCovidcasesversion२.pdf>)

या सुधारीत धोरणानुसार पुढीलप्रमाणे मार्गदर्शक सूचना निर्गमित करण्यात येत आहेत.

१) सौम्य, अति सौम्य व लक्षणे नसलेले रुग्ण :-

- सौम्य, अति सौम्य व लक्षणे नसलेल्या ज्या रुग्णांना आरोग्य संस्थांमध्ये दाखल करण्यात आले असेल त्यांची दररोज दोन वेळा शरीराच्या तापमानासाठी आणि पल्स ऑक्सीमिटरद्वारे SpO2 तपासणी करण्यात यावी.
- रुग्णाला लक्षणे सुरु झाल्यापासून ७ व्या, ८ व्या व ९ व्या दिवशी ताप नसल्यास १०व्या दिवशी तपासणी करून डिस्चार्ज देण्यात यावा.
- या रुग्णांना डिस्चार्ज करित असतांना कोवीड विषाणुसाठी प्रयोगशाळा तपासणीची आवश्यकता नाही.

- डिस्चार्जवेळी रुग्णांना घरी विलगीकरण (Home Isolation) पुढील ७ दिवसासाठी करणे आवश्यक असल्याच्या सूचना देण्यात याव्यात.
- या रुग्णांना डिस्चार्ज झाल्यानंतर त्यांच्या हातावर ७ दिवसांचा स्टॅम्प लावण्यात यावा.
- या रुग्णांमध्ये दाखल असताना डिस्चार्ज करण्यापूर्वी ऑक्सीजनचे प्रमाण ९५ टक्के पेक्षा कमी आढळून आल्यास रुग्णांना Dedicated COVID Health Centre ला संदर्भीत करण्यात यावे.
- या रुग्णांना त्यांच्यामध्ये पुन्हा ताप,खोकला, श्वास घेण्यास त्रास अशी लक्षणे आढळून आल्यास जवळचे कोवीड केअर सेन्टर अथवा राज्याच्या १०४ टोल फ्री क्रमांक हेल्पलाईनवर अथवा नियंत्रण कक्ष ०२०-२६१२७३९४ येथे संपर्क करण्याबाबत कळविण्यात यावे.
- या रुग्णांचा १४ व्या दिवशी आरोग्य कर्मचा-यांनी दूरध्वनीद्वारे पाठपुरावा करावा व लक्षणे नसल्याची खात्री करावी व तशी नोंद करावी.

२) मध्यम लक्षणे असलेले रुग्ण :-

जे रुग्ण Dedicated COVID Health Centre (Oxygen beds)मध्ये दाखल करण्यात आलेले आहेत त्यांचे डिस्चार्जसाठी खालीलप्रमाणे कार्यवाही करावी.

(अ) ज्या रुग्णांना ३ दिवस लक्षणे नाहीत आणि त्यांचे रुम एअरवर ऑक्सीजन सॅचुरेशनचे प्रमाण त्यापुढील चार दिवसांसाठी ९५ टक्के पेक्षा जास्त आहे अशा रुग्णांसाठी खालील मार्गदर्शक सूचना:

- मध्यम लक्षणे असलेल्या रुग्णांची शरिराच्या तपमानासाठी तसेच ऑक्सीजन सॅच्युरेशनसाठी तपासणी करावी.
- ज्या रुग्णांमध्ये ३ दिवसांमध्ये ताप कमी झाला आहे आणि पुढील ४ दिवस त्यांचे रुम एअरवर ऑक्सीजन सॅच्युरेशन प्रमाण ९५ टक्केपेक्षा जास्त असेल त्यांना लक्षणे सुरु झाल्यापासून १० दिवस पूर्ण झाल्यानंतर डिस्चार्ज करण्यात यावे.

डिस्चार्ज करताना पुढील बाबींची खात्री करण्यात यावी:-

- अ) तापासाठीची कोणतीही औषधे न घेता रुग्णाला ताप नसणे
- ब) श्वास घेण्यासाठी त्रास न होणे
- क) ऑक्सीजनचा पुरवठा करण्याची आवश्यकता नसणे

- या रुग्णांना डिस्चार्ज करताना प्रयोगशाळा तपासणीची आवश्यकता राहणार नाही.
- डिस्चार्जवेळी रुग्णांना घरी विलगीकरण (Home Isolation) पुढील ७ दिवसासाठी करणे आवश्यक असल्याच्या सूचना देण्यात याव्यात.
- डिस्चार्जच्या वेळी या रुग्णांना त्यांच्यामध्ये पुन्हा ताप,खोकला, श्वास घेण्यास त्रास अशी लक्षणे आढळून आल्यास कोवीड केअर सेन्टर अथवा राज्याच्या १०४ टोल फ्री क्रमांक हेल्पलाईनवर अथवा नियंत्रण कक्ष ०२० - २६१२७३९४ येथे संपर्क करण्याबाबत कळविण्यात यावे.

ब) ज्या रुग्णांमध्ये ताप ३ दिवसामध्ये कमी झाला नाही आणि ज्यांना ऑक्सीजनचा पुरवठा वरून करण्याची आवश्यकता आहे अशा रुग्णांमध्ये त्यांची लक्षणे नाहीशी झाल्यानंतर आणि वरून ऑक्सीजन न लागता ऑक्सीजनचे प्रमाण ९५ टक्के किंवा त्यापेक्षा जास्त ३ दिवस असेल तर डिस्चार्ज करावे.

३) गंभीर रुग्ण तसेच रोग प्रतिकार शक्ती कमी असलेले रुग्ण (इम्युनो कॉम्प्रमाईज/ एचआयव्ही रुग्ण / ट्रान्सप्लान्ट झालेले रुग्ण / कॅन्सरचे रुग्ण) :-

अशा रुग्णांना डिस्चार्ज करित असतांना मार्गदर्शक सूचना पुढीलप्रमाणे

- रुग्णांमध्ये कोणतीही लक्षणे आढळून न येणे
- RT-PCR पध्दतीने लक्षणे नसलेल्या रुग्णांचा एक नमुना निगेटीव्ह येणे आवश्यक आहे.
- रुग्णाची RT-PCR तपासणी लक्षणे कमी झाल्यानंतर करण्यात यावी.

सर्व रुग्णांना डिस्चार्ज करताना लक्षणे आढळून आल्यापासून डिस्चार्ज करण्यापर्यंतचा कालावधी किमान १० दिवस आहे याची खात्री करण्यात यावी.

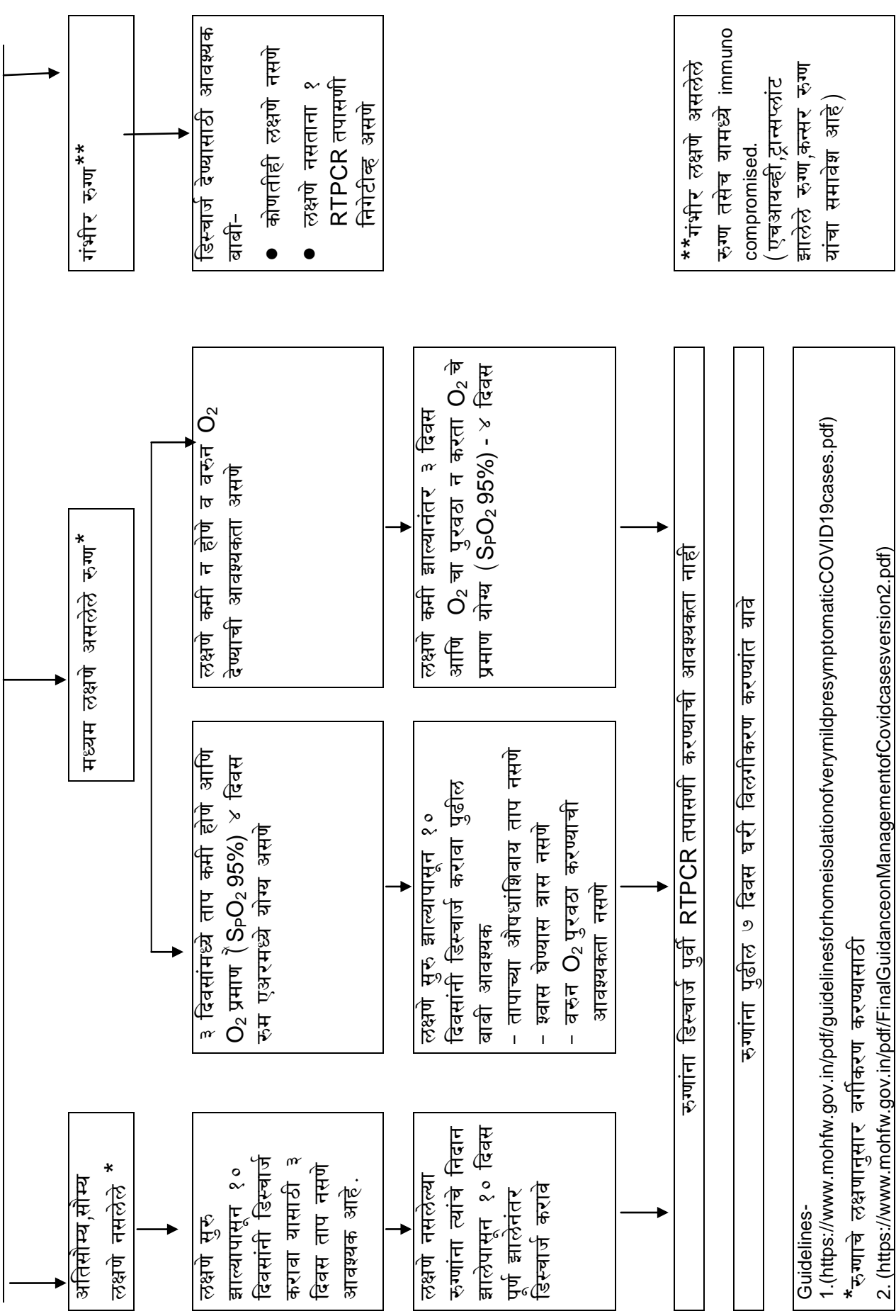
सोबत केंद्रशासनाच्या मार्गदर्शक सूचना दिलेल्या आहेत.

प्रदीप व्यास
९-५-२०२०
(डॉ. प्रदीप व्यास)

प्रधान सचिव, महाराष्ट्र शासन

प्रत मा. मुख्यमंत्री यांचे प्रधान सचिव
प्रत मा. उपमुख्यमंत्री यांचे सचिव
प्रत मा. मंत्री आरोग्य यांचे खाजगी सचिव
प्रत मा. मुख्य सचिव यांचे उपसचिव
प्रत आयुक्त, आरोग्य सेवा, मुंबई
प्रत संचालक, आरोग्य सेवा मुंबई / पुणे

सुधारित डिस्चार्ज पॉलिसी
(कोविड-१९ रुग्ण)



Guidelines-

1. (<https://www.mohfw.gov.in/pdf/guidelinesforhomeisolationofverymildpresymptomaticCOVID19cases.pdf>)

*रुग्णाचे लक्षणानुसार वर्गीकरण करण्यासाठी

2. (<https://www.mohfw.gov.in/pdf/FinalGuidanceonManagementofCovidcasesversion2.pdf>)

Revised Discharge Policy for COVID-19

The revised discharge policy is aligned with the guidelines on the 3 tier COVID facilities and the categorization of the patients based on clinical severity (Available at:

<https://www.mohfw.gov.in/pdf/FinalGuidanceonMangaementofCovidcasesversion2.pdf>)

1. Mild/very mild/pre-symptomatic cases

Mild/very mild/pre-symptomatic cases admitted to a COVID Care Facility will undergo regular temperature and pulse oximetry monitoring. The patient can be discharged after 10 days of symptom onset and no fever for 3 days. There will be no need for testing prior to discharge.

At the time of discharge, the patient will be advised to follow the home isolation for further 7 days as per guidelines available at

<https://www.mohfw.gov.in/pdf/GuidelinesforHomeIsolationofverymildpresymptomaticCOVID19cases.pdf>.

At any point of time, prior to discharge from CCC, if the oxygen saturation dips below 95%, patient is moved to Dedicated COVID Health Centre (DCHC).

After discharge from the facility, if he/she again develops symptoms of fever, cough or breathing difficulty he will contact the COVID Care Centre or State helpline or 1075. His/her health will again be followed up through tele-conference on 14th day.

2. Moderate cases admitted to Dedicated COVID Health Centre (Oxygen beds)

2.1. Patients whose symptoms resolve within 3 days and maintains saturation above 95% for the next 4 days

Cases clinically classified as “moderate cases” will undergo monitoring of body temperature and oxygen saturation. If the fever resolve within 3 days and the patient maintains saturation above 95% for the next 4 days (without oxygen support), such patient will be discharged after 10 days of symptom onset in case of:

- Absence of fever without antipyretics
- Resolution of breathlessness
- No oxygen requirement

There will be no need for testing prior to discharge.

At the time of discharge, the patient will be advised to follow the home isolation for 7 days as per guidelines available at

<https://www.mohfw.gov.in/pdf/GuidelinesforHomeIsolationofverymildpresymptomaticCOVID19cases.pdf>).

2.2. Patient on Oxygenation whose fever does not resolve within 3 days and demand of oxygen therapy continues

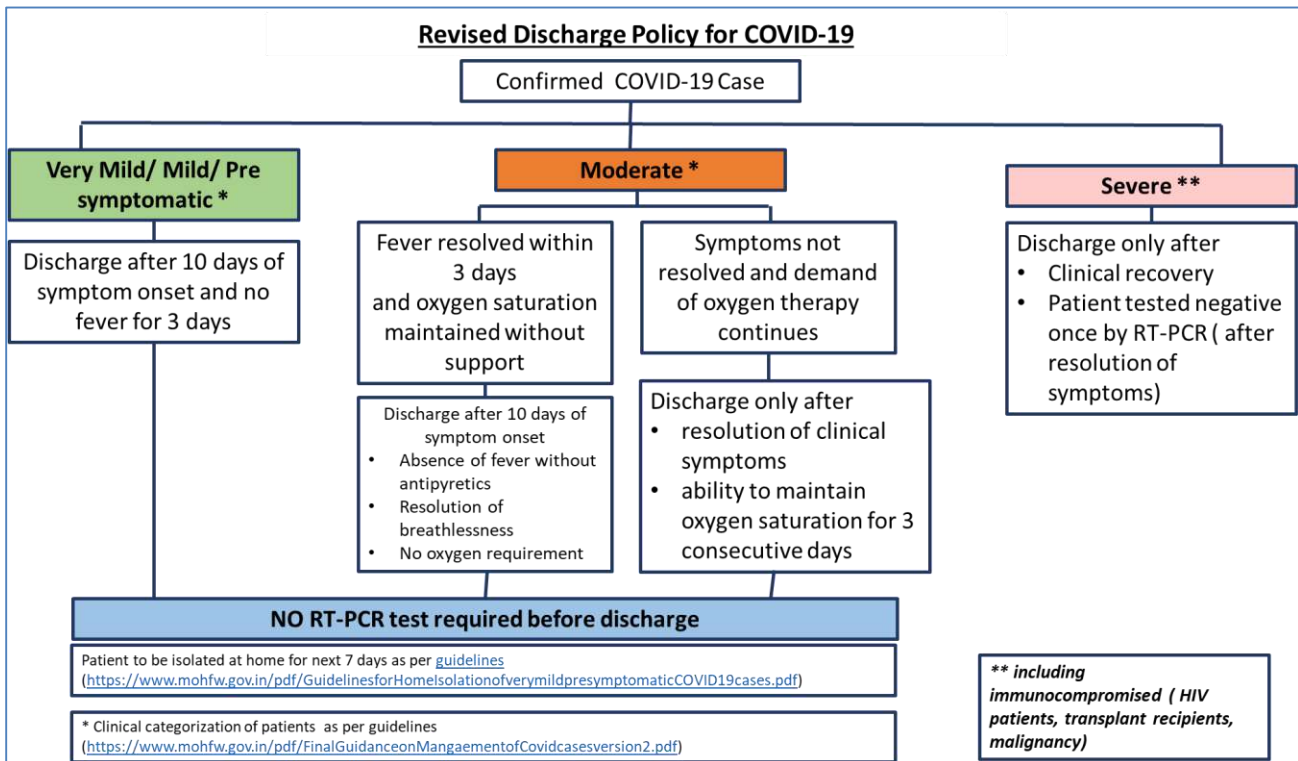
Such patients will be discharged only after

- resolution of clinical symptoms
- ability to maintain oxygen saturation for 3 consecutive days

3. Severe Cases including immunocompromised (HIV patients, transplant recipients, malignancy)

Discharge criteria for severe cases will be based on

- Clinical recovery
- Patient tested negative once by RT-PCR (after resolution of symptoms)



कोविड-१९ या महामारीच्या परिस्थितीमध्ये
मृतदेह हाताळण्याबाबत मार्गदर्शक सूचना

महाराष्ट्र शासन
सार्वजनिक आरोग्य विभाग

शासन परिपत्रक क्रमांक: संकीर्ण -२०२०/प्र.क्र.१२४/ आरोग्य -३अ
ए विंग ,१० वा मजला, गोकुळदास तेजपाल रुग्णालय संकुल इमारत
लोकमान्य टिळक मार्ग , मुंबई- ४०० ००१
दिनांक: १३ मे, २०२०.

संदर्भ-

- १) शासन परिपत्रक, गृह विभाग, क्रमांक - संकीर्ण ०४२०/प्र.क्र.५२/ विशा-१ अ , दिनांक- ०७.०४.२०२०.
- २) संचालक, आरोग्य सेवा, मुंबई यांचे क्रमांक: राआसो/ कोरोना नियंत्रण कक्ष/ मुंबई / २५४०-४१/२०२० , दि. २३.०४.२०२० चे पत्र

शासन परिपत्रक

सध्याच्या कोविड -१९ या महामारीच्या परिस्थितीमध्ये सदर आजाराने मृत झालेल्या मृतदेहाची हाताळणी करण्याबाबत. केंद्र शासनाने मृतदेह हाताळणीबाबत दि. १५/३/२०२० रोजी निर्गमित केलेल्या मार्गदर्शक सूचनांप्रमाणे राज्यातील कोविड-१९ वा तत्सम आजाराने मृत पावलेल्या व्यक्तींच्या मृतदेहाची हाताळणी करण्याबाबत केलेल्या मार्गदर्शक सूचना खालीलप्रमाणे आहेत. राज्यामध्ये ज्या ज्या रुग्णालयात कोविड-१९ वा तत्सम आजाराने व्यक्ती मृत पावल्या आहेत त्या ठिकाणी मृतदेहाची हाताळणी पुढीलप्रमाणे करण्यात यावी.

अ) विलगीकरण कक्ष किंवा अपघात विभागात मृतदेह हाताळणी-

खालील सर्व बाबी त्या ठिकाणी कर्तव्यावर असलेल्या परिसेविकेच्या देखरेखीखाली होतील . विलगीकरण कक्षातील सर्व कर्मचाऱ्यांचे infection control बाबत वेळोवेळी प्रशिक्षण घेण्यात यावे.

- १) मृतदेह हाताळणाऱ्या कर्मचाऱ्याने हात निर्जंतुक करावे व मृतदेह हाताळतांना (PPE) /व्यक्तिगत सुरक्षा साधनांचा वापर करावा.
- २) मृतदेहातील सर्व नळ्या व इतर वैद्यकीय साधने / उपकरणे सुरक्षितपणे काढावीत.
- ३) मृतदेहावरील वैद्यकीय उपचारादरम्यान तयार झालेली सर्व छिद्रे सोडियम हायपोक्लोराईट द्रवाने निर्जंतुक करावीत व त्यावर अशा प्रकारे पट्टी लावावी की त्यामधून कुठल्याही प्रकारची गळती होणार नाही.
- ४) शरीरावरील धारदार व टोकदार वैद्यकीय उपकरणे ही कडक प्लॅस्टिकच्या डब्यात (सुया .उदा) जमा करावीत.
- ५) तोंड व नाकपुड्या हयामध्ये कापूस घालावा जेणेकरून त्यामधून शारिरिक द्रव बाहेर येणार नाही.
- ६) विलगीकरण कक्षातून मृतदेह इतरत्र हलविण्या अगोदर मृत व्यक्तीच्या कुटुंबाने मृतदेह पाहण्याची इच्छा दर्शविल्यास त्यांना योग्य ती खबरदारी घेऊन मृतदेहाचे दुरून दर्शन घेण्यास परवानगी द्यावी.

कृ.मा.प.

- ७) मृतदेह प्लॅस्टिक पिशवीमध्ये (Leak proof plastic bag) अथवा रुग्णालयाने पुरवलेल्या बॅगमध्ये ठेवावा व त्या बॅगचा बाह्यभाग १% सोडियम हायपोक्लोराईटने निर्जंतुक केल्यानंतर Mortary Sheet मध्ये किंवा मृत व्यक्तीच्या कुटुंबीयांनी पुरवलेल्या कापडामध्ये गुंडाळावा.
 - ८) मृत व्यक्तीने वापरलेले कपडे व इतर वापरलेल्या वस्तु ह्या एका जैविक घातक कचरा (Bio hazardous waste) पिशवीत टाकावे व तिचा पृष्ठभाग १% सोडियम हायपोक्लोराईटने निर्जंतुक करावा.
 - ९) मृत व्यक्तीसाठी वापरलेली उपकरणे विहित केलेल्या पध्दतीनुसार निर्जंतुकीकरण यंत्राने अथवा निर्जंतुकीकरण द्रवाने स्वच्छ करून घ्यावीत. (प्रचलित जंतुसंसर्ग टाळण्याच्या प्रणालीनुसार)
 - १०) मृतदेहाशी संबंधित सर्व वैद्यकीय कचरा हा व्यवस्थित हाताळून त्याची जैविक कचरा व्यवस्थापन नियमांप्रमाणे विल्हेवाट लावावी.
 - ११) मृताच्या नातेवाईकांच्या भावनांचा आदर ठेवून त्यांना योग्य ते समुपदेशन करण्यात यावे.
 - १२) मृतदेह ताब्यात देण्यापूर्वी नातेवाईक/वारस यांना मृतदेह १ मीटर अंतरावरून दाखवावा व त्यावेळी त्यांनी वैयक्तिक संरक्षणात्मक साधन घातलेले असावे.
 - १३) जर मृत्युचे कारण हे Covid-१९ असे (सिध्द झालेले / संशयित) असेल तर मृतदेह विलगीकरण कक्षातूनच नातेवाईकांना जवळच्या स्मशानभूमीत अंत्यविधीसाठी परस्पर हस्तांतरित करावा किंवा काही अडचण असल्यास /नातेवाईक उपलब्ध नसल्यास / वारसदार विलगीकरण कक्षात भरती असल्यास शवगृहात राखून ठेवावा. कोणत्याही परिस्थितीत मृतदेहाचे जतन नातेवाईकांनी करून नये.
 - १४) ज्या आरोग्य कर्मचाऱ्याने मृतदेह हाताळलेला आहे त्यांनी त्यांचे वापरलेली वैयक्तिक संरक्षणात्मक साधने (PPE) लाल पिशवीत टाकावीत व हात स्वच्छ धुवून घ्यावेत.
 - १५) शव बांधण्याकरिता नातेवाईकांची मदत घेऊ नये.
- ब) शवकक्ष सेवक / कर्मचारी यांनी कोरोना बाधित किंवा संशयित मृतदेह शवगृहामध्ये हाताळताना घ्यावयाची खबरदारी-
- १) मृतदेह हाताळणारे शवगृहातील सर्व कर्मचारी यांना वेळोवेळी जंतुसंसर्ग टाळण्याचे प्रशिक्षण देण्यात घ्यावे.
 - २) सर्व संबंधित कर्मचारी यांनी सर्व प्रकारची व्यक्तिगत संरक्षणात्मक साधने उदा. मास्क, हातमोजे इत्यादी वापरावीत.
 - ३) जर मृत्यु Covid-१९ आजारामुळे झाल्याचे निदान झालेले असेल तर तो मृतदेह विलगीकरण कक्षातूनच नातेवाईकांच्या ताब्यात परस्पर देण्यात यावा, तत्पूर्वी स्थानिक पोलिस ठाण्यात कळवावे व त्याची नोंद ठेवावी.
 - ४) शवगृहातील काही बॉक्सेस हे Covid-१९ निधन झालेल्या मृतदेहासाठी राखून ठेवावेत व त्या बॉक्सेसवर सुस्पष्ट अक्षरात नामांकन करावे.
 - ५) मृतदेह शवगृहात ०४ डिग्री से.तापमानात ठेवावा .
 - ६) शवागृह व त्यांच्या आजुबाजूचा परिसर स्वच्छ ठेवावा.
 - ७) शवागृहातले पृष्ठभाग, उपकरणे व मृतदेह ने-आण करण्यासाठी वापरात येणारी ट्रॉली हे १% सोडियम हायपोक्लोराईटने निर्जंतुक करावे.
 - ८) मृतदेह, शव परिक्षणासाठी काढल्यानंतर सदरील रॅक, त्याचे हँडल व आतील पृष्ठभाग १% सोडियम हायपोक्लोराईटने निर्जंतुक करावे.

- ९) मृताच्या नातेवाईकांनी मृतदेहाचा चेहरा पाहण्याची इच्छा व्यक्त केली तर योग्य ती सर्व खबरदारी घेऊन विलगीकरण कक्षातच दुरून चेहरा पाहण्याची परवानगी द्यावी.
- १०) मृतदेहावर कोणत्याही प्रकारचे चिन्हांकन करण्यात येऊ नये.
- क) शववाहिनी चालकाने Covid-१९ मृतदेह बाधित किंवा संशयित मृतदेह हाताळताना घ्यावयाची खबरदारी.
- १) शववाहिनी चालक व त्याचा मदतनीस यांना जंतुसंसर्ग टाळण्याचे प्रशिक्षण वेळोवेळी देण्यात यावे व त्यांनी सुध्दा स्वतःला प्रशिक्षित करून घ्यावे.
- २) चालक व त्याचा मदतनीस यांनी वैयक्तिक संरक्षणात्मक साधने घालावे. (उदा. हातमोजे इत्यादी.)
- ३) चालकाने नेहमी अधिकचे संरक्षात्मक साधन आपल्या गाडीत ठेवावे. त्यांना सुदृढ मृतदेह उचलण्यासाठी नातेवाईकांची मदत लागू शकते. अशावेळी ती उपयोगी पडतील.
- ४) मृतदेह अंतिम विधीसाठी पोहचविल्यानंतर शववाहिनीचा आतील भाग व मृतदेह ने-आण करण्याची ट्राली याचे तात्काळ १ टक्के सोडीयम हायपोक्लोराईटने निर्जुतुकीकरण करावे.
- ड) शववाहिनीतून मृतदेहाची पाठवणी करतांना घ्यावयाची काळजी-
- १) जर व्यक्ती कोरोना विषाणुमुळे मृत झालेला असेल तर मृतदेहाची विल्हेवाट लावण्यासाठी शववाहिनीतून अंत्यविधीच्या ठिकाणी मृतदेह लगेचच नेण्याची तयारी करावी. (मृतदेहास कुठल्याही परिस्थितीत घरी नेण्यात येवू नये) स्थानिक प्रशासनाने याबाबत नियमित सुचनांचे तंतोतंत पालन करावे व नातेवाईकांना तेथे पोहोचण्यासाठी सांगण्यात यावे.
- २) मृतदेहाची ओळख फक्त वारसदार किंवा त्यांनी नेमून दिलेल्या व्यक्तींनी पटवून घ्यावी व त्यावेळी वैयक्तिक संरक्षणात्मक साधन वापरावीत व सुरक्षित अंतरावरून निरीक्षण करावे.
- ३) शववाहिनी आल्यानंतर मृतदेह स्विकारताना तो कपडयामध्ये व्यवस्थित कापडामध्ये गुंडाळलेल्या व सोडीयम हायपोक्लोराईटने (१ टक्के) ने निर्जुतक करून घेतलेल्या प्लास्टीकच्या आवरणात स्विकारावा/ ताब्यात घ्यावा.
- ४) मृतदेह स्विकारल्यानंतर लगेचच शववाहिनीत ठेवावा.
- इ) मृतदेहाची विल्हेवाट लावण्याच्या ठिकाणी अंत्यविधीच्या वेळी घ्यावयाची काळजी.
- १) नातेवाईकांना मृतदेहाच्या चेहऱ्याचे शेवटचे दर्शन देण्यासाठी प्लॅस्टिक बॅग उघडू नये, त्याची कर्मचाऱ्यांने / नातेवाईकांनी आवश्यक ती दक्षता घ्यावी. चेहऱ्याचे दर्शन एक मिटर दुरूनच घ्यावे.
- २) अंत्यविधीच्या वेळी धार्मिक मंत्र पठण करणे किंवा दुरून पवित्र पाणी शिंपडणे किंवा इतर धार्मिक विधी दुरून करण्यास मुभा राहिल.
- ३) मृतदेहाला अंघोळ घालणे, चुंबन घेणे, मिठी मारणे, तोंडात पाणी सोडणे इत्यादी बाबींस प्रतिबंध राहिल.
- ४) अंत्यविधीसाठी उपस्थित असलेल्या नातेवाईकांनी परस्परांमध्ये किमान एक मीटरचे अंतर ठेवावे.
- ५) अंत्यविधीनंतर सर्वांनी हात स्वच्छ धुवून निर्जुतक करून घ्यावेत.
नातेवाईकांनी अंत्यविधीवेळी जास्त गर्दी करू नये व परस्परांमध्ये अंतर ठेवावे कारण नातेवाईकांपैकी किंवा कुटुंबातील व्यक्तींना संसर्ग झालेला असू शकतो किंवा ते विषाणूचा प्रसार करण्यास कारणीभूत ठरू शकतात.

६) अंत्यविधीच्या ठिकाणी निर्माण झालेला जैविक कचरा इतर कोठेही टाकू नये. जंतुसंसर्ग टाळण्यासाठी त्याची विल्हेवाट जैविक कचरा व्यवस्थापन नियमाप्रमाणे लावावी.

ई) अंत्यविधीनंतर घ्यावयाची काळजी.

- १) मृतदेहाची राख गोळा करण्याने विषाणू संसर्गाचा कुठल्याही प्रकारचा धोका उद्भवत नाही.
- २) मृताचे कपडे नष्ट करावेत किंवा जाळून टाकावेत किंवा जैविक कचरा विल्हेवाट नियमाप्रमाणे स्मशानभूमी / कब्रस्तानमध्ये / सिमेंटेरीमध्ये त्यांची विल्हेवाट लावावी.
- ३) स्मशानभूमी / कब्रस्तान/ सिमेंटेरी सोडण्यापूर्वी सर्वांनी स्वच्छ हात धुवून घ्यावेत. कुटुंबातील सर्व व्यक्ती नातेवाईक व मित्रमंडळी जी मयताच्या शेवटच्या चौदा दिवसाचा काळात मृतव्यक्तीच्या अधिक संपर्कात होते अशांनी जवळच्या शासकिय आरोग्य केंद्रास भेट देऊन वैद्यकिय सल्ला व मदत व उपचार घ्यावेत.

महाराष्ट्राचे राज्यपाल यांच्या आदेशानुसार व नावाने.

Pradeep Vyasa
(डॉ. प्रदीप व्यास) 12-5-2020
प्रधान सचिव

प्रत,

१. मा.राज्यपालांचे सचिव, राजभवन, मलबार हिल, मुंबई.
२. मा. मुख्यमंत्री यांचे अपर मुख्य सचिव
३. सर्व मा.मंत्री/ मा.राज्यमंत्री यांचे खाजगी सचिव
४. मा.विरोधी पक्षनेता, विधानसभा/ विधानपरिषद, महाराष्ट्र विधानमंडळ सचिवालय, मुंबई.
५. सर्व विधानसभा / विधानपरिषद सदस्य, महाराष्ट्र विधानमंडळ
६. मा.महाअधिवक्ता, महाराष्ट्र राज्य.
७. सर्व अपर मुख्य सचिव/प्रधान सचिव/ सचिव, मंत्रालय, मुंबई.
८. सर्व विभागीय आयुक्त
९. सर्व जिल्हाधिकारी, जिल्हाधिकारी कार्यालय
१०. आयुक्त, सर्व महानगरपालिका
११. पोलीस महासंचालक, महाराष्ट्र राज्य, मुंबई.
१२. सर्व पोलीस आयुक्त
१३. सर्व पोलीस अधिक्षक
१४. संचालक, आपती व्यवस्थापन प्रभाग, मंत्रालय, मुंबई.
१५. आयुक्त (आरोग्य सेवा) तथा अभियान संचालक, राष्ट्रीय आरोग्य अभियान, मुंबई
१६. संचालक, आरोग्य सेवा-१, मुंबई.
१७. संचालक, आरोग्य सेवा-२, पुणे.
१८. अतिरिक्त संचालक, आरोग्य सेवा, राज्य कुटुंब कल्याण कार्यालय, पुणे.
१९. उप संचालक, आरोग्य सेवा, सर्व मंडळे.
२०. सर्व जिल्हा शल्य चिकित्सक.
२१. निवडनस्ती (आरोग्य-३)

कोवीड -१९ च्या पार्श्वभूमीवर राज्यात Task Force on
AYUSH for COVID-१९ गठीत करण्यास मान्यता प्रदान
करण्याबाबत.

महाराष्ट्र शासन

वैद्यकीय शिक्षण व औषधी द्रव्ये विभाग

शासन निर्णय क्रमांक: वैशिवि-२०२०/प्र.क्र.८१/२०/वैसेवा-३

गोकुळदास तेजपाल रुग्णालय आवार, ९ वा मजला, लोकमान्य टिळक मार्ग, मुंबई-१,
दिनांक:- १३ मे, २०२०.

वाचा:- आयुष संचालनालय, महाराष्ट्र राज्य, मुंबई यांचे पत्र क्र.आसंमुं / Task Force on AYUSH/
COVID-१९ / २०२०/आयु-२/५०७६ दि. १२.५.२०२०

प्रस्तावना:-

कोवीड-१९ या संसर्गजन्य आजाराच्या वाढत्या प्रादुर्भावाच्या पार्श्वभूमीवर जनतेची रोग प्रतिकारशक्ती वाढविणे त्याचप्रमाणे कोवीड-१९ आजाराने ग्रस्त अलाक्षणिक (Asymptomatic) तसेच अल्पलाक्षणिक (Mild Symptomatic) रुग्णांवरील उपचाराकरीता आयुष अंतर्गत असलेल्या आयुर्वेद, होमीओपॅथी, युनानी व योग चिकित्सा पध्दतीचा अवलंब गुजरात, पंजाब, मध्यप्रदेश, केरळा, गोवा इत्यादी राज्यांमध्ये यशस्वीरीत्या करण्यात आला आहे. यासंदर्भात केंद्र सरकारच्या आयुष मंत्रालयाने देखील वेळोवेळी सुचना निर्गमित केल्या आहेत. ही वस्तुस्थिती विचारात घेऊन महाराष्ट्र राज्यात देखील आयुष अंतर्गत असलेल्या उपरोक्त पध्दतींचा वापर करण्याची बाब शासनाच्या विचाराधीन होती. त्यानुसार आयुष संचालनालय, महाराष्ट्र राज्य, मुंबई यांनी संदर्भाधीन दि. १२.५.२०२० च्या पत्रान्वये Task Force on AYUSH for COVID-१९ गठीत करण्याबाबतचा प्रस्ताव शासनास सादर केला आहे. या प्रस्तावावर खालीलप्रमाणे निर्णय घेण्यात आला आहे.

शासन निर्णय:-

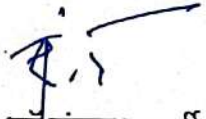
महाराष्ट्र राज्यात कोवीड-१९ या संसर्गजन्य आजाराच्या वाढत्या प्रादुर्भावाच्या पार्श्वभूमीवर जनतेची रोग प्रतिकारशक्ती वाढविणे त्याचप्रमाणे कोवीड-१९ आजाराने ग्रस्त अलाक्षणिक (Asymptomatic) तसेच अल्पलाक्षणिक (Mild Symptomatic) रुग्णांवरील उपचाराकरीता आयुष अंतर्गत असलेल्या आयुर्वेद, होमीओपॅथी, युनानी व योग चिकित्सा पध्दतीचा अवलंब करणे याकरीता खालीलप्रमाणे Task Force on AYUSH for COVID-१९ गठीत करण्यास शासनाची मान्यता प्रदान करण्यात येत आहे.

अ.क्र.	नाव व पदनाम	समितीमधील पद	विशेष अनुभव
१	डॉ. तात्याराव लहाने, संचालक, वैद्यकीय शिक्षण व संशोधन मुंबई	अध्यक्ष	संचालक, वैद्यकीय शिक्षण व संशोधन मुंबई
२	डॉ. कुलदीप राज कोहली, संचालक, आयुष संचालनालय, महाराष्ट्र राज्य, मुंबई	सह अध्यक्ष	संचालक, आयुष संचालनालय, महाराष्ट्र राज्य, मुंबई तथा ज्येष्ठ चिकित्सक
३	डॉ. सुभाष घोलप, सहायक संचालक, आयुष, राष्ट्रीय आरोग्य अभियान, महाराष्ट्र राज्य, मुंबई	सचिव	सहायक संचालक, आयुष, राष्ट्रीय आरोग्य अभियान, महाराष्ट्र राज्य, मुंबई
४	डॉ. शुभा राऊळ, माजी महापौर, बृहन्मुंबई महानगरपालिका	सदस्य	माजी महापौर, बृहन्मुंबई महानगरपालिका तथा ज्येष्ठ चिकित्सक
५	डॉ. हरीश बी. सिंग, आयुर्वेद चिकित्सक व प्राध्यापक, कायचिकित्सा विभाग, श्रीमती के.जी.एम.पी. आयुर्वेद महाविद्यालय, चर्नीरोड मुंबई	सदस्य	ज्येष्ठ चिकित्सक. HIV वर उल्लेखनीय काम
६	डॉ. उदय कुलकर्णी, आयुर्वेद चिकित्सक तसेच संस्थापक व सीईओ. डॉक्टर कुलकर्णीज आरोग्यधाम, घंटाळी ठाणे	सदस्य	ज्येष्ठ चिकित्सक व संस्थापक, खाजगी आयुर्वेद रुग्णालय
७	डॉ. संजय तामोळी, सीईओ, अभिनव फार्मा तथा संचालक, Target Institute of Medical Education and Research, Mumbai	सदस्य	चिकित्सालयीन चाचणी तज्ञ व आयुर्वेद औषधी निर्माता
८	डॉ. जवाहर शाह, होमीओपॅथी चिकित्सक व संस्थापक, Mind Technologies and Welcome Cure, Mumbai	सदस्य	ज्येष्ठ होमीओपॅथी चिकित्सक
९	डॉ. जसवंत पाटील, MBBS, MD (Chest Medicine) व होमीओपॅथी तज्ञ, मुंबई	सदस्य	ज्येष्ठ होमीओपॅथी चिकित्सक व Chest Physician

१०	डॉ. झुबेर शेख, युनानी चिकित्सक तथा माजी उपाध्यक्ष, भारतीय चिकित्सा केंद्रीय परिषद	सदस्य	ज्येष्ठ युनानी चिकित्सक
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२. उपरोक्त प्रमाणे गठीत करण्यात आलेल्या Task Force on AYUSH for COVID-१९ या समितीचे प्रमुख कार्य राज्यशासनाला तसेच राज्यातील आरोग्य यंत्रणेतील जबाबदार अधिकाऱ्यांना महाराष्ट्र राज्यात कोवीड-१९ या संसर्गजन्य आजाराच्या वाढत्या प्रादुर्भावाच्या पार्श्वभूमीवर जनतेची रोग प्रतिकारशक्ती वाढविणे त्याचप्रमाणे कोवीड-१९ आजाराने ग्रस्त अलाक्षणिक (Asymptomatic) तसेच अल्पलाक्षणिक (Mild Symptomatic) रुग्णांवरील उपचाराकरीता आयुष अंतर्गत असलेल्या आयुर्वेद, होमीओपॅथी, युनानी व योग चिकित्सा पध्दतीचा अवलंब करणे याबाबत सल्ला / सुचना देणे असे असेल.

महाराष्ट्राचे राज्यपाल यांच्या आदेशानुसार व नावाने,


(डॉ. संजय मुखर्जी)
महाराष्ट्र शासनाचे सचिव

प्रति,

१. प्रधान सचिव, मा. मुख्यमंत्री सचिवालय, मंत्रालय, मुंबई.
२. मा. उपमुख्यमंत्री, मंत्रालय, मुंबई यांचे खाजगी सचिव
३. सर्व मा. मंत्री / राज्यमंत्री यांचे खाजगी सचिव, मंत्रालय, मुंबई
४. उपसचिव, मा. मुख्यसचिव कार्यालय, मंत्रालय, मुंबई.
५. प्रधान सचिव, सार्वजनिक आरोग्य विभाग, मंत्रालय, मुंबई.
६. प्रधान सचिव, मंत्रालय कोरोना नियंत्रण कक्ष, मंत्रालय मुंबई.
७. प्रधान सचिव, नगरविकास विभाग, मंत्रालय, मुंबई.
८. सचिव, वैद्यकीय शिक्षण विभाग, मंत्रालय, मुंबई यांचे वरिष्ठ स्विय सहायक
९. संचालक, वैद्यकीय शिक्षण व संशोधन, मुंबई / संचालक, आरोग्य सेवा, मुंबई / संचालक, आयुष संचालनालय, महाराष्ट्र राज्य, मुंबई / आयुक्त, सर्व महानगरपालिका / सर्व विभागीय आयुक्त / सर्व जिल्हाधिकारी यांना विनंती करण्यात येते की सदर शासन निर्णय आपल्या अधिपत्याखालील संस्थांच्या तसेच खाजगी रुग्णालयांच्या निदर्शनास आणण्यात यावेत. यातील मार्गदर्शक सूचनांची काटेकोर अमंलबजावणी करण्याबाबत आपल्या स्तरावरून योग्य तो पाठपुरावा करण्यात यावा.
१०. डॉ. सुभाष घोलप, सहायक संचालक, आयुष, राष्ट्रीय आरोग्य अभियान, महाराष्ट्र राज्य, मुंबई
११. डॉ. शुभा राऊळ, माजी महापौर, बृहन्मुंबई महानगरपालिका

१२. डॉ. हरीश बी. सिंग, आयुर्वेद चिकित्सक व प्राध्यापक, कायचिकित्सा विभाग, श्रीमती के.जी.एम.पी. आयुर्वेद महाविद्यालय, चर्नीरोड मुंबई
१३. डॉ. उदय कुलकर्णी, आयुर्वेद चिकित्सक तसेच संस्थापक व सीईओ. डॉक्टर कुलकर्णीज आरोग्यधाम, घंटाळी ठाणे
१४. डॉ. संजय तामोळी, सीईओ, अभिनव फार्मा तथा संचालक, Target Institute of Medical Education and Research, Mumbai
१५. डॉ. जवाहर शाह, होमीओपॅथी चिकित्सक व संस्थापक, Mind Technologies and Welcome Cure, Mumbai
१६. डॉ. जसवंत पाटील, MBBS, MD (Chest Medicine) व होमीओपॅथी तज्ञ, मुंबई
१७. डॉ. झुबेर शेख, युनानी चिकित्सक तथा माजी उपाध्यक्ष, भारतीय चिकित्सा केंद्रीय परिषद
१८. निवडनस्ती वैसेवा-३

कोव्हीड-१९ च्या पार्श्वभूमीवर राज्यात Task Force on AYUSH for COVID-१९ गठीत करण्यास मान्यता प्रदान करण्याबाबत.

महाराष्ट्र शासन
वैद्यकीय शिक्षण व औषधी द्रव्ये विभाग
शासन निर्णय क्रमांक: वैशिचि-२०२०/प्र.क्र.८१/२०/वैसेवा-३
गोकुळदास तेजपाल रुग्णालय आवार, ९ वा मजला, लोकमान्य टिळक मार्ग, मुंबई-१
दिनांक :- १४ मे, २०२०

वाचा :- १) शासन निर्णय वैद्यकीय शिक्षण व औषधी द्रव्ये विभाग, समक्रमांक दिनांक १३/०५/२०२०
२) संचालक, आयुष संचालनालय, महाराष्ट्र राज्य, मुंबई यांचे पत्र क्र.आसुंमुं/ Task For on AYUSH/ Corona Virus (Covid-१९) २०२०/आयु-२, दिनांक १४/०५/२०२०


पुरकपत्र :-

संदर्भ क्र.१ येथील शासन निर्णयान्वये महाराष्ट्र राज्यात कोव्हीड-१९ या संसर्गजन्य आजाराच्या वाढत्या प्रादुर्भावाच्या पार्श्वभूमीवर जनतेची रोगप्रतिकार शक्ती वाढविणे तसेच कोव्हीड-१९ आजाराने ग्रस्त अलाक्षणिक (Asymptomatic) तसेच अल्पलाक्षणिक (Mild Symptomatic) रुग्णावरील उपचाराकरीता आयुष अंतर्गत असलेल्या अयुर्वेद, होमियोपॅथी, युनानी व योग चिकित्सा पध्दतीचा अवलंब करणे याकरीता Task Force on AYUSH for COVID-१९ चे गठण करण्यात आले आहे.

२. उपरोक्तप्रमाणे गठीत करण्यात आलेल्या समितीचे कामकाज अधिक परिणामकारक होण्यासाठी आयुष संचालनालय, महाराष्ट्र राज्य, मुंबई यांनी संदर्भ क्र.२ येथील पत्रान्वये प्रस्तावित केल्याप्रमाणे सदर समितीत खालील आणखी २ तज्ञ व्यक्तींचा समितीचे सदस्य म्हणून समावेश करण्यास शासनाची मान्यता प्रदान करण्यात येत आहे.

अ.क्र.	नांव	समितीमधील पद	विशेष अनुभव
१	डॉ. मनोज राका	सदस्य	होमिओपॅथिक तज्ञ, आळंदी, पुणे
२	डॉ. अमित दवे	सदस्य	आयुर्वेदाचार्य, आयुर्वेदिक औषध निर्माता, पनवेल

३. संदर्भ क्र.१ येथील शासन निर्णयातील इतर सर्व तरतुदी कायम राहतील.


(डॉ. संजय मुखर्जी)
महाराष्ट्र शासनाचे सचिव

प्रति,

१. प्रधान सचिव, मा. मुख्यमंत्री सचिवालय, मंत्रालय, मुंबई.
२. मा. उप मुख्यमंत्री, मंत्रालय, मुंबई यांचे खाजगी सचिव.
३. सर्व मा. मंत्री/राज्यमंत्री यांचे खाजगी सचिव, मंत्रालय, मुंबई

४. उपसचिव, मा. मुख्य सचिव कार्यालय, मंत्रालय, मुंबई.
५. प्रधान सचिव, सार्वजनिक आरोग्य विभाग, मंत्रालय, मुंबई.
६. प्रधान सचिव, मंत्रालय कोरोना नियंत्रण कक्ष, मंत्रालय, मुंबई.
७. प्रधान सचिव, नगरविकास विभाग, मंत्रालय, मुंबई.
८. सचिव, वैद्यकीय शिक्षण व औषधी द्रव्ये विभाग यांचे स्वीय सहाय्यक.
९. संचालक, वैद्यकीय शिक्षण व संशोधन, मुंबई / संचालक, आरोग्य सेवा, मुंबई / संचालक, आयुष संचालनालय, महाराष्ट्र राज्य, मुंबई / आयुक्त, सर्व महानरपालिका / सर्व विभागीय आयुक्त / सर्व जिल्हाधिकारी यांना विनंती करण्यात येते की, सदर शासन निर्णय आपल्या अधिपत्याखालील संस्थांच्या तसेच खाजगी रुग्णालयांच्या निदर्शनास आणण्यात यावेत. यातील मार्गदर्शक सूचनांची काटेकोर अंमलबजावणी करण्याबाबत आपल्या स्तरावरून योग्य तो पाठपुरावा करण्यात यावा.
१०. डॉ. मनोज राका, सदस्य, होमिओपॅथिक तज्ञ, आळंदी, पुणे.
११. डॉ. अमित दवे, सदस्य, आयुर्वेदाचार्य, आयुर्वेदिक औषध निर्माता, पनवेल.

Government of Maharashtra

No.:- Corona-2020/CR No. 86/Aarogya-5
Public Health Department
G T Hospital Complex Building
10 th Floor, Mantralaya, Mumbai 01
Date : 16.05.2020

To,

- 1) District Collector (All)
- 2) Commissioner, Municipal Corporation (All)
- 3) Civil Surgeon (All)
- 4) District Health Officer (All)


Sub:- Recommendation of Task Force on patient management protocol for serious and critically ill Covid-19 patients.

The Task Force of Specialist Doctors in Private Hospitals of Mumbai was constituted to recommend the patient management protocol for serious and critically ill Covid-19 patients vide Government order dated 13.04.2020.

The Task Force has given its recommendations regarding COVID treatment guideline, EMS, Covid-19 ICU management, kidney and dialysis guideline, protocol for COVID positive pregnant ladies, diabetic patients and hypertensive patients, discharge protocol etc. The copy of report with annexures is attached herewith for guidance and necessary action.

In case of acute emergency while treating serious and critical Covid-19 patient Senior Doctors (Incharge) can avail the facility of hotline numbers as earlier circulated to take guidance from Task Force Specialist.

Certain guidelines (issued by GOI/ICMR or GOM) may change during the course of time as COVID-19 is an evolving disease so in case any of these task force guidelines come in conflict with GoI / ICMR / GoM guidelines, please seek clarification from Director Health Services, Pune or Public Health department in the State Government.


(Dr. Pradeep Vyas)
Principal Secretary,
Public Health Department

Encl : As above.

Copy to,

- 1) Commissioner, Health Services and MD, NRHM, Mumbai.
- 2) Director, Health Services, Mumbai and Pune.
- 3) Dr. Oak, Chairman of Task Force.

9/24/19



Recommendations of Task Force on Patients
Management Protocol for Serious and
Critically ill Covid-19 Patients

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990/4

1. Order of Task Force

GOVERNMENT OF MAHARASHTRA
Public Health Department
G. T. Hospital Complex Bldg. - 10th Fl.,
New Marolayya, Mumbai - 400 001

No. CORONA-202/CRSB/2020/Aa-5, dated 13th April, 2020

GOVERNMENT ORDER

Reference:

1. The Epidemic Diseases Act, 1897,
2. The Disaster Management Act, 2005,
3. Government Notification Revenue and Forest Department,
Disaster Management, Relief and Rehabilitation dated. 13/04/2020

TASK FORCE TO RECOMMEND "PATIENTS MANAGEMENT PROTOCOL" FOR SERIOUS & CRITICALLY ILL COVID - 19 PATIENTS IN COVID - 19 CRITICAL CARE HOSPITALS

1. Whereas it has been noticed that large number of COVID-19 cases are being detected in Mumbai Municipal Corporation area and also the death rate in COVID-19 positive patients in Mumbai and Mumbai Metropolitan Region is higher than the State and National average. Hence, it has been decided to constitute a Task Force of Specialist Doctors to suggest measures to minimize the death rate and suggest measures for clinical management of COVID-19 patients particularly critically ill COVID-19 patients and further to treat such critically ill COVID-19 patients in specialized designated six hospitals, which shall be designated as "COVID - 19

Critical Care Hospitals":

- a. Dr. Balaibhai Nanavati Hospital
- b. St. George Hospital
- c. Saifee Hospital
- d. Wockhardt Hospital
- e. Hindu Hriday Samrat Balasaheb Thackeray Hospital
- f. Seven Hills Hospital

2. The Task Force shall consist of following Specialist Doctors:

- | | |
|--|----------|
| 1. Dr. Sanjay Oak, | Chairman |
| 2. Dr. Zahir Udhwadia , P.D. Hinduja Hospital | Member |
| 3. Dr. Santoshi Nagvokar, Lilavati Hospital | Member |
| 4. Dr. Kedar Toraskar, Wockhardt Hospital | Member |
| 5. Dr. Rahul Pandit, Fortis Hospital | Member |
| 6. Dr. Nitin Kamik, Lokmanya Tilak Hospital, Sion, | Member |
| 7. Dr. Zahir Virani, (Nephrology) PAKH | Member |
| 8. Dr. Om Srivastav, Kasturba, Jashik | Member |
| 9. Dr. Praveen Bangar, KEM Hospital | Convener |

3. The Task Force will have following Terms of Reference :

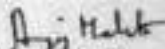
- a. To establish "PATIENTS MANAGEMENT PROTOCOL" for Serious & Critically ill COVID - 19 Patients;
- b. To recommend the requirements of Specialist Doctors and health care support staff in the above identified COVID - 19 Critical Care hospitals;
- c. To recommend suitable drug protocol to maintain uniformity in treating critically ill COVID - 19 patients;
- d. To recommend Criteria & logistics requirement to transfer critical patients, if needs be from different hospitals in Mumbai to the intensive Care Units of these or other short listed hospitals;
- e. Any other, as may be decided by the Chairman of the Task Force.

4. The office of the above task force will be Dr. Pravin Bangar, Board Room, Dean Office, College Building, KEM Hospital, Parel, Mumbai 400 012, Land Line 022 24107020/022 24107862, E-mail drpravinbangar01@gmail.com.

5. The Task Force shall submit its recommendations to the Hon. Chief Minister on urgent basis.

6. Shri Saurabh Vijay, Secretary, Higher and Technical Education Department, Room No. 411, Mantralaya, Annexe, Mumbai 400 032, Landline No. 022 22025301 shall coordinate the functioning of above Task Force from Mantralaya.

By order and in the name of the Governor of Maharashtra.


(Ajoy Mehta)
Chief Secretary
Govt. of Maharashtra

Copy to:

Municipal Commissioner Mumbai.
Principal Secretary to Chief Minister, Mantralaya, Mumbai
Principal Secretary, Public Health Maharashtra, Mantralaya, Mumbai
Secretary, Medical Education Department, Mantralaya, Mumbai
Commissioner Health and MD NHM, Aarogya Bhavan,
DHS-I / DHS-II

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GOVERNMENT OF MAHARASHTRA
Public Health Department
G. T. Hospital Complex Bldg., 10th Flr.,
New Mantralaya, Mumbai 400 001

No. CORONA-202/CR58/2020/Aa-5, dated April, 2020

GOVERNMENT ORDER

Reference :

1. The Epidemic Diseases Act, 1897,
2. The Disaster Management Act, 2005,
3. Government Notification Revenue and Forest Department, Disaster Management, Relief and Rehabilitation dated. 13/04/2020
4. Government Order No. CORONA-202/CR-58/2020/Aa-5, Dated 13.04.2020

TASK FORCE TO RECOMMEND "PATIENTS MANAGEMENT PROTOCOL" FOR SERIOUS & CRITICALLY ILL COVID – 19 PATIENTS in COVID – 19 CRITICAL CARE HOSPITALS

1. Vide Government Order at reference No.4, Task Force of Specialist Doctors to suggest measures to minimize the death rate and suggest measures for clinical management of Critically ill COVID-19 patients has been constituted. Following Specialist doctors are now also included in this Task Force as a member:-

1. Dr. Shashank Joshi Member
2. Dr. Khusrav Bajaj Member

In Government order mentioned in Reference No.4, at Sr.No.3, the corrected name Dr. Vasant Nagvekar please be read instead of Dr. Santoshi Nagvekar.

By order and in the name of the Governor of Maharashtra.

(Ajoy Mehta)
Chief Secretary
Govt. of Maharashtra

Copy to:

- Municipal Commissioner Mumbai.
- Principal Secretary to Chief Minister, Mantralaya, Mumbai
- Principal Secretary, Public Health Maharashtra, Mantralaya, Mumbai
- Secretary, Medical Education Department, Mantralaya, Mumbai
- Commissioner Health and MD NHM, Aarogya Bhavan,
- DHS-I / DHS-II

Control Centre (Mumbai) / Corona Task Force (Mumbai)

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2. Minutes of Meeting

MAHARASHTRA TASK FORCE COVID-19
SPECIALISTS DOCTORS' MEETING.
13th April 2020.

PARTICIPANTS:

1. Hon. Shri Uddhav Thackeray, Chief Minister, Maharashtra State
2. Shri Ajoy Mehta, Chief Secretary, Maharashtra State
3. Shri Praveen Pardeshi, Municipal Commissioner, Greater Mumbai Municipal Corporation
4. Shri Ashish Kumar Singh, Principal Secretary to CM
5. Dr. Pradeep Kumar Vyas, Principal Secretary Public Health Department, GoM
6. Shri Vikas Kharge, Principal Secretary to CM
7. Dr. Sanjay Mukherjee, Secretary, Medical Education and Drugs Department, GoM
8. Shri Saurabh Vijay, Secretary, Higher and Technical Education Department, GoM
9. Smt. Prajakta Lavangare, Secretary, Marathi Bhasha Department, GoM
10. Dr. Sanjay Oak
11. Dr. Zarir Udawadia
12. Dr. Shashank Joshi
13. Dr. Vasant Nagvekar
14. Dr. Kedar Toraskar
15. Dr. Rahul Pandit
16. Dr. Zaheer Virani
17. Dr. Nitin Karnik
18. Dr. Om Srivastava
19. Dr. Praveen Bangar
20. Dr. Subhash Salunke

1. Hon. CM opened the meeting highlighting the issues in Covid-19 spread. There is concern about the death rate among critical Covid-19 patients. Hon. CS outlined the formation of the Task Force and set the objectives of the meeting.
2. Dr. Sanjay Oak, Chairperson of the Task Force outlined the objectives of the task force as:
 - a) To separate a list of COVID hospitals from Non COVID ones.
 - b) To arrive at consensus for treatment protocols of critically ill patient.
 - c) Discuss the availability of new antiviral Drugs.
 - d) Monitoring parameters to stratify the risks in patients.
 - e) Communication with medical professionals as well as common people
 - f) Discuss the role of immunomodulatory Drugs.
 - g) Discuss the varied presentations on X ray chest in Corona patients.
 - h) To discuss the norms of ambulance.
 - i) To highlight the significance of Telemedicine in the management of Corona.

j) To discuss the complications in pregnancy and in cases requiring dialysis.

- 3. Dr. Vasant Nagvekar illustrated the difficulties in differentiating the COVID from NON COVID patients when they present to the hospital. He insisted on protection of health care workers by PPEs. Afebrile COVIDS miss early diagnosis and are more prone to mortality. He insisted on having a defined triage area in the hospital, He stressed upon the need of setting up fever clinics in the city in each ward. He undertook the responsibility of evolving a risk stratification score in COVID patients.
- 4. Dr. Zarir Udawadia quoted that there is no magic bullet and we will differ in treatments. The treatment is mostly supportive and according to the symptoms. He felt that we will have to present with a buffet of treatment options in the guidelines and it will be up to the Doctor to choose the protocols as per the needs of the individual case. He highlighted the importance of supportive care. He described the concept of "ICUs for Excellence". In some of the hospitals. He expressed the need for a quicker test and suggested that there be many more tests facilities be made available. Antibody based test was useful for Health care worker protection according to him. He questioned the need of 2 separate negative tests prior to the discharge and felt that we could do with single negative test and the fact that the patient was asymptomatic even after 5 days. There was a debate on this protocol and there was an agreement that hospital is not the suitable place for isolation and the patient better be in his home isolated if the test was negative and patient was asymptomatic... After five days. It was also made clear that by the 8th day the viral load shedding is reduce to non-infective levels and therefore such strict isolation after a single negative test could be effective and will reduce the burden on the hospitals. It was felt that clinical guidelines for discharge be written.

Dr. Udawadia has undertaken responsibility to

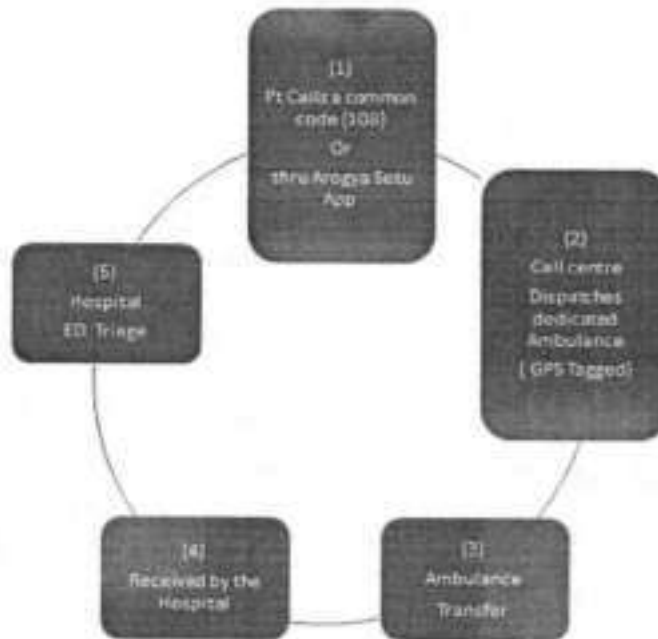
- a) To propose buffet approach for treatments protocols form where the doctor can choose.
 - b) To propose correct Dr.ug combinations and dosage schedules.
 - c) To restrict the role of steroids to a careful decision making.
 - d) To document safe discharge guidelines from the hospital.
- 5. Dr. Rahul Pandit from Fortis ICU Mulund suggested the application of 3 -5 mins of simple walking test in the OPD and observing if the patient becomes dyspneic. He highlighted the use of prone position nursing with oxygen supplementation to the patient in the early phases.
 - 6. Dr. Shahshank Joshi highlighted that the death rates were high because state had listed the death due to co morbidities also as COVID deaths which was not done by other states. He insisted on taking care of diabetes and hypertension and cardiac problems. He stressed the importance of Risk stratification, oxygen support, immunomodulation in selected cases and oral antivirals which he hoped would be available after three weeks in country.

He has undertaken responsibility of writing treatment protocols with Dr. Zarir Udawadia.

7. Dr. Zaheer Virani brought about the difficulties in Dialysis as many centers had shut shops. Hon. MC briefed that they had already conducted a meeting and therefore centers would now reopen for dialysis of regular patients, this would positively impact the mortality rate of the State.
8. Dr. Kedar Toraskar stressed upon the need of Portable USG and suggested the relaxation in PCPNDT act for registration of machines. He stressed the role of High flow oxygenators which are more useful than invasive ventilators.
9. Dr. Subhash Salunkhe touched upon the Public Health Approach and insisted on the role of HCQ prophylaxis in community.
10. Following Hospitals were recognized as COVID-19 CRITICAL CARE HOSPITALS:
 - a) SEVEN HILLS Hospital
 - b) ST. GEORGE Hospital
 - c) Saifee Hospital
 - d) NANAVATI Hospital
 - e) WOCKHARDT Hospital
 - f) HHS Balasaheb Thackeray Hospital
11. Hon CS listed following tasks to be completed on priority:
 - a) Treat every patient by default as COVID-19 case unless proved otherwise.
 - b) To create a triage area in each hospital
 - c) To freeze number of COVID-19 Critical Care hospitals and fill manpower and physical infrastructure gaps in all respect at the earliest, where need be BMC will seek assistance from the State Government.
 - d) To lay down ICU protocols for COVID-19 ICUs by evolving consensus on best practices.
 - e) To establish telemedicine/hotline to link front line doctors with ICU experts
 - f) To formulate risk stratification score.
 - g) To study the legal aspect of PCPNDT.
 - h) To identify and operationalize fleet of ambulances to facilitate rapid movement.
12. TASKS ASSIGNED TO INDIVIDUAL MEMBERS.
 - a) Risk stratification score - Dr. Nagavekar.
 - b) Webinar teachings - Dr. Pandit, Dr. Joshi.
 - c) Voluntary on call rota to take calls - Dr. Om Srivastava.
 - d) To write consensus policies about ICU management- Dr. Zarir & Dr. Joshi.
 - e) COVID-19 ICU protocols - Dr. Zarir and Dr. Joshi.
 - f) To write policies for kidney conservation in COVIDS - Dr. Zaheer Virani.
13. The meeting ended thanking Hon. CM for guiding the Task Force.

3. Ambulance guidelines and Emergency Medical Services(EMS)

AMBULANCE GUIDELINES



- Role of the Call Centre
 - To GPS tag ambulance to the nearby designated hospital
 - Have an update of Vacancies available at the hospitals in terms of ICU, Isolation, HDU
 - Communicate with the Ambulance doctor
 - Dispatch Guided Assistance
 - Role of the Doctor in Ambulance
 - To assess (using NEWS Score) and stabilise the patient
 - Give a surgical mask to all pts
 - If O2 requiredgive O2 and then put a mask

- No need of IV Fluids unless hemodynamically unstable
- Be prepared for intubation with full PPE and additional Vizer
- Avoid the use of AMBU and directly connect to a portable ventilator after attaching the HMEF

Emergency Medical Services (EMS) and Ambulance

EMS Command Centre

- Set up a real time EMS command centre for critical care beds
- Every COVID hospital and COVID critical care units to have their floor plan displayed along with the bed numbers
- Every 2 hours in a day real time update with the floor plan, on bed occupancy, patients name on each bed and - likely time of transfer out of ICU (This can be done once in a day)
- EMS command centre would have a ready list of beds available within near proximity of the patients location
- Command centre to have an emergency medicine trained doctor 24X7 to do triage of patient so that only COVID positive or COVID suspect patient is shifted on these precious beds

Ambulance Services

Infrastructure

- Efforts to have negative pressure ambulance- A simple exhaust Fan, with air conditioning settings to Dr.aw air from outside should be sufficient to create a better bio environment.
- Plastic sheets can be used on the stretcher and flooring of Ambulance which can be discarded between each patient as per bio medical waste norms

- Ambulances will be cardiac ambulance only
- ECG, Pulse Oximetry, NIBP, One Invasive Monitoring facility
- Transport ventilator, capable of generating PEEP up to 20cmH₂O, Having FiO₂ blender, Volume and pressure control mode
- One syringe pump for vasoactive medications, Suction Machine, Oxygen flow meter
- Oxygen supply to last for 8 hours at least
- Emergency medication KIT- Adrenaline, Nor Adrenaline, Atropine, Sodium Bicarbonate, Hydrocortisone, Duolin nebs, Calcium Gluconate, 25% Dextrose, IV fluids (crystalloids)
- Intubation KIT- Laryngoscope with adult to neonatal blades, Endotracheal tubes, Ambu bag, Mask, Oxygen therapy mask, Laryngeal mask Airway (LMA)
- Tapes, ties, suction catheters gloves, syringes, needles etc.
- **Personal Protective Equipment's-** Doctor, nurse or paramedic who remains within 2 meters of patient during the journey at any time should be wearing full PPE, Cap, N95Mask, Goggles, Neck Cover, Gown, Leggings

Personnel

- Doctor – Trained to do an assessment of patient, able to do simple procedures, have airway skills, able to insert LMA in an emergency
- Ventilate a patient on portable ventilator.
- Paramedic to assist the doctor
- Ambulance crew- Driver, helper etc.

Role of Doctor

•Role of the Doctor in Ambulance

- To assess (using NEWS Score) and stabilize the patient
- Give a surgical mask to all pts.
- If O2 required, give O2 and then put a mask
- No need of IV Fluids unless hemodynamically unstable
- Be prepared for intubation with full PPE and additional Visor
- Avoid the use of AMBU and directly connect to a portable ventilator after attaching the HMEF
 - As far as possible if patient needs to be Intubated, it should be done at the point of pick up only
 - In a rare instance that it needs to be done in an ambulance then please follow intubation protocol as per ICU guidelines

Record Keeping

- It is important to keep an record of patients history, vitals on first contact and during transport
- Ventilatory parameters
- Any signs and symptoms observed
- Detail hand over at the receiving hospital should be given

Refer to Ambulance Checklist below

Checklist

- Confirm receiving hospital has a bed available from command centre
- Confirm availability of PPE

9/22/14

- Take only the necessary stock in ambulance that is needed
- Donning of PPE should happen before patient contact
- On Patient contact confirm patient identity
- Take an handover and all necessary reports
- Ensure patient can be safely transported, in needed secure airway there and then transport
- Do NOT delay transport for non-clinical reasons

4. RECOMMENDATIONS ON NATIONAL EARLY WARNING SCORE

Please go through below link

<http://april2020-covidpages.s3-website-ap-southeast-1.amazonaws.com/>

For National Early warning score (News) once you click on link and fill the exact information you will get the detailed calculation score and where to direct the patient according to the severity.

Thanks to Dr. Raman Gaikwad and Dr. Prashant Borade for technical assistance in creating this link

NEWS explained

The National Early Warning Score (NEWS) determines how severe the general status of the patient is and the likelihood of decline which in turn requires admission to intensive care unit for more specialized care.

NEWS is based on the Modified Early Warning Score (MEWS) and is based solely on physiological bedside parameters and AVPU evaluation.

The items accounted for in the score are described in the table below:

NEWS	Description
Respiratory rate	Assesses the level of distress caused by illness to the pulmonary system and to the central nervous system areas that regulate breathing. It is counted in breaths per minute and ranges between under 8 to over 25.
Oxygen saturation	Levels of oxygen saturation below 91 and those above 96 become increasingly problematic and trigger need for more specialized care.
Oxygen supplementation	
Body temperature	To provide patient baseline and signal infection.

Systolic blood pressure	Offer information on the work of the heart and on blood circulation throughout the arteries and veins.
Heart rate	
AVPU	The level of consciousness assessment (Alert, react to Verbal, reacts to Pain, Unresponsive).

This model standardizes the clinical assessment of ill patients that might require critical care intervention. The weights awarded to each item are presented below:

National Early Warning Score (NEWS)							
Physiological parameters	3	2	1	0	1	2	3
Respiration Rate	≤8	N/A	9 – 11	12 – 20	N/A	21 - 24	≥25
Oxygen Saturation	≤91	92 - 93	94 – 95	≥96	N/A		
Supplemental Oxygen	N/A	Yes	N/A	No	N/A		
Temperature	≤35	N/A	35.1 - 36	36.1 - 38	38.1 - 39	≥39.1	N/A
Systolic Blood Pressure	≤90	91 - 100	101 - 110	111 - 219	N/A		≥220
Heart Rate	≤40	N/A	41 – 50	51 – 90	91 - 110	111 - 130	≥131
AVPU score	N/A			A	N/A		V, P or U

Should also be noted that if an item scores 3 points and the final score is of 3 or 4, despite the fact that the final score indicates low chance of ICU, the patient should still be monitored, especially on the component where they scored 3 points.

Scores such as NEWS or MEWS are not addressed to admission only, like the Injury severity score or the Glasgow Coma Scale are, but they should be assessed regularly during hospital admission of patients with significant illness.

There is also a version of the score for use in pediatric patients, the PEWS, where the risk of status deterioration is assessed based on behavior, cardiovascular and respiratory signs and urinary output.

Interpretation

The scoring system involves addition of points that are awarded to the items, depending on their predictive value (the patient needing intensive care unit supervision) and the severity of the condition.

In the following table, there is a summary of the association between the NEWS results, likelihood of ICU admission and further recommendations:

NEWS	Likelihood of ICU	Recommendation
0 - 4	Very low	Clinical monitoring should be continued and the medical professional, usually a registered nurse will decide further if clinical care needs to be updated.
5, 6	Moderate	The patient should be reviewed by a medical specialist with competencies in acute illness, evaluation that may result in the referral to ICU.
≥7	High	Urgent critical care is need and the patient should be transferred to the appropriate specialized department for further care.

Original source

Royal College of Physicians. National Early Warning Score (NEWS) standardizing the assessment of acute-illness severity in the NHS. Report of a working party. London: RCP, 2012.

Validation

Smith GB, Prytherch DR., Meredith P, Schmidt PE, Featherstone PI. The ability of the National Early Warning Score (NEWS) to discriminate patients at risk of early cardiac arrest, unanticipated intensive care unit admission, and death. *Resuscitation*. 2013; 84(4):465-70.

Other references

1. Subbe CP, Kruger M, Rutherford P, Gemmel L. Validation of a modified Early Warning Score in medical admissions. *QJM*. 2001; 94(10):521-6.

2. Prytherch DR., Smith GB, Schmidt PE, Featherstone PI. Views--Towards a national early warning score for detecting adult inpatient deterioration. *Resuscitation*. 2010; 81(8):932-7.
3. Smith GB, Prytherch DR., Meredith P, Schmidt PE, Featherstone PI. The ability of the National Early Warning Score (NEWS) to discriminate patients at risk of early cardiac arrest, unanticipated intensive care unit admission, and death. *Resuscitation*. 2013; 84(4):465-70.
4. McGinley A, Pearse RM. a national early warning score for acutely ill patients. *BMJ*. 2012; 345: e 5310.

Specialty: Emergency

Objective: Evaluation

Type: Score

No. Of Items: 7

Year of Study: 2012

Abbreviation: NEWS

Article By: Denise Nedeia

Published On: June 18, 2017 · 08:29 AM

Last Checked: June 18, 2017

Next Review: June 18, 2023

Recommendations

1. We recommend that the routine clinical assessment of all adult patients (aged 16 years or more) should be standardized across the NHS, with the routine recording of a minimum clinical dataset of physiological parameters resulting in the National Early Warning Score (NEWS).
2. The NEWS should not be used in children (i.e. aged <16 years) or in women who are pregnant, because the physiological response to acute illness can be modified in children and by pregnancy.
3. The NEWS may be unreliable in patients with spinal cord injury (especially tetraplegia or high-level paraplegia), owing to functional disturbances of the autonomic nervous system. Use with caution.
4. The NEWS should be used as an aid to clinical assessment – it is not a substitute for

- competent clinical judgment. Any concern about a patient's clinical condition should prompt an urgent clinical review, irrespective of the NEWS.
5. We recommend that the NEWS is used to improve the following:
 - (i) The assessment of acute-illness severity
 - (ii) The detection of clinical deterioration
 - (iii) The initiation of a timely and competent clinical response.
 6. In hospitals, the NEWS should be used for initial assessment of acute illness and for continuous monitoring of a patient's wellbeing throughout their stay in hospital. By recording a patient's NEWS score on a regular basis, the trends in their clinical responses can be tracked to provide early warning of potential clinical deterioration and provide a trigger for escalation of clinical care. Likewise, the recording of the NEWS trends will provide guidance about the patient's recovery and return to stability, thereby facilitating a reduction in the frequency and intensity of clinical monitoring towards patient discharge.
 7. The NEWS should be used in the pre-hospital assessment of acutely ill patients by 'first responders', e.g. ambulance services, primary care and community hospitals, to identify and improve the assessment of acute illness, triage and the communication of acute-illness severity to receiving hospitals.
 8. The NEWS should be used in emergency departments to aid the initial assessment of patients, ongoing monitoring and patient triage decisions. The NEWS physiological parameters and scoring system
 9. We recommend that the NEWS score should be determined from seven parameters (six physiological, plus a weighting score for supplemental oxygen): Six physiological parameters routinely recorded:
 - (i) Respiration rate
 - (ii) Oxygen saturation
 - (iii) Systolic blood pressure
 - (iv) Pulse rate
 - (v) level of consciousness and new confusion ('C'), thus AVPU becomes ACVPU, where C represents new confusion
 - (vi) Temperature.

In addition, a weighting score of 2 should be added for any patient requiring supplemental oxygen (oxygen delivery by mask or nasal cannula) to maintain their prescribed oxygen saturation range.

10. Each of the six physiological NEWS parameters are allocated a score according to the magnitude of disturbance to each parameter. The individual parameter scores should then be added up, along with a score of 2 for use of supplemental oxygen, to derive the aggregate NEW score for the patient.

11. We recommend four trigger levels for a clinical alert requiring clinician assessment based on the

NEWS:

- LOW score: an aggregate NEW score of 1–4
- A single red score: an extreme variation in an individual physiological parameter (a score of 3 in any one parameter, which is colour-coded red on the NEWS2 chart)
- MEDIUM score: an aggregate NEW score of 5 or 6. A NEW score of 5 or more is a key threshold and is indicative of potential serious acute clinical deterioration and the need for an urgent clinical response
- HIGH score: an aggregate NEW score of 7 or more.

12. We recommend that these triggers should determine the urgency of the clinical response and the clinical competency of the responder(s).

- A low NEW score (1–4) should prompt assessment by a competent registered nurse or equivalent, who should decide whether a change to frequency of clinical monitoring or an escalation of clinical care is required.
- A single red score (3 in a single parameter) is unusual, but should prompt an urgent review by a clinician with competencies in the assessment of acute illness (usually a ward-based doctor) to determine the cause, and decide on the frequency of subsequent monitoring and whether an escalation of care is required.
- A medium NEW score (5–6) is a key trigger threshold and should prompt an urgent review by a clinician with competencies in the assessment of acute illness – usually a ward-based doctor or acute team nurse, who should urgently decide whether escalation of care to a team

with critical care skills is required (i.e. critical care outreach team).

- A high NEWS score (7 or more) is a key trigger threshold and should prompt emergency assessment by a clinical team / critical care outreach team with critical care competencies and usually transfer of the patient to a higher-dependency care area.

The NEWS observations chart

13. We recommend the use of the standardized NEWS2 observation chart for the routine recording of clinical observations, across the NHS. This should eventually replace the existing NEWS chart.

14. The NEWS2 chart should replace the wide variety of temperature, pulse and respiration rate (TPR)

Recommendations

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National Early Warning Score (NEWS) 2

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Charts currently in use, to provide a standardized system for recording routine clinical data for all patients in hospital. A consistent format will provide easier recognition of a patient's clinical status, and facilitate national training in the measurement and recording of such data for all NHS staff (<http://tfnews.ocbmedia.com>).

15. The NEWS2 chart is colour-coded to provide both visual and numeric prompts to aid identification of abnormal clinical parameters.

16. The core of the NEWS2 chart for recording and scoring the NEWS physiological parameters should be consistent nationally. It is recognized that the rest of the chart area will be customized to reflect other key parameters not incorporated in the NEWS, e.g urine output and pain scores, according to the clinical environment.

17. The NEWS can and should be used alongside validated scoring systems such as the Glasgow Coma Scale (GCS) or disease-specific systems as dictated by patient need.

Using NEWS in clinical practice

18. We recommend that the NEWS is used to determine the urgency of clinical response and the clinical competency of the responder(s) according to acute-illness severity for patients in hospitals, or in prehospital assessment.
19. Concern about a patient's clinical condition should always override the NEWS if the attending healthcare professional considers it necessary to escalate care.
20. Clinical response to the NEWS should be recorded on the NEWS chart. This will provide a continuous record of actions taken in response to variations in the NEWS and act as a prompt for escalating care if necessary.
21. When clinical teams decide that the routine recording of data for the NEWS is not appropriate, e.g for patients on an end-of-life care pathway, such decisions should be discussed with the patient (or their family/carer as appropriate) and recorded in the clinical notes. The NEWS and sepsis
22. We recommend that sepsis should be considered in any patient with a known infection, signs or symptoms of infection, or in patients at high risk of infection, and a NEWS score of 5 or more – 'think sepsis'.
23. We recommend that patients with suspected infection and a NEWS score of 5 or more require urgent assessment and intervention by a clinical team competent in the management of sepsis and urgent transfer to hospital or transfer to a higher-dependency clinical area within hospitals, for ongoing clinical care.

The NEWS, supplemental oxygen and hypercapnic respiratory failure

24. We recommend that when supplemental oxygen is being used to maintain the desired oxygen saturation, the rate of oxygen delivery (L/min) and the delivery system/device should be documented on the NEWS chart using the British Thoracic Society oxygen delivery device codes.
25. For patients confirmed to have hypercapnic respiratory failure on blood gas analysis on either a prior or their current hospital admission, and requiring supplemental oxygen, we recommend (i) a prescribed oxygen saturation target range of 88–92%, and (ii) that the dedicated SpO₂ scoring scale (Scale 2) on the NEWS2 chart should be used to record and score the oxygen saturation for the NEWS.

26. The decision to use SpO2 scale 2 should be made by a competent clinical decision maker and should be recorded in the patient's clinical notes.
27. In all other circumstances, the regular NEWS SpO2 scale 1 should be used.
28. For the avoidance of doubt, the SpO2 scoring scale not being used should be clearly crossed out across the chart.

The NEWS and new confusion or delirium

29. We recommend the inclusion of 'new confusion' (including disorientation, delirium or any acute reduction in GCS score) as part of the assessment of consciousness on the NEWS chart. The AVPU term has been amended to ACVPU, where 'C' represents new confusion.
30. We recommend that new confusion scores 3 on the NEWS chart, i.e. a red score for a single score of 3, indicating that the patient requires urgent assessment.
31. We recommend that, if it is unclear whether a patient's confusion is 'new' or their usual state, the altered mental state/confusion should be assumed to be new until confirmed to be otherwise. Clinical response to the NEWS
32. The organization of the clinical response to acute illness should be reviewed and agreed locally to ensure that the speed of response and clinical competency of the responder(s) match that recommended for each of the grades of acute-illness severity as defined by the NEWS.
33. We recommend that, in acute hospitals, local arrangements should ensure an appropriate response to each NEWS trigger level and should define:
 - The speed/urgency of response to acute illness, including a clear escalation policy to ensure that an appropriate response always occurs and is guaranteed 24/7
 - Who responds, i.e. the seniority and clinical competencies of the responder(s)
 - The frequency of subsequent clinical monitoring
 - The appropriate settings for ongoing acute care, including availability of facilities, trained staff and timely access to higher-dependency care, if required. Clinical competencies of the responders to the NEWS
34. All healthcare staff recording data for, or responding to, the NEWS should be trained in its use and should understand the significance of the scores with regard to local policies for responding to the NEWS triggers and the clinical response required.

93014

Recommendations

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National Early Warning Score (NEWS) 2

- 35. The clinical responders to critical NEWS triggers (score of 5 or more) should have the appropriate skills and competencies in the assessment and clinical management of acute illness.38 in hospitals, team members should be clearly identified and provide coverage 24/7.
- 36. There should be locally agreed mechanisms for timely alert of the critical care teams responding to a critical NEW score (score of 5 or more). Members of these teams should have overriding responsibility to this role with regard to other duties, 24/7.

The NEWS and frequency of clinical monitoring

- 37. The NEWS should be used to inform the frequency of clinical monitoring, which should be recorded on the NEWS chart.
- 38. We recommend that for patients scoring 0, the minimum frequency of monitoring should be 12 hourly, increasing to 4–6 hourly for scores of 1–4, unless more or less frequent monitoring is considered appropriate by a competent clinical decision maker.
- 39. We recommend that the frequency of monitoring should be increased to a minimum of hourly for those patients with a NEW score of 5–6, or a red score (i.e. a score of 3 in any single parameter) until the patient is reviewed and a plan of care documented.
- 40. We recommend continuous monitoring and recording of vital signs for those with an aggregate NEW score of 7 or more.

The NEWS and clinical settings for acute clinical care

- 41. The NEWS should be used to aid decision making with regard to the most appropriate clinical setting for ongoing care. Local policies should define pathways for efficient and seamless escalation and transfer of care, including:
 - Access to clinical monitoring in hospitals, i.e. monitored beds, with staff trained to interpret and respond appropriately
 - Timely access to staff trained in critical care, i.e. airway management and resuscitation and, when required, access to higher-dependency / critical care beds

- Timely access to specialist acute care, i.e. acute cardiac, respiratory, neurological, liver or renal support.

The NEWS – education and training

42. Education, training and demonstrable competency in the use of NEWS should be a mandatory requirement and form part of mandatory training for all healthcare staff engaged in the assessment and monitoring of acutely ill patients across the NHS.
43. We recommend that education regarding NEWS should form part of undergraduate nursing, paramedical and medical training.
44. We recommend that the clinical responders to NEWS scores of 5 or more must have competency in the assessment of acutely ill patients. Responders to a NEWS score of 7 or more must also have competency in critical care skills and airway management.

The NEWS and research and development

45. We recommend that future research be directed towards evaluating the efficiency of the NEWS in improving clinical response times and clinical outcomes in patients with acute illness – including in the primary care setting.
46. We recommend that the NEWS be used to catalyze an expansion of research into the effectiveness of novel interventions, diagnostics and care pathways in acute care in the NHS.

5. COVID 19 TREATMENT GUIDANCE

This is a living document that will be updated in real time as more data will emerge. Special populations like pregnancy and underlying lung disease or transplantation or people living with HIV will need to refer to a separate annexure appended as a resource. This document covers some potential off label * or experimental ** use of medication and does not cover recommendations for infection control, PPE, management of hypoxemia, and other complications of COVID 19

TREATMENT FOR HOSPITALISED COVID-19 PATIENTS:

All symptomatic, hospitalized patients should receive **Standard supportive care** with hydration, supplemental oxygen if SaO2 below 95% at room air and IV paracetamol for fever and pain (NSAID should be avoided if possible). IV fluids if under-hydrated.

Care should be taken to address and treat all co-morbidities that put them at risk of adverse outcomes: for example monitoring and treating their hypertension, cardiac issues and diabetes.

In terms of specific Dr.ug treatment: we would advise that all hospitalized patients with mild, moderate or severe disease should receive:

1) **HYDR.OXYCHLOROQUINE** in a dose of 400mg twice a day on Day 1, followed by 200mg twice a day from Day 2-5/6

2) **AZITHROMYCIN** 500mg a day for 5 days may be combined with this.

Some precautions need to be mentioned here:

- A) Check ECG prior to HCQS initiation for QTc prolongation. Note the risk is increased when used with other QT prolonging Drugs. Do not start HCQS if QTc is > 500 ms, or QTc > 550 ms in a patient with wide QRS, or discuss the risk/benefit ratio before starting.
- B) Avoid adding Azithromycin to HCQS in patients with prolonged QTc.
- C) G6PD test is desirable if possible for HCQS
- D) Doxycycline is an alternative to Azithromycin

3) **ANTIVIRALS** that may be considered, if available in the treating hospital, are:

i) **REMEDSIVIR****: administered IV in a dose of 200mg once a day on Day 1 followed by 100 mg a day from Days 2-10.

Note:

- A) This Dr.ug is currently off label.
- B) This Dr.ug should be reserved for severe cases.
- C) Monitoring of transaminases is advised and this Dr.ug should not be used in patients with transaminases > 5 times normal or creatinine clearance < 30 ml/min.

- ii) **FAVPIRAVIR****: is an oral, experimental antiviral whose availability is restricted. It may be considered if available, or if the center is part of an RCT with these Drugs.
- 4) **ANTI-INFLAMMATORY DRUGS**: An overactive, exuberant inflammatory response may contribute to 15% of deaths in patients with severe COVID pneumonia. IL-6 receptor antagonists have been used to counter this response but these are still experimental. Drugs include:
- i) **TOCILIZUMAB***: given in a single one-off IV dose of 4-8 mg /kg (maximum dose 400mg).
 - ii) **SARILUMAB***
 - iii) **ITOLIZUMAB * 1.6 MG/KG dose iv infusion**
(Premedication 100 mg hydrocortisone and 30 mg phenaramine 30 min prior to the infusion is recommended)

Note: there are fears about rebound viremia and secondary infections when these agents are used.

Note: Serum IL-6 levels if available and Ferritin levels may guide treatment decisions.

Note: These Drugs if used are reserved for severe cases only.

Table (for Algorithm)

- 5) **CONVALESCENT PLASMA***: Has been used in very small numbers of COVID-19 patients. If considered its use is reserved for severe patients. Each patient should receive 400 mls of ABO compatible plasma obtained from a donor who has been documented to have recovered from COVID-19 themselves and whose serum has high levels of ELISA antibodies.
- 6) **DRUGS TO BE AVOIDED /EXTREME CAUTION AT PRESENT:**
- A) **ANTIBIOTICS**: COVID-19 itself is not an indication for antibiotics unless there is laboratory evidence of a secondary bacterial infection.
 - B) **ACE-I and ACE-RB**: It is strongly recommended that those patients already prescribed these Drugs for preexisting conditions should be continued on their treatment. Patients should not be however started on these Drugs for the treatment of COVID-19.
 - C) **LOPINA VIR-RITONAVIR**: with results from a large RCT being negative we would argue against the use of these anti-viral Drugs unless further data emerges.
 - D) **OSELTAMIVIR**: SARS-CoV-2 the virus that causes COVID-19, does not use neuraminidase as part of its viral replication cycle so oseltamivir is unlikely to be useful and should be reserved for treating patients with influenza.
 - E) **CORTICOSTEROIDS**: As always, the use of these Drugs remain controversial with studies showing increased and decreased mortality in patients on corticosteroids. They are not generally indicated as per available evidence as they might prolong viral shedding. May

be used in septic shock or if patient has other indications for steroid use. Further indications for their anti-inflammatory role may emerge from studies underway.

- F) **Anti-Diabetic Drugs:** Among anti diabetic Drugs Glitazones, SGLT2 inhibitors should be stopped and Insulin is preferred. Hydroxychloroquine can cause hypoglycemia.

6. ICU MANAGEMENT OF COVID 19 PATIENTS

Introduction

The COVID 19 pandemic has been a concern for every country in the world. All healthcare systems and government are collaborating efforts to curb the spread in their countries. One of the important aspects remains the patients who need hospitalization and especially who need critical care. These patients are at risk of developing complications and have a higher mortality. Another problem is COVID 19 is presenting in various different presentation, respiratory failure, cardiac involvement and neurotropism is also been reported.

With the experience of cases seen across the world, some scoring systems have been developed, which will help in risk stratification of these patients and help in planning their area of care (ward, ICU...) and their treatment. The parameters include different organ systems.

1. NEW score

The early warning signs have been in use in hospitals for a long time and have helped in identifying patients who are at risk. Based on the early warning signs the NEW and some modification have been described by Liao et al.

We propose a following risk stratification in addition to the one proposed by Liao et al

High Risk

1. Male Patient
2. Co Morbidities- Diabetes and Hypertension
3. Fail 3 -5 minutes' walk test-

Walk Test- Patients who appear stable and have room air saturation above 96% are requested to have a gentle walk in their cubical for 3-5 minutes, if they desaturate to less than 93% then they are a high risk patient who is likely to deteriorate.

Early Warning Rules

Score	Risk Grading	Warning Level	Monitoring Frequency	Clinical Response
0			Q12 hrly	Routine Monitoring
1-4	Low	Yellow	Q6 hrly	Doctor to review 12 hrly and Increase monitoring
5-6 or has 3 in one parameter or co morbidity	Medium	Orange	Q1 Hrly	Get Critical Care Review or Transfer to Critical Care Facility. High Flow Oxygen.
>7	High	Red	Needs Continuous Monitoring in ICU/HDU	Admission in Critical Care. Treatment Plan as per need

Pathophysiology- Cardinal Features to watch for

Cytokine Storm- COVID19 patients have increased levels of IL6. This in turn leads to high levels of Plasminogen activator inhibitor-1. This leads to reduced levels of tissue plasminogen activator. This leads to prothrombotic state. Micro vascular Thrombosis occurs in all the systems and presents with multisystem disorder which includes rapid onset AKI, Shock, Convulsions, Ischemic Heart Disease, Pulmonary Vasculopathy, Acute Pancreatitis, and Skin Rash. Endothelial dysfunction is associated in these patients. This is characterized by discordant rise in D-DIMER with normalizing ferritin and CRP.

Cytokine storm is indicated by Elevated ESR, CRP, IL6 levels, Ferritin, D-DIMER, and LDH.

2. Renal dysfunction is seen in these patients as Acute on Chronic AKI with rapid worsening but polyuric type. Treated by Dialysis.

3. Hypoxemia when treated with ventilator, majority of patients had normal lung compliance with respiratory failure. Treatment for this will be different than low compliance setting...

4. COVID19 positive patients may have autonomic involvement and present with hypertension and rhythm disturbances. Treated by Labetalol.

ICU Management-

Type of patients covered in this document

In this document we are going to cover patients who need intensive care admission and are critical,

ICU Admission-

It is understood that it would be an LEVEL I ICU, which means capable of Cardiac Support, Ventilator and Dialysis. The ICU will be under critical care (Intensivist) and shall have doctors with airway skills round the clock.

It is Advisable to identify 3 teams

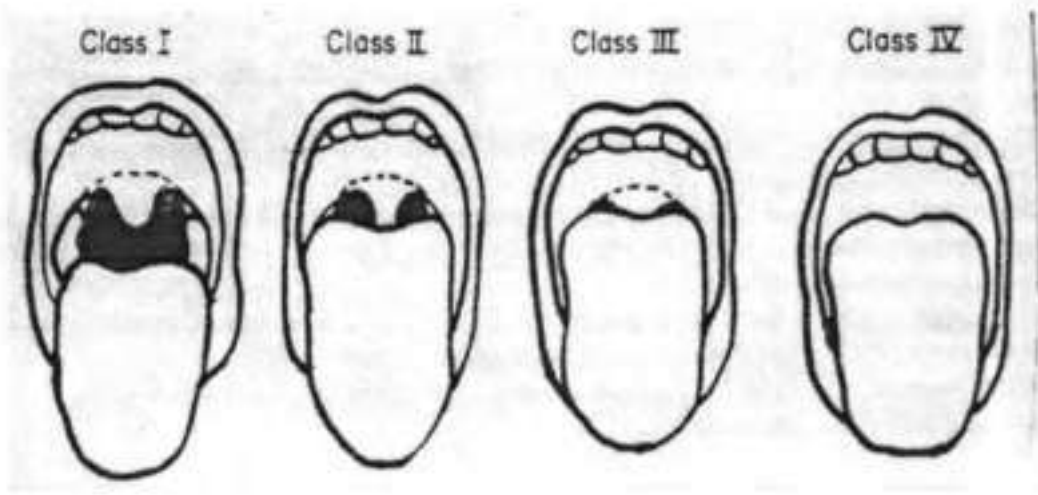
1. ICU Consultant- Intensivist who acts as overall in charge
 2. Airway team- Preferably anesthesia led/Intensive Care led or senior most member with best airway skills
 3. Vascular team- Intensivist, Anesthesiologist or at times vascular surgeon or cardiologist.
- The rationale for having teams identified means that the task is completed most efficiently with maximum safety. High aerosol procedures like airway handling have a very high risk of viral transmission.

Intubation Protocol

- Planed intubation as far as possible.
- Take good time to have your steps planed
- Assess the airway difficulty using mallampatti classification or LEMON classification
- 3 persons for intubation- Airway doctor, Airway assistance Nurse and Dr.ug administration person.
- All 3 should wear an extra hood over the PPE
- Video laryngoscope is preferred, in not then standard laryngoscope can be used
- Use Stylet or Bougie if in doubt to have ease in intubation.
- Pre oxygenation with 15L Non Re-breather Mask or High Flow Nasal Cannula Circuit.
- Keep Ventilator with disposable circuit checked and ready.
- Rapid sequence induction- Use Propofol or ketamine as anesthetic agent (depending on blood pressure) and use suxamethonium or Rocuronium as muscle relaxant agent. The principle is not to intubate a patient who is coughing as it increases viral shedding by several folds.
- Attach a Bacterial Viral filter to end to endotracheal tube so that once Intubated there is no passive expiration which will increase viral shedding.
- Clamp tube with a forceps, attach the ventilator circuit and confirm intubation using end tidal carbon dioxide monitoring.
- Auscultation is usually not possible as doctors are wearing a full PPE.
- Lung ultrasound can be used for confirmation of tube position.
- Avoid circuit disconnection- push twist all connections

- Place a nasogastric tube after intubation is complete & ventilation established
- Discard disposable safely after use & decontaminate reusable equipment
- Ensure doffing of PPE is meticulous after leaving the room.
- Clean the room 20 minutes after intubation as per the cleaning protocol.
- **IN CASE OF EMERGENCY INTUBATION, TRY TO FOLLOW ABOVE STEPS AS MUCH AS YOU CAN, WITH FULL EMPHASIS ON PPE TO BE USED AND ALWAYS USE MUSCLE RELAXANT.**

Mallampati Classification



LEMON Classification

- Look at anatomy
- Examine the airway
- Mallampati
- Obstructions
- Neck mobility

ARDS in COVID- Pathophysiology

COVID-19 pneumonia, Pheno Type L

At the beginning, COVID-19 pneumonia presents with the following characteristics:

- Low elastance: the nearly normal compliance indicates that the amount of gas in the lung is nearly normal.
- Low ventilation to perfusion (VA/Q) ratio: since the gas volume is nearly normal, hypoxemia may be best explained by the loss of regulation of perfusion and by loss of hypoxic vasoconstriction. Accordingly, at this stage, the pulmonary artery pressure, should be near normal.
- Low lung weight: Only ground-glass densities are present on CT scan, primarily located sub pleurally and along the lung fissures. Consequently, lung weight is only moderately increased.
- Low lung recruitability: the amount of non-aerated tissue is very low, consequently the recruitability is low

COVID-19 pneumonia, Type H – Around 20-30% patients develop this

The Type H patient

- High elastance: The decrease of gas volume due to increased edema accounts for the increased lung elastance.
- High right-to-left shunt: This is due to the fraction of cardiac output perfusing the non-aerated tissue which develops in the dependent lung regions due to the increased edema and superimposed pressure.
- High lung weight: Quantitative analysis of the CT scan shows a remarkable increase in lung weight (> 1.5 kg), on the order of magnitude of severe ARDS.
- High lung recruitability: The increased amount of non-aerated tissue is associated, as in severe ARDS, with increased recruitability.

Aims of Oxygen Therapy, High Flow Nasal cannula and Mechanical Ventilation.

- Start Oxygen therapy with nasal prongs 2-4L/min and titrate to keep saturation above 94%
- Change to Hudson mask or NRB mask to give up to 15L/min again to keep sats above 94%.
- ABG monitoring, if P:F ratio Drops below 300, or increase work of breathing the consider awake PRONE or CARP (Covid Awake Prone/Repositioning Protocol)
- DO NOT USE BIPAP - as it is high aerosol generating and due to high compliance they generate large tidal volumes and cause Ventilatory induced lung injury.
- Use CPAP with caution, only if HFNC is not available.
- Use High Flow nasal Cannula Oxygen if available, if acts like an NIV, improves oxygenation, but does not change the mechanics much.
- All of above steps need to be reviewed every 30 min and if no improvement in-patient consider mechanical ventilation.
- DO NOT DELAY INTUBATION IF IT IS VERY CLEAR THAT PATIENT WILL NOT IMPROVE WITH OXYGEN THERAPY, HFNC. WHAT IS MORE DANGEROUS IS DELAYING AN OBVIOUS INVASIVE VENTILATION

9/20/14

Investigations

Base Line Investigations for ICU admission on Day 1-

- CBC, LFT, RFT, RBS, CXR, ECG, ABG, ESR, CRP, - May need to repeat ABG & some other tests as per clinical requirement.
- S. Ferritin, D-dimer, LDH, S.Triglycerides, electrolytes
- If QTc prolongation then Daily ionic calcium & magnesium
- Blood Culture
- Cardiac Involvement- Troponin I, CK-MB, ntproBNP
- Point of care Ultrasound(POCUS)- Lung/cardiac/IVC (Refer to the annexure 1) baseline & then at least once a day
- If available IL6 level

RED Flags in Investigations

1. Absolute Neutrophil to Absolute Lymphocyte ratio >3.5
2. P:F ratio <300
3. Rising CRP, Ferritin, D-dimer, LDH and Triglycerides
4. Troponin I Positive and Positive CK-MB

Before Mechanical Ventilation – Try Awake, Prone, High Flow Nasal O2 (refer to CARP protocol below)

- Ventilation Strategies Ventilation Protocol for Patients with Acute Respiratory Distress Syndrome
- All patients who present with acute breathlessness (less than 7 to 10 days) and having all of the following: $PaO_2/FiO_2 \leq 300$
 - Bilateral (patchy, diffuse, or homogeneous) infiltrates consistent with
 - Pulmonary edema No clinical evidence of left Atrial hypertension
 - Are diagnosed with acute respiratory distress syndrome (ARDS)/ SARI (severe acute respiratory illness)

Ventilation strategies will primarily depend upon the severity of SARI/ARDS

Ventilatory Management and Setup

- Calculate Predicted body weight
- Males- $50 + 2.3 [\text{height (inches)} - 60]$
- Females- $45.5 + 2.3 [\text{height (Inches)} - 60]$
- Select Control mode- Either mode is fine Volume control or pressure control
- Start with 100% FiO_2 and decrease as able
- Start with a PEEP of 8cmH₂O and change as able depending on PaO_2
- Aim for a tidal Volume of 6ml/Kg PBW
- Aim for a Plateau pressure of less than 30 at all times
- Set initial rate to achieve the minute ventilation and aim for $pH > 7.2$.

- If PaCO₂ is rising increase respiratory rate to maximum of 35/min
- As long as pH is maintained >7.2 tolerate permissive hypercapnia.

Oxygenation Targets- Sats 88- 95% and PaO₂- 60- 80mmHG

Do not aim for supra normal values. We do not know if too much of Oxygen is beneficial or perhaps harmful

- Change PEEP as per Oxygenation, can use PEEP/FiO₂ table from ARDS net, usually high PEEP may not be needed in COVID patients.
- Plateau Pressure <30cmH₂O at all times
- Measure plateau pressure with an inspiratory pause every 4th hourly and change PEEP/TV accordingly
- If Transporting the patient, same principles apply to transport ventilator

Prone Ventilation-

As the compliance may be good in most patients, prone may or may not help in recruiting more alveoli, however

- Despite best efforts in 2 – 4 hours after starting ventilation, if P:F ratio remains <150 or fails to improve above baseline then please prone patient
- Will need a team of 6-8 people to do prone
- Dedicated person to ensure airway is intact and ventilation is not compromised
- DO NOT disconnect Ventilatory circuit as it will add to aerosol.
- Keep adequate cushioning at pressure points
- Once prone keep prone for 16- 18 hours
- Asses with an ABG, improvement in oxygenation
- After 16 hours, please supine, do daily nursing cares, X ray Chest, ABG and then depending on condition consider repeating a prone session

Monitoring Expected-

- ECG
- Pulse Oximetry
- Non Invasive Blood Pressure
- In Intubated and Prone- Arterial line monitoring (ease of ABG collection)
- All critical Patients will need Central Line
- EtCO₂- for confirming intubation and at times continuous monitoring
- Blood Glucose- HGT initially Hourly x4 hours and then can extend as per patients control of blood sugar

Sedation and Muscle Relaxants

- All Intubated and ventilated patients will need continuous sedation
- Use Midazolam and Fentanyl as first choice
- Muscle relaxants for first 48 hours and continue if patient is prone.
- Remember to give daily sedation holiday for few hours (this depends a lot on clinical assessment of patient's condition)

9/21/14

Supportive Care for ICU patients

- All patients in ICU need to go through the check list of **FAST HUGS BID**
 1. **F**- Feeding
 2. **A**- Analgesia
 3. **S**- Sedation
 4. **T**- Thromboprophylaxis
 5. **H**- Head elevation of Bed – 30- 45 degree
 6. **U**- Ulcer Prophylaxis
 7. **G**- Glycemic control
 8. **S**- Spontaneous Breathing Trial
 9. **B**- Bowel movement
 10. **I**- Indwelling catheters (assess Foleys, Central and Arterial line, Remove if not needed)
 11. **D**- Neurological Disability (confusion, ICU psychosis, Agitation)

- Avoid Nonsteroidal anti-inflammatory Drugs (NSAIDs) like ibuprofen other than Paracetamol unless absolutely necessary
- All inhaled medicines (bronchodilators) should preferably be given by metered dose inhalers (MDIs) to reduce the chances of aerosolization.
- Avoid nebulized Drugs
- Use of histamine-2 receptor blockers or proton-pump inhibitors to prevent gastrointestinal bleeding, Sucralfate can be added
- A conservative or de-resuscitative fluid strategy after initial resuscitation
- Mechanical Thromboprophylaxis using intermittent pneumatic compression stockings can be used in cases where pharmacologic Thromboprophylaxis is contraindicated.
- Judicious use of sedation, using sedation score.
- Daily sedation-free intervals, and assessment for weaning readiness.
- Use of disposable ventilator circuits for each patient.
- Appropriate use of heat moisture exchanger (Bacterial Viral filter), attach one on patient end and one on ventilator end.
- Standardized weaning protocols.
- Closed suction catheters only, NO disconnection of circuit.
- Optimal care to reduce the incidence of catheter-related blood stream infections.
- Early enteral nutrition (within 24 to 48 hours of admission) if not contraindicated.
- Frequent position change to prevent pressure sores.
- Early mobilization including passive and active rehabilitation exercises to prevent critical illness-related neuromuscular weakness.
- Tracheostomy in patients with prolonged mechanical ventilation.

Patients with sepsis and multi Organ Dysfunction- use surviving sepsis guidelines protocol for COVID patients- General principles

1. Hemodynamics and Monitoring

- Do not USE hydroxyl Ethyl Starch
- Do not use dopamine
- Use Dynamic parameters like Pulse Pressure Variation and Stroke Volume Variation for assessing fluids-
- Capillary refill time, skin temperature and lactate give the best indication of downstream parameters

2. Fluids

- Conservative fluid strategy
- Crystalloids
- Balance Salt Solutions –(ringers lactate, plasmalyte) preferred (weak evidence)

3. Vasopressors

- Noradrenaline first choice
- Vasopressin if needed
- Dobutamine- in patients with poor cardiac function
- Target Mean Arterial Pressure of 65mmHg

4. Refractory shock

- Low dose hydro. High Flow Nasal Cannula (HFNC) over NIV
- ocortisone 50mg QID or 200mg Infusion over 24 hours

5. Ventilation strategy as above

COVID Awake Repositioning / Proning Protocol (CARP)

Aim: To avoid intubation and improve saturations in COVID19 patients Scope:

- Timed Position Changes Q 2 hrs. Ask patient to switch between the following positions, bed adjustments will be required between positions 1. Left Lateral Recumbent
- 2. Right Lateral Recumbent
- 3. Sitting Upright 60-90 degrees
- 4. Lying Prone in bed (Can be used with High Flow Oxygen and HFNC)

If these 4 positions are not raising the Oxygen Saturation, a 5th position can be tried: 5. Trendelenburg (Supine, Bed 30 degrees Head Down)

15 Minutes after each position change, check to make sure that Oxygen Saturation has not decreased. If it has, try another position.

Positions Changes to Counter Hypoxemia.

If patient has a significant Drop in Oxygen saturation, follow these steps:

1. Ensure the source of the patient's Oxygen is still hooked up to the wall and is properly placed on the patient (this is a common cause of desaturation)
2. Ask patient to move to a different position as above
3. If after 10 minutes, the patient's saturations have not improved to prior levels.

Extra Corporeal membrane Oxygenation- ECMO

In a small group of patients despite maximal care, prone ventilation and ARDS net ventilation, the patient may remain hypoxic. Some institutes which are ECMO ready, or medical colleges and hospitals with cardiac surgery back up may consider ECMO.

It would be important to mention that ECMO may be only offered to patients without co-morbidities and having single organ failure.

Modification of CPR for suspected or proven COVID patients

The recent (APRIL, 2020) American Heart Association guidelines modification for Covid 19 patients to be followed.

AHA algorithms in the annexure 2

Salient points

- Complete PPE for the entire code team. Protect the team first.
- Ideally transfer the patient to negative isolation room if possible
- Go back to ABC- seal off the aerosol that will come out of A & B before you start C.
- Do not bag mask Covid patients.
- Follow the Covid modified intubation protocol mentioned above.
- Use mechanical CPR devices if available.
- Disposable AED pads preferred to conventional paddles
- Consider hypomagnesaemia as a cause of arrest if patient is on hydroxychloroquine with or without azithromycin
- Doff carefully
- Decontaminate CPR equipment as per the protocols & dispose off the disposables carefully
- Run the rest of the code as per ACLS protocols

ICU Discharge /Transfer criteria

1. Stabilization of physiological status of the patient namely

Heart rate <100 per minute

Systolic bp > 110 mmhg

Respiratory Rate < 20/minute

1. Conscious & oriented
2. Tolerating enteral feeds
3. No organ support needed in last 24 hours of icu stay
4. Intensivists discretion will be final in case of patients who may not fulfill all the criteria

SUMMARY

1. Collaborative effort to manage the seriously ill patients affected by COVID 19 who require ICU care.
2. Risk stratification by the National early warning score (NEWS) .Patient with score of 5 to 6 will get a review by the Intensivists for a possible transfer to the ICU. A score of ≥ 7 needs immediate admission to a level 1 ICU.
3. A multidisciplinary team approach with the head Intensivists heading the team should be followed.
4. The following COVID 19 modified protocols to be followed:
 - a. Intubation & airway management
 - b. Oxygenation including HFNC
 - c. Noninvasive ventilation
 - d. Invasive ventilation
5. e Cardiopulmonary resuscitation
 - a. Hemodynamic support
6. Covid specific investigation protocols to be followed with availability of dedicated portable ultrasound machines in each ICU.
7. Predominantly supportive care since no definitive evidence-based therapy is available as of now. But addition of specific Drugs & therapies for specific group of patients depending on the severity criteria to be done specifically if enrolled in a validated clinical trial.

7. POCUS IN COVID 19 PATIENT CARE

Annexure 1

REQUIREMENTS

Portable Ultrasound machine with a fast booting time

Probes – Phased array or micro convex probe & linear (high frequency vascular) probe

FREQUENCY – Baseline study & can be repeated every 12 to 24 hourly or early if the clinical condition dictates so.

Disinfection as per the standard protocol after use of the machine.

A dedicated machine to be used for each unit

NO ULTRASOUND FINDINGS ARE SPECIFIC FOR COVID 19 PATIENTS. THESE HAVE TO BE CORRELATED WITH THE CLINICAL SYNDROME & THE REVELANT REPORTS

⇒ LUNG ULTRASOUND

- Thickened irregular pleural line.
-
- B" (B prime) profile (multifocal, discrete, confluent) – focal B lines in early phase progressing to alveolar interstitial syndrome later
- Consolidation – generally peripherally based can be sub pleural/translobar/nontranslobar (multilobar involvement)
- A lines during recovery
- Pleural effusions rarely seen

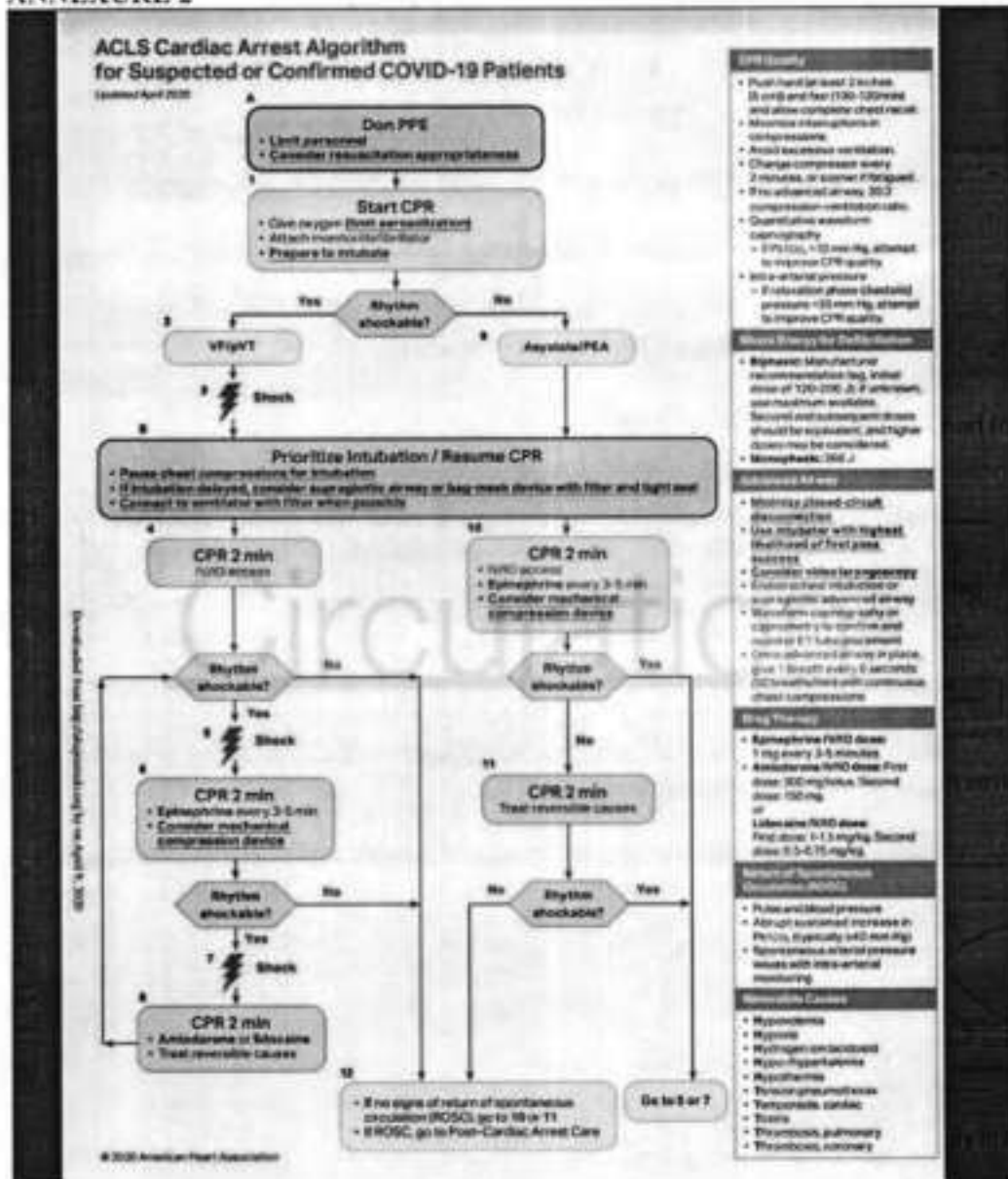
⇒ CARDIAC

- Viral myocarditis
- Stress cardiomyopathy
- Right ventricular enlargement
- Aids for fluid responsiveness along with Lung & IVC assessment

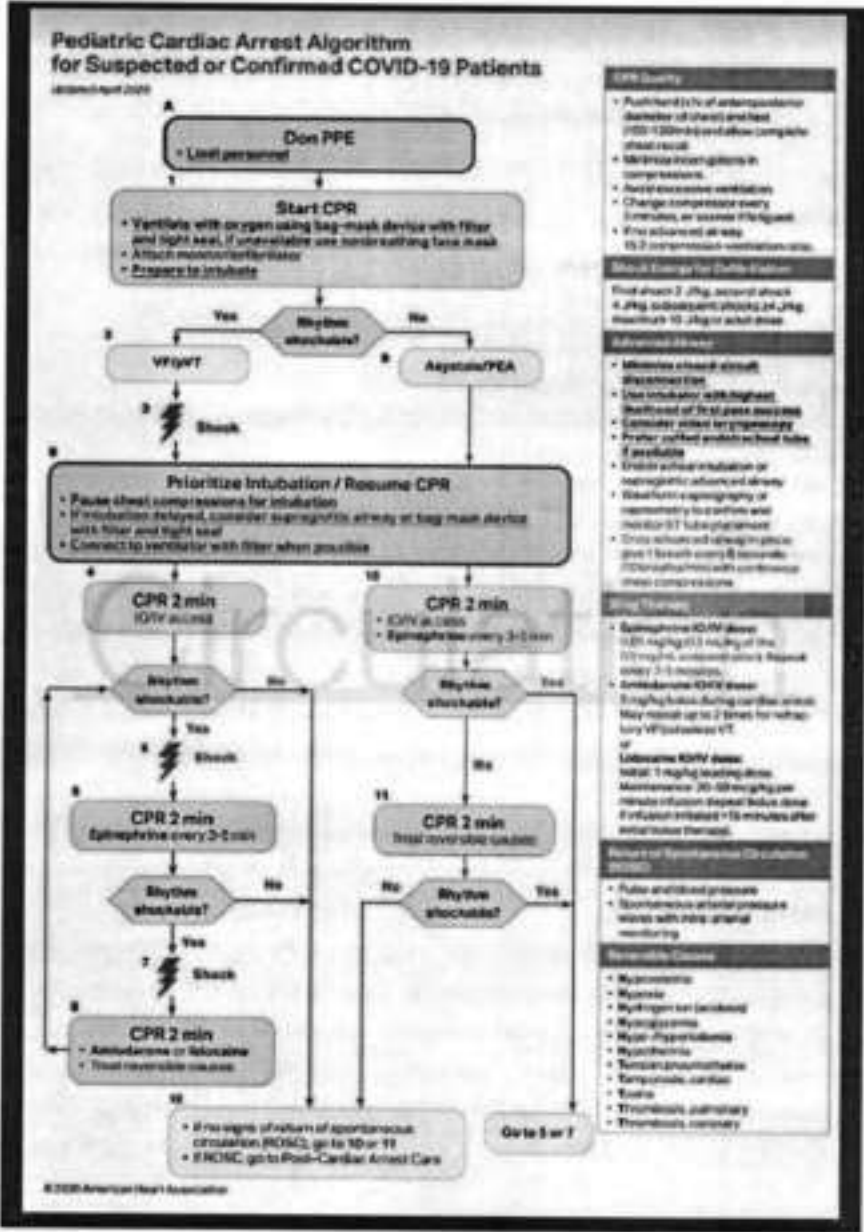
⇒ Aids for central & peripheral venous cannulation & confirming the endotracheal tube placement confirmation

⇒ USG guided protocol-based approach can be used in case of Covid 19 patients presenting with shock.

ANNEXURE 2



944/14



Taken from Revised algorithm for Covid 19 patients AHA guidelines (APRIL 2020)

8.COVID -19 - KIDNEY AND DIALYSIS **GUIDELINES**

a) COVID -19 and Kidney

Best Practices

1) Chronic Kidney Disease on Hemodialysis

Dialysis is a lifesaving procedure and should not be withheld.

Each and every dialysis unit should follow the Government of India Ministry of Health & Family Welfare Guidelines for Dialysis of COVID – 19 patients.

Salient features of the guidelines are included below

General Guidance for Dialysis Unit and Staff

- I. The dialysis department should enquire with patients on the phone or before entry to dialysis unit whether they are suffering from fever, sore throat, and cough, recent shortness of breath or runny nose. If yes, they should be asked not to come to the department and should be directed to go to a Covid 19 dedicated facility.
- II. A sign board should be posted prominently in Marathi, English and Hindi asking patients to report any fever, coughing or breathing problem in the screening area outside the dialysis unit
- III. From each dialysis bed or chair there should be an easy access to an alcohol-based hand sanitizer or soap and water for hand washing. Strict and frequent 7 step hand hygiene and universal precautions must be followed.
- IV. Sharing of equipment like stethoscopes, thermometers, oxygen saturation probes and blood pressure cuffs between patients should be avoided. If that is not possible appropriate cleaning and disinfection should be done in between use on patients.
- V. All dialysis personnel should be given personnel protective equipment and hydroxychloroquine prophylaxis. Full PPE for those caring for suspect or positive Covid 19 patients. Others should use at least minimum PPE i.e. mask, face shield and sterile gloves
- VI. Dialysis personnel should be trained about donning and doffing of Personal Protective Equipment (PPE), disposal of mask, gown and eye glasses. This can be undertaken via webinars or videos.
- VII. Staff caring for suspected or proven cases should not look after other patients during the same shift.
- VIII. If any center is found to have a Covid 19 positive patient or staff then
 - The center should be fumigated and thorough surface cleaning with 1% sodium hypochlorite should be done.
 - The center should be closed for not more than 24 hours.

- Only patients and staff at that center who came in contact with the positive patient should be tested.
 - Those patients who test positive for Covid 19 should be guided to Covid 19 hospitals for quarantine and dialysis.
 - The staff that tests positive should be guided to isolation centers/community care centers as per government protocol.
 - All staff and patients who were not in contact with the positive patient should continue dialysis at that center.
- IX. No Covid 19 positive patient should be allowed to travel for dialysis. They should be admitted in a facility with machines available for Covid 19 patients.
- X. If a dialysis center is unable to meet the needs of duration or frequency of dialysis due to inadequate staff or excess load of patients, it can consider on a case to case basis decreasing the frequency and duration of dialysis for a temporary period.
Patients can be advised regarding restricting fluid intake, low potassium diet, potassium binders and other medications as per the discretion of the treating nephrologist.

For Patients

- I. They should declare their symptoms before entering the unit.
- II. All stable dialysis patients are encouraged to come alone, If not possible then they should come with only with one attendee.
- III. Attendee should not wait in the dialysis area.
- IV. All of them should wear a mask and maintain social distancing.
- V. All patients should wash their hand with soap and water for 20 seconds if possible or else use an alcohol-based hand sanitizer.
- VI. Patients should not bring any non-essential items to the center.
- VII. Patients should be taught cough etiquettes and how to dispose of waste [Eg. tissues] and follow those protocols.
- VIII. Patients should preferably get their own soap, towel, sanitizer, automated BP instrument to reduce the risk of infection.
- IX. All patients to wear mask.
- X. Any other rules made by the hospital / dialysis unit (based on their local problems and circumstances) for containment of spread of infection should be adhered to.

2) Acute Kidney Injury and Covid 19

- I. Initially it was thought had acute kidney injury is not very common in Covid 19 as per the data from Wuhan, China. The latest data emerging from Italy differs though. Five percent of the ICU patients need renal replacement therapy in the second week.
- II. The indications for RRT remain the same as for any acute kidney injury as documented in the KDIGO guidelines. [<https://kdigo.org/wp-content/uploads/2016/10/KDIGO-2012-AKI-Guideline-English.pdf>]
- III. All modalities of RRT can be used and is left to the discretion of the treating physician depending on the availability of resources and patients hemodynamic and metabolic parameters.
- IV. If possible would be best to avoid moving the patient and give bedside RRT.
- V. Machine should be disinfected after use and preferably not be moved if one thinks further RRT will be needed in the near future.
- VI. All Covid 19 positive patients can be dialyzed in Covid 19 negative dialysis centers if two swabs are negative 7 days apart.

3) Extracorporeal therapies for Covid 19

This is being done by centers in Italy. At present use of cytokine removal therapies with Cytosorb, Oxiris and other similar devices is not recommended except in the context of a clinical trial.

4) Peritoneal dialysis and Covid 19

- I. Continue peritoneal dialysis. Ensure adequate consumables are available.
- II. Used dialysis bags and tubing should be properly disposed using 1% hypochlorite solution first and disposed in a sealed bag. Used dialysis fluid should be drained in the flush.
- III. One should avoid initiation of peritoneal dialysis at present to avoid resource consumption and decrease exposure to health care set up.
- IV. Acute Peritoneal dialysis can be done if the center is trained on doing so but it again will engage a health care worker for the entire period of time.

5) Kidney Transplant and Covid 19

- I. We recommend no living donor kidney transplant be done at present as it will use up valuable resources and also expose both the recipient and donor to an increased risk of infections.
- II. Deceased donor kidney transplant should be avoided unless it is life saving and decision should be made on a case to case basis by the ZTCC.

6) Ace and ARBs in Covid 19

No evidence to recommend at present to stop these medications except if worsening acute kidney injury

These are best practice guidelines based on guidelines from the Government of India and other educational resources from around the world.

These were formulated by Dr. Zaheer Amin Virani and Dr. Shrirang Bichu.
They were approved by the Mumbai Nephrology Group executive committee.

b) Proposed guidelines for Municipal health officers for handling COVID 19 patients on dialysis in dialysis unit

One Nodal officer to be appointed who will be aware of the functioning of the dialysis units the problems of management, doctors and patients. Dialysis is offered in different set ups - stand alone, charitable, and those in corporate hospitals. All have different set of problems. He/She should be aware of the need of dialysis without a break for life sustenance and that the units are functioning at full capacity but with a skeletal staff because of non-reporting of staff due to fear of infection.

1. Patients should be categorized into COVID negative, suspect and positive.
2. All negative patients will be screened before every dialysis for history of contact with a person who has travelled overseas in the last one month, anyone who had upper respiratory tract symptoms or fever or contact with COVID positive patient. Patient with Any such history should be categorized as Suspect.
3. These suspect patients should receive dialysis in an isolated area outside regular dialysis area and tested for COVID 19. Patient can return to main dialysis area if test result is negative. If very high index of suspicion for example if family member is COVID positive or by the doctor's judgment based on symptoms, a second test should be performed on Day5 before shifting the patient to the regular unit.

(We suggest - For standalone centres' and small hospitals where isolation facility is not possible/practical and for poor patients in units where dialysis is highly subsidized we must have a COVID SUSPECT dialysis center at SION Hospital. These patients don't need admission - can be quarantined at home. We can start with 5 machines - with capacity of 50 machines after seeing how this unfolds in the next 2 weeks. Patients currently on dialysis at Sion hospital can be shifted to KEM hospital to make place for suspect patients)

4. Covid positive patients should be shifted to a center dedicated for COVID positive patients.

(We suggest Seven Hills hospital to be earmarked for this. It has a functional dialysis center as per our knowledge. Patients can also be admitted there. We can start with 5 machines - with capacity of 50 machines after seeing how this unfold in the next 2 weeks)

5. Dialysis unit where a COVID positive patient is detected should not be closed down.
6. Dialysis unit should be sanitized/fumigated/surface disinfection done as per protocol at the earliest so that the next shift can be taken up.
7. Only those patients and those technicians in contact should be quarantined. Not to quarantine all the technicians as there will be no one to perform dialysis.
8. All exposed staff and patients in **that shift of dialysis** should undergo a test for COVID.
9. All COVID suspect patients should be dialyzed with PPE.

The principle is to identify infected cases and protect the staff and other patients while trying ones best to continue dialysis services.

Under no circumstances should we allow patients to die because of lack of dialysis facility

9/9/14

9.DISCHARGE PROTOCOL FOR COVID PATIENTS

1. Asymptomatic patients can be discharged with a single PCR test negative to either a step down facility (any form or supervised accommodation) with a stamp and counselled by a Public Health worker for 14 days.
2. Asymptomatic patients can be discharged with a single PCR test negative can be discharged for home for mandatory quarantine supervision with counselling by a Public Health Official.
3. Asymptomatic hospitalised patients showing positive PCR test after a period of 5 days can go to vigilant quarantine with a stamp. THERE MUST NOT BE ANY COMORBID CONDITION IN THE INDEX PATIENT.

10.HOTLINE FACILITY WITH ICU SPECIALISTS

Name, Contact number and E-mail ID of Doctors for Task Force COVID – 19

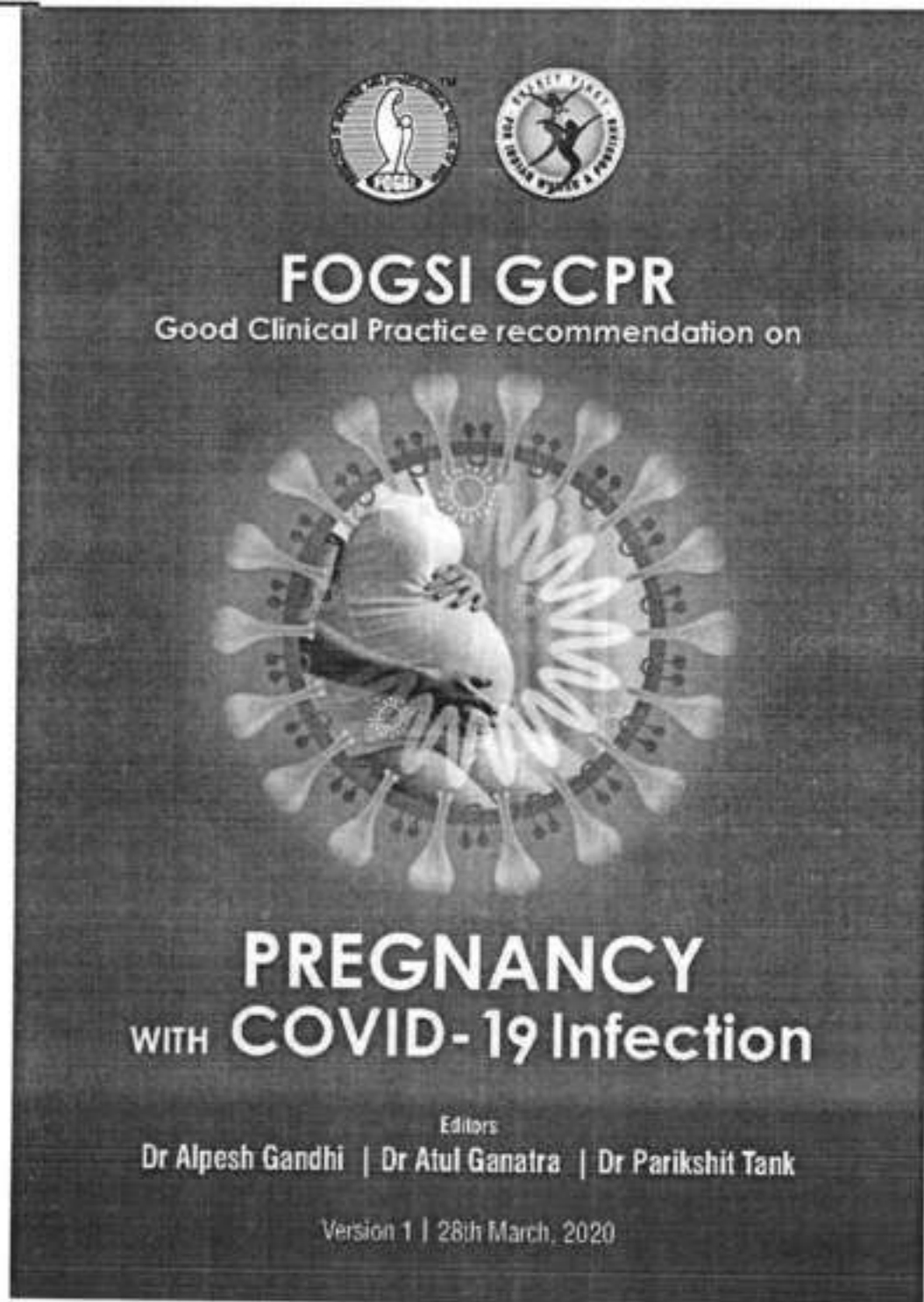
S.No	Days Available	Name	Mobile No	Email id
1.	Monday	Dr. Zarir Udawadia, PD Hinduja Hospital	9820225309	zfudwadia@gmail.com
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3.	Wednesday	Dr. Vasant Nagvekar, Lilavati hospital	9820055178	drnagvekar@gmail.com
4.	Thursday	Dr. Kedar Toraskar, Wockhardt Hospital	9819844451	drkedart@hotmail.com
5.	Friday	Dr. Om Shrivastav, Kasturba Hospital	9869118780	omshrivastav70@gmail.com
6.	Saturday	Dr. Shashank Joshi	9820186302	Shashank.sr@gmail.com
7.	Sunday	Dr. Rahul Pandit, Fortis Hospital	9820595519	icupandit@gmail.com

11. ACCEPTANCE AND ACKNOWLEDGEMENT

We have gone through the contents we agree and acknowledge the same.

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2.	Dr. Zarir Udawadia	Member	
3	Dr. Shashank Joshi	Member	
4	Dr. Vasant Nagvekar	Member	
5	Dr. Kedar Toraskar	Member	
6	Dr. Rahul Pandit	Member	
7	Dr. Nitin Karnik	Member	
8	Dr. Zaheer Virani	Member	
9	Dr. Om Srivastava	Member	
10	Dr. Khusrav Bajan	Member	
11	Dr. Pravin Bangar	Convener	

12. Annexure I - Protocol for covid positive pregnant ladies





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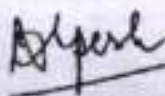
Disclaimer: The recommendations in this document are based on limited evidence as available now. As new evidence accumulates, some of the recommendations may change. This would be guided by growing global and Indian experience, published literature, guidelines from international and national professional bodies, and government policies. Users should use these recommendations in accordance with the latest government regulations and advisories.

FOREWORD

The coronavirus COVID-19 pandemic is upon us. This is a crisis of global proportions which has transformed our world view. The novel infection brings with it uncertainty. Knowledge is evolving in every aspect of the infection and its spread.

There is going to be every chance that community spread may happen in the next few days or weeks in India. The Government is trying its best to prevent the spread by lockdowns, self isolation, awareness, testing on a mass scale and prophylaxis. At present, healthcare providers are in a preparation mode. Matters related to childbirth cannot be delayed indefinitely. Given the propensity of this virus to affect large numbers, it will be inevitable that we will be caring for women infected with COVID-19 in pregnancy and for childbirth in the shortly foreseeable future. The maternity healthcare providers and facilities need to prepare for the situation with a view to prevent the consequences of the infection on the mother and her newborn. The other aspects that are vital are to prevent the spread of the infection from the infected woman to other pregnant women and the public at large. Healthcare providers need to keep themselves safe while they do this.

Healthcare systems everywhere in the world are under pressure. The pressure is not only of numbers and heavy workload but also dealing with an unknown pathogen. There are limitations of infrastructure, supply chains and availability of equipment and medications which will inevitably occur. In times of a lockdown, even transport of healthcare providers to and from the hospital is a challenge. The guidance in the next few pages is our attempt to present the ideal options and some real world experiences and alternatives. Team FOGSI hopes that it will be a useful resource to every FOGSIan and healthcare worker.



Dr Alpesh Gandhi
President FOGSI

EXECUTIVE SUMMARY



Measures for Pregnant Women to Prevent COVID-19 Infection

Social Distancing – could be the single most important intervention at population level
Do Not Tise – Staying at home, Hand hygiene, Respiratory hygiene, Avoiding touching the face and Keeping distance should be practiced



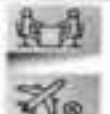
Precautions for healthcare workers (HCW)

HCWs as they are at high risk of getting infected. Precautions are necessary to protect themselves and prevent spread to others.



Distancing – where possible, HCW should keep a distance and practice hand hygiene
Personal Protective Equipment (PPE) – Use should be according to clinical situation.
Covering of all surfaces especially hands and face is vital. Proper technique to wear and remove PPE is essential.

Chemoprophylaxis – is recommended with Hydroxychloroquine only for HCW with known contact of COVID-19 positive patients. In case of nosocomial exposure, complete protocol should be followed



Clinical Presentation of COVID-19 in Pregnancy

Most pregnant women will present with mild symptoms and have a similar course to other adults with COVID-19 infection. A history of travel abroad, contact and respiratory symptoms should be elicited at every clinical interaction.



Testing for COVID-19 in Pregnancy

Current testing strategies in India – At present, pregnant women are tested according to same criteria as other adults. It is essentially meant for acute respiratory illness with exposure, travel, contact or a HCW. Test methods and facilities – presently the RT-PCR test from nasopharyngeal swab is used for diagnosis. Guidelines on testing should be followed as per Government of India guidelines. Other investigations – supportive investigations include blood studies for metabolic and systemic assessment and imaging by CT scan with abdominal shielding.

Notification of COVID-19 cases is mandatory

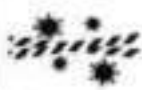
Quarantine for pregnant women –

Should be followed as per general population depending on contact tracing or diagnosis.



Effects of COVID-19 Infection on mother and fetus

Maternal disease does not get aggravated by pregnancy unless there are co-morbidities. There is no evidence of transplacental spread to the fetus at present and fetal anomalies or compromise have not been seen.



Arrangements in existing healthcare facilities to manage COVID-19 exposed and infected pregnant women

Hospitals should have isolation zones which should include outpatient, ward, ICU, labour rooms and operation theatres demanded for COVID-19 infected women.

EXECUTIVE SUMMARY



Termination of pregnancy (MTP), sexual and reproductive healthcare services are time sensitive and their provision is essential during the pandemic for all women.



Assessment of Pregnant women (not in labour) with COVID-19 infection
Recognizing the critically ill woman – Most women will not need hospitalization or critical care. Tachypnoea (> 30/min), hypoxia (SpO₂ < 93%) and imaging showing > 50% lung involvement indicate a need for critical care.



Medical management and drugs used in the treatment of COVID-19 infection in pregnancy
Hydroxychloroquine 600 mg (200 mg thrice a day with meals) and Azithromycin (500 mg once a day) for 10 days has been used successfully. Antiviral therapy (Lopinavir + Ritonavir or Oseltamivir) may be used in high risk groups (immunocompromised, chronic disease, uncontrolled diabetes). Other supportive care should include rest, supplemental oxygen and paracetamol.



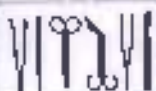
Management of Labour and Delivery in women with COVID-19 infection
There is no rationale to induce labour or deliver a woman early because of COVID-19 infection. Decisions regarding route of delivery should be as per standard obstetric practice in most situations.



Labour Analgesia and Anaesthesia in Pregnant Women with COVID-19 infection
Regional analgesia and anaesthesia can be used in women with COVID-19 infection. Specialized techniques should be adopted for general anaesthesia.



Newborn care should be practiced as per routine. At present, testing is recommended if the mother has COVID-19 infection or if the baby is symptomatic. Breastfeeding can be given with good hygiene practices.



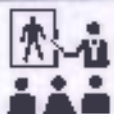
Cleaning, maintenance of facilities and medical equipment should be done with adequate PPE to the HCW. 1% sodium hypochlorite solution with contact time of 30 minutes can be used.



Postnatal Care and Advice to the mother infected with COVID-19 should follow routine practice. If the woman is isolated from the neonate, she should be offered psychological assessment and support.



Diet for the pregnant women and COVID-19 infection should be as per routine. There are no special diets. Rumours related to diet should be dispelled.



Training and managing the healthcare cadre is essential to prevent them from getting infected. Shift arrangements and transport need to be arranged. It is important to keep up morale.

9/2/24

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Introduction

This is an unprecedented global war, and mankind is facing the same enemy, the novel coronavirus. And the first battle is in the hospital where our soldiers are the medical workers.

Novel coronavirus (SARS-CoV-2) is a new strain of coronavirus causing COVID-19, first identified in Wuhan City, China. Its characteristics especially those of person-to-person transmission were documented in December 2019(1).

There are a number of other coronavirus infections that have been identified and are pathogenic to humans, including the common cold, and the viruses that cause MERS (Middle Eastern Respiratory Syndrome) and SARS (Severe Acute Respiratory Syndrome). The COVID-19 strain of coronavirus infection has a high rate of transmission by droplet and through fomites(1). A study showed that stool samples continued to show presence of viral particles for a mean of 28 days after the first symptoms. This is longer than that of samples from the respiratory tract(2). This reiterates the need for hygiene and safe sanitation in general.

It was declared as a pandemic by the World Health Organization on 11 March 2020(3). Most countries across the globe have recognized this as a national emergency and have started taking measures against the infection. The pandemic is at different stages of spread in different countries. At the point of writing this, it has reached 198 countries with more than 8 lakh cases and over 27000 deaths(4).

On reviewing the scientific literature, 1734 articles on the Coronavirus Infection, 86 addressed the issue in pregnant women. A total of eight studies (10 case series/reports and 1 retrospective cohort study) reported outcomes in 73 women with pregnancy and COVID-19 infection. Much of the evidence that we are drawing comes from this cohort of pregnant women(5).

India declared the first diagnosed case on 30 January 2020. The first few cases were related to travel from the Middle East and Italy. As on 27th March 2020 there were 728 confirmed cases in the country and 18 deaths have occurred(6). It is expected that there will be large increase in these numbers if we go into the next stage – that of community spread. As of now, the Indian experience is limited. There is even less to draw from in terms of experience in pregnant women and neonates. We, at FOGSI, are trying to track every pregnancy and delivery process of COVID-19 affected women and learn about the problems faced and their on-ground solutions. This Good Clinical Practice Recommendation (GCPM) is therefore based on international experience and from the statements and guidelines from the Government of India and WHO.

As knowledge evolves, some aspects of this recommendation will change. Newer versions will be released as new evidence emerges.

Measures for Pregnant Women to Prevent COVID-19 Infection

The greatest tool to prevent COVID-19 infection in the general population and for pregnant women is Social Distancing. As per the Government of India advisory, this is a non-pharmaceutical infection prevention and control intervention implemented to avoid/reduce contact between those who are infected with a disease/pathogen and those who are not, so as to stop or slow down the rate and extent of disease transmission in a community(7). The advisory essentially focuses on measures to be taken by local administration in relation to closure of establishments such as schools, universities, gyms, cultural centres, etc. Some important aspects for the pregnant woman in India from this advisory are:

- Disinfection of surfaces to reduce fomites related spread.
- For women working outside the house, it is preferable to take Work from Home.
- Keeping a distance of at least one metre in various necessary interactions and activities.
- Avoid non-essential travel. If travel is undertaken, it is preferable to use a private vehicle. If public transport is used, distance should be maintained.
- Avoid gatherings and functions to celebrate the 7-month milestone, which is a common cultural practice.
- Minimal visits from family to meet the mother and newborn after delivery.

For the asymptomatic and uninfected woman, at present, the recommended strategy for antenatal care is to defer routine visits (8). They can consult the healthcare provider telephonically or through a web platform for minor ailments and questions. Essential milestone visits such as the 12 and 18 week scans are needed. Women are advised to note fetal movements everyday. The next visit can be at 32 weeks pregnancy.

Pregnant women are a special category in terms of healthcare and are possibly more susceptible. They should therefore, follow these guidelines faithfully. They can protect themselves by the motto 'Do no Harm'. The principle elements of this are:

Home	<ul style="list-style-type: none"> • Stay at home as much as possible unless there is a medical need related to development of symptoms of infection or related to pregnancy. • Routine antenatal visits are to be deferred. If there is a minor query, it can be sorted out telephonically. At present, telephonic consultations are permitted by the Medical Council of India if the situation comes under control (5). • Keep the traffic of home visitors including home care personnel, maids, and staff members to a minimum or avoid completely if possible.
Hands	Washing their hands frequently and properly with a soap and water or an alcohol-based hand rub for minimum 20 seconds.
Elbow	Covering their mouth and nose with their bent elbow, handkerchief or tissue when coughing or sneezing. Then the used tissue should be discarded immediately. This is an important component of respiratory hygiene.
Face	Avoid touching face, eyes, nose and mouth with hands.
Space	Keep a distance of at least 1 meter from the next person outside and in the house.

Precautions for healthcare workers

Why are precautions necessary for healthcare workers?

Healthcare workers are at high risk of acquiring the COVID-19 infection when they are caring for patients. This is because of the contact with large numbers of patients, close contact and procedures when there is spray/aerosolization (resuscitation, ventilation) or splash of body fluids (labour, delivery, surgical procedures). The reason to take universal precautions and use appropriate precautions is therefore, obvious. There is a risk of spread of infection from an infected patient to the healthcare provider and then onward spread to more patients and the population at large. As of early March, it is estimated that 3300 healthcare workers have gotten infected and at least 22 have died. It has been estimated that about 20% of healthcare workers who cared for COVID-19 infected patients in Italy acquired the infection (10). It is also important to note that this is not always the case. With thorough and adequate use of PPE and other protective measures, the experience in Singapore and Hong Kong has been that there was no transmission to healthcare workers (11).

The three principles that healthcare workers should follow are distancing, use of appropriate PPE correctly and decontamination.

As for the general population, the healthcare worker should also consider social distancing as the cornerstone of prevention whenever possible. The following measures may be used. In addition, appropriate PPE:

- Maintaining a distance of at least 1 meter from patients and other healthcare workers. This is possible in clinic settings, however, this may not be feasible during examination, patient care and procedures.
- Removal of essential items from the console, equipment room and room to facilitate cleaning and disinfection and reduce the risk of fomites related spread.
- Regular hand cleaning with soap and water or alcohol based rubster at least 20 seconds.
- Patients should be offered surgical masks if they have respiratory symptoms.

The term "universal precautions" (from the 1980s), refers to the measures taken to prevent the transmission of blood borne infections to health workers. This was later called "standard precautions" to cover the risk of transmission through all body fluids. In settings where the pregnant woman is confirmed to have COVID-19 infection and presents in labour or is undergoing a surgical procedure, there is a need to follow these and some enhanced measures using personal protective equipment (PPE) to prevent acquiring infection through respiratory droplets. The PPE should therefore include masks such as the N95 respirator (properly fitted to size) and face protection by a face shield or at least goggles and other measures(12).

In the event that appropriate gear for PPE is not available at a particular unit, consider transferring the patient to a centre which is better equipped. If it is an emergency situation and there is limited PPE, it should be allocated to the workers who are caring for pregnant women who are confirmed cases or those who present with symptoms suggestive of acute respiratory illness or those who were close contacts of confirmed cases.

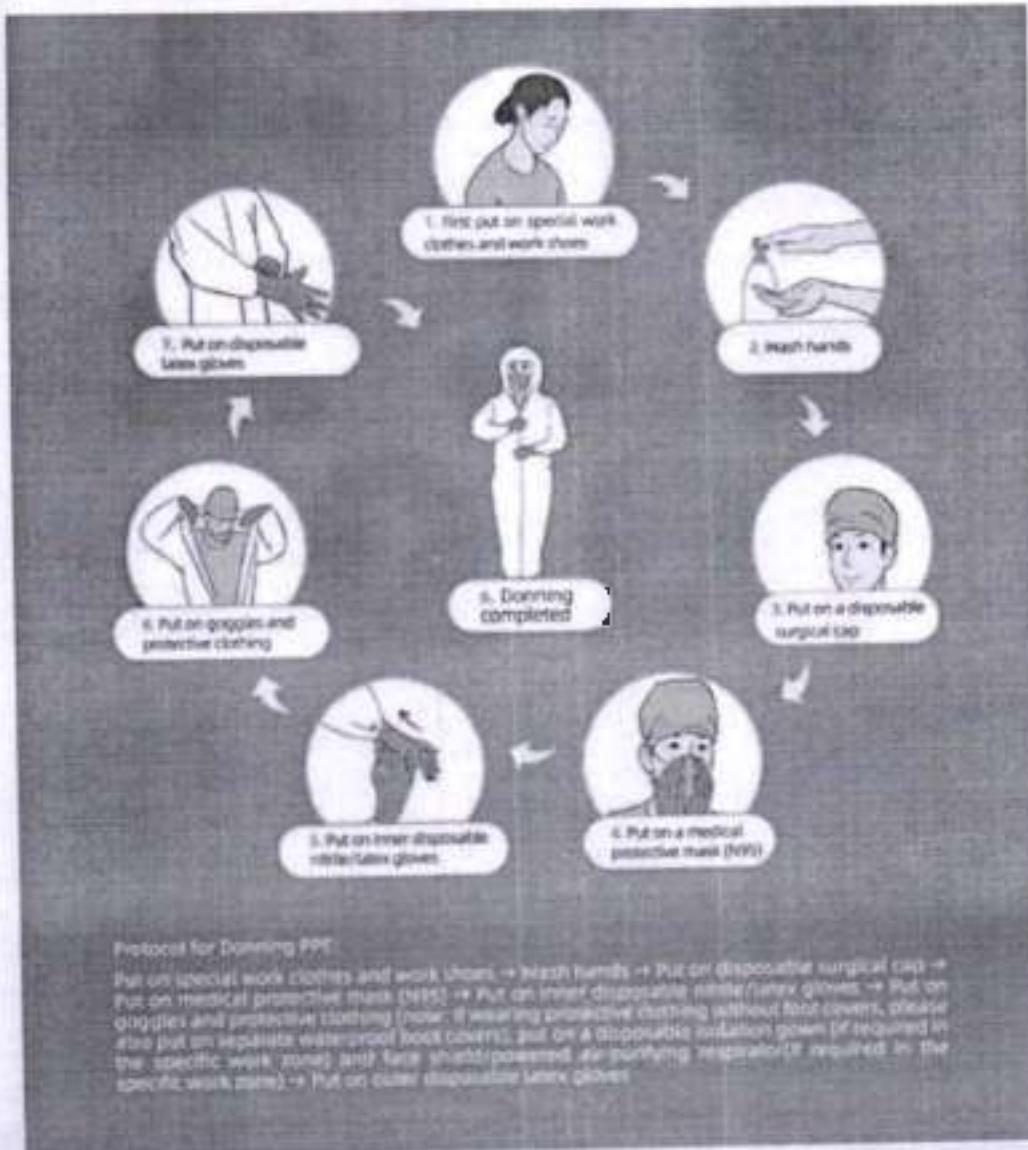
The following recommendations are available from the Handbook of COVID-19 Prevention and Treatment from the Zhejiang University School of Medicine(13).

Personal Protective Equipment in relation to COVID-19 Infection management

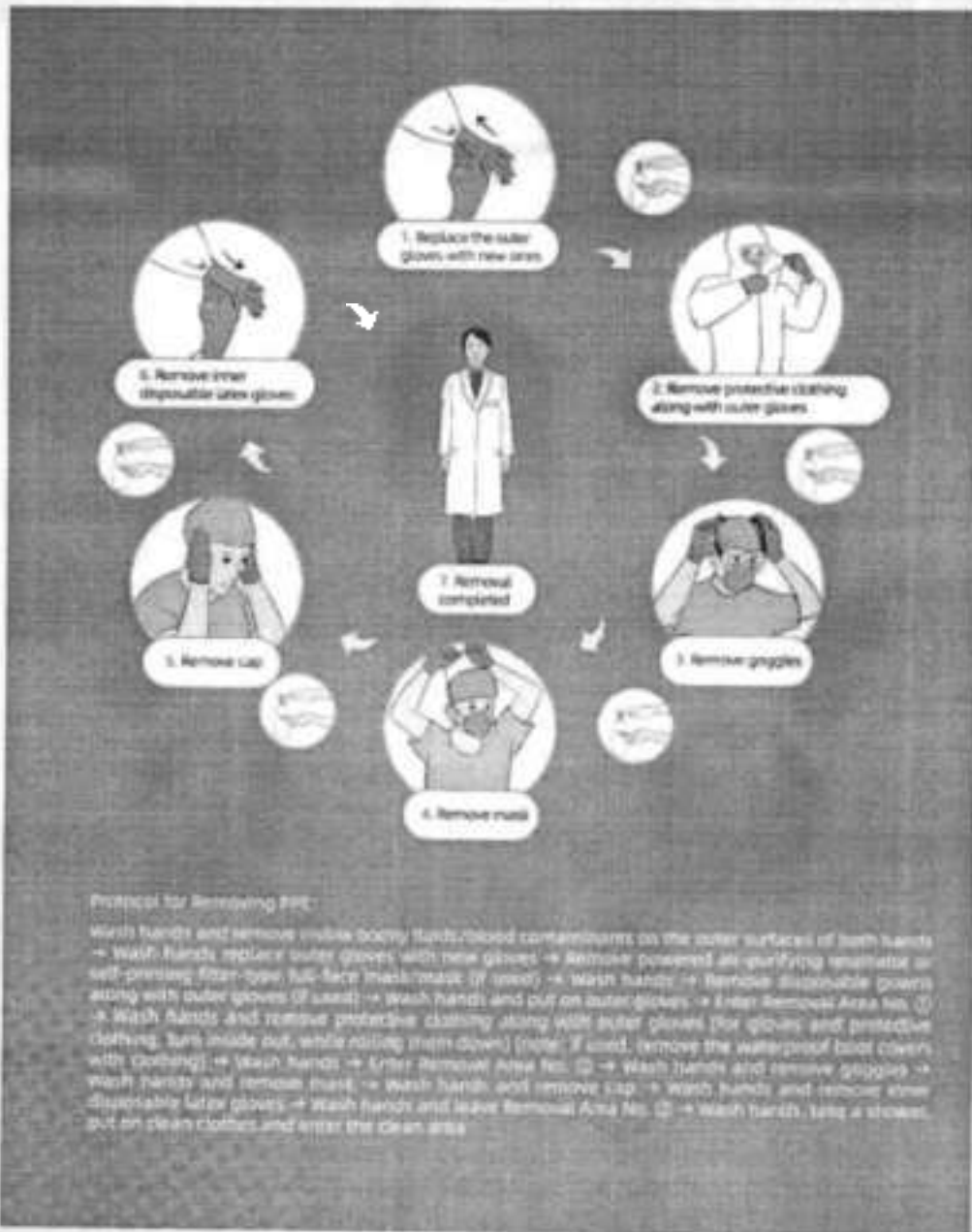
Protection Level	Protective Equipment	Scope of Application
Level I protection	Disposable surgical cap Disposable surgical mask Work uniform Disposable latex gloves and/or disposable isolation clothing	<ul style="list-style-type: none"> ➤ Pre operation stage, general inpatient department
Level II protection	Disposable surgical cap Medical protective mask (N95) Work uniform Disposable medical protective uniform Disposable latex gloves Goggles	<ul style="list-style-type: none"> ➤ Fever outpatient department ➤ Non-respiratory specimen examination of suspected/confirmed patients ➤ Imaging examination of suspected/confirmed patients ➤ Cleaning of surgical instruments used with suspected/confirmed patients
Level III protection	Disposable surgical cap Medical protective mask (N95) Work uniform Disposable medical protective uniform Disposable latex gloves Full face respiratory protective device or powered air-purifying respirator	<ul style="list-style-type: none"> ➤ Intubation, resuscitation of suspected/confirmed patients where there is a risk of spray or splash of respiratory secretions of body fluids or blood ➤ Surgery, procedures, delivery of suspected/confirmed patients ➤ Autopsy of suspected/confirmed patients

The procedure of wearing (donning) and removing (doffing) of the PPE should be strictly followed as has been illustrated in the following two diagrams.

Guidance on Donning/Removing Personal Protective Equipment (PPE) to manage COVID-19 Patients

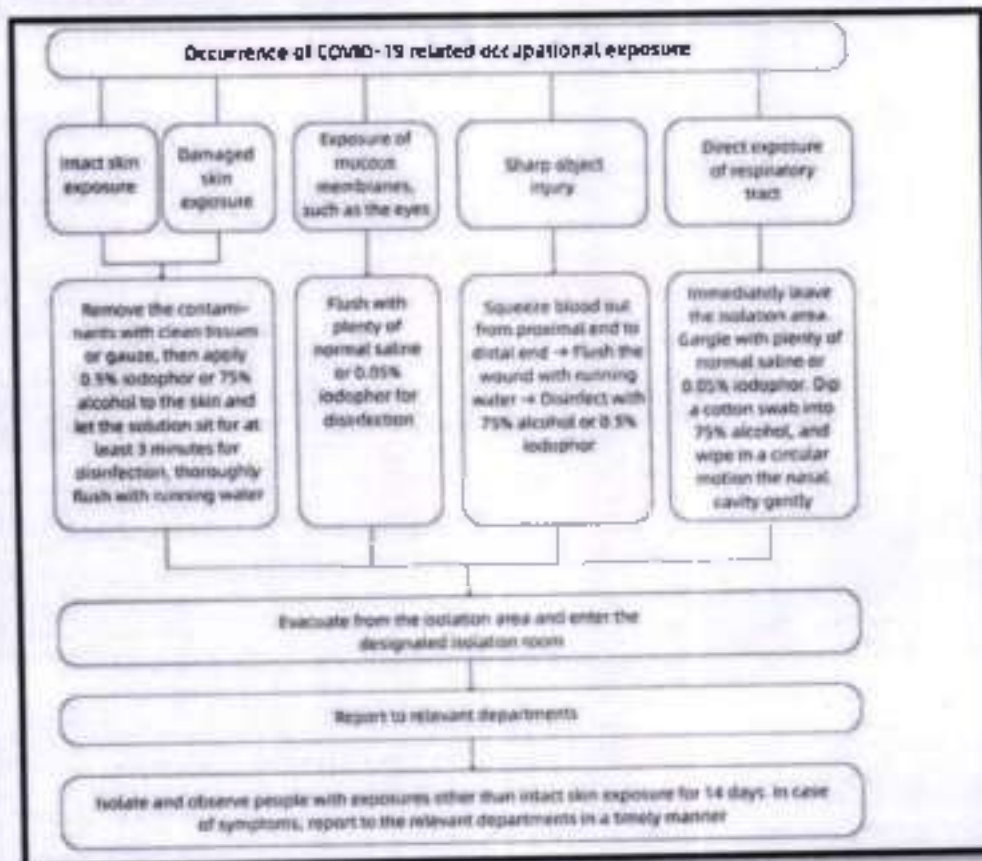


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In addition to the above two measures, the Indian Council of Medical Research (ICMR) also recommends the use of hydroxychloroquine as prophylaxis for asymptomatic healthcare workers caring for suspected or confirmed COVID-19 infected patients (14). The recommended regimen is to take the tablet of 400 mg hydroxychloroquine twice a day on day 1 and then once weekly for 7 weeks. The medicine should be taken with meals. It is contraindicated in case of known sensitivity to the drug or if a healthcare worker suffers from G6PD deficiency or retinopathy. The healthcare worker should not fall into a false sense of security when pharmacoprophylaxis is being used and the other preventive measures should be followed.

In case of accidental occupational exposure, the following protocol should be followed in addition to pharmacoprophylaxis (15).



Clinical Presentation of COVID-19 In Pregnancy

The mean incubation period (from exposure to the appearance of clinical features) is 5 to 7 days. Most people who are infected will show features latest by 11 days of exposure (15). A history of travel abroad or contact with someone who has travelled abroad should be included in the history taking. The majority of people (pregnant and general population) present with respiratory symptoms of COVID-19 infection. Pregnant women don't appear to be more susceptible to consequences of infection of COVID-19 than general population (16).

Most pregnant women will have mild to moderate flu-like symptoms of cough, sore throat, and fever. Few may have difficulty in breathing or shortness of breath. These have been classified as features of severe acute respiratory illness (SARI) by the WHO. Pregnant women, especially those with associated medical diseases (diabetes, asthma, etc) may present with pneumonia and marked hypoxia. Immunocompromised and elderly pregnant women may present with atypical features such as fatigue, malaise, body ache and/or gastrointestinal symptoms like nausea and diarrhea (17).

At the time of every patient contact, irrespective of the reason for the clinical meeting with a pregnant woman, healthcare workers should enquire about features of SARI, travel abroad and/or contact with a known or possible COVID-19 infected person through household contact, visitors or attending events where such a person was present.

Testing for COVID-19 in Pregnancy

Indications (Criteria)

The criteria for offering a laboratory test are the same for pregnant women and the non-pregnant population. Currently, as per the guidance given by the Indian Council for Medical Research (ICMR) pregnant women should be tested in the following circumstances (18).

1. A pregnant woman who has acute respiratory illness with one of the following criteria:
 - a history of travel abroad in the last 14 days (3 March 2020 onwards). In addition to testing, these individuals (with or without symptoms) and their household contacts should have quarantine for 14 days.
 - is a close contact of a laboratory proven positive patient or
 - she is a healthcare worker herself or
 - hospitalized with features of severe acute respiratory illness.
2. A pregnant woman who is presently asymptomatic should be tested between 5 and 14 days of coming into direct and high risk contact of an individual who has been tested positive for the infection.

As per the guidance from the Government of India, direct and high risk contact is defined as those living in the same household, traveling together by any conveyance, working together in close proximity (same room), or healthcare workers providing direct care (19).

This testing strategy may evolve and recommendations may change. Some countries such as South Korea and the experiences in Shanghai were shaped by more widespread testing. In this approach, the rationale is to identify as many infected individuals as possible and isolate or quarantine them before they infect others. The counterpoint to this is that as community spread occurs, over 50% of the population is likely to carry the virus and it could mean a large outbreak on testing which may not necessarily change the general recommendations of social distancing and hygiene which are already being propagated.

Test methods and facilities

The ICMR recommends collection of a nasopharyngeal swab specimen to test for COVID-19 (20). An oropharyngeal swab can be collected but is not essential; if collected, it should be placed in the same container as the nasopharyngeal specimen. Sputum should only be collected from patients with productive cough; indication of sputum is not indicated. COVID-19 is detected by reverse-transcription polymerase chain reaction (RT-PCR). The test should be performed from a center which is authorized by the government of India and state governments. There are 114 ICMR approved public laboratories where the test can be done. The government has allowed testing to be conducted at private laboratories from 22 March 2020. The detailed guidelines on testing are available on the ICMR website (21) (22). It highlights the preference for home collection of samples, maintaining safety during transport and disposal, guidance on disclosing results and fees. The cost of the test has been capped in private labs at Rs 4500/-. Reports should generally be available in 24 hours. Rapid test is indicated only if clinically warranted. More rapid molecular diagnostic tests which have been manufactured in India approved by FDA and ICMR which can give results in 2-3 hours may be available soon.

At present, the RT-PCR test is recommended by the ICMR. However, false negative tests are known to occur to the rate of 10-30% even with two serial swabs tested by the RT-PCR technique. In the near future, testing may be conducted by Nucleic Acid Amplification Test (NAAT) or by serological testing. NAAT is a gold standard test. It is

expensive and involves the risk of the application of viral particles. Serological testing is faster and cheaper. At a population level, serological testing may be more feasible to see the prevalence. Also, after 3 weeks of infection, the RT-PCR would be negative, but serology would give the diagnosis (13).

Other investigations

Other laboratory findings that have been seen with COVID-19 infection are leucopenia, lymphocytopenia, mild thrombocytopenia, mild elevation of liver enzymes and other acute infection markers. Co-infection with other common respiratory pathogens and the common cold virus are often seen with COVID-19.

CT scan and other imaging modalities usually show patterns consistent with atypical pneumonia. In cases where an X-Ray is taken or a CT scan is needed for a pregnant woman, there should be provision of an abdominal shield to protect the fetus from radiation exposure. An informed consent for the imaging should be taken from the pregnant woman and her relatives.

Notification of COVID-19 cases

Guidelines for notifying COVID-19 affected persons by Private Institutions have been given by the Government of India (20). In the wake of the prevailing COVID-19 situation, it is of utmost importance that each and every case (suspected/confirmed) of COVID-19 is isolated and provided appropriate treatment and their contacts are traced at the earliest to break the chain of transmission.

It is important that support and cooperation of private sector is enlisted, in this regard, therefore, it shall be mandatory for all hospitals (Government and Private), Medical officers in Government health institutions and registered Private Medical Practitioners including AYUSH Practitioners, to notify such person(s) with COVID-19 to concerned District surveillance unit.

All practitioners shall also get the self-declaration forms (enclosed) for those who, with their knowledge, are having travel history of COVID-19 affected areas. In case, the person has any such history in the last 14 days and is symptomatic as per case definition of COVID-19, the person must be isolated in the hospital and will be tested for COVID-19 as per protocol. Information of all such cases should be given to the State helpline number (list enclosed) and also to national helpline: 1075. E-mail may also be sent at ncov2019@gov.in.

Quarantine for pregnant women in the times of COVID-19 pandemic

The term Quarantine is used to separate and restrict the movement of well persons who are known to be exposed (directly or indirectly) or suspected to be exposed to a communicable disease to see if they become ill. These people may have been exposed to a disease and remain asymptomatic. Quarantine may be at home or in a facility designated by the state which includes hotels, guesthouses or hospitals. This has been shown to be an effective measure against the spread of infection (24). On the other hand, Isolation refers to the separation and restriction of movements of ill persons who have a contagious disease in order to prevent its transmission to others. It typically occurs in a hospital setting or a special facility. At present, in India, all symptomatic patients who have a positive test for COVID-19 are being isolated.

The criteria for quarantine are the same for pregnant women and the general population. These criteria, duration and measures may be changed with the passage of time as per advice of the Government of India (25). A contact in the context of COVID-19 is:

- A person living in the same household as a COVID-19 case
- A person having had direct physical contact with a COVID-19 case or his/her infectious secretions without recommended personal protective equipment (PPE) or with a possible breach of PPE
- A person who was in a closed environment or had face-to-face contact with a COVID-19 case at a distance of within 1 meter including air travel

Instructions for contacts, being home quarantined

The home quarantined person should:

- Stay in a well-ventilated single room preferably with an attached/separate toilet.
- If another family member needs to stay in the same room, it's advisable to maintain a distance of at least 1 meter between the two.
- Needs to stay away from elderly people, pregnant women, children and persons with co-morbidities within the household.
- Restrict his/her movement within the house.
- Under no circumstances attend any social/religious gathering e.g. wedding, condolences, etc.

General health measures to be followed in quarantine include hand washing, avoiding sharing fomites, wearing a surgical mask and changing it every 3 to 4 hours with correct disposal in 1% hypochlorite solution. If symptoms appear during quarantine, the pregnant woman should contact a health facility by telephone and follow the given advice.

Family members of the pregnant woman quarantined at home should keep a distance from her at all times and avoid direct contact with her and her domains. Disposable gloves should be used in case soiled linen has to be handled. Visitors should not be allowed. Clothes should be washed separately.

The duration of home quarantine is 14 days from the time of exposure to a confirmed case or earlier if a test is performed on a suspect case and it is negative.

Effects of COVID-19 Infection on mother and fetus

Pregnant women do not appear to be more likely to be severely unwell than other healthy adults if they are infected with COVID-19 as per currently available data. It is expected that the large majority of pregnant women will experience only mild or moderate cold/flu like symptoms.⁽⁹⁾ With other viral infections such as the flu, maternal disease may be more severe. However, this has not been documented with COVID-19 infections at present. As seen with the general population, the risk factors for more severe disease may be found in pregnant women and if the pregnant woman has co-morbid conditions such as diabetes, hypertension, obesity, respiratory disease or is of advanced age, she is more likely to have a severe form of respiratory disease. The caregiver should be watchful for worsening of symptoms and the clinical picture in these women.

Preliminary research suggests that the infection is not transmitted from the mother to child by placental transfer or through secretions in the perinatal tract. In two reports (15)(20) including a total of 78 pregnant women with suspected or confirmed COVID-19 pneumonia, all of the newborns, who were delivered via caesarean section, tested negative for the coronavirus, and there were no traces of the virus in the mother's amniotic fluid, umbilical cord or breast milk.⁽²⁶⁾⁽²⁷⁾

With the limited number of deliveries to COVID-19 infected women, at present, there is no evidence of any fetal effects of the infection in terms of fetal abnormalities or other fetal parameters of growth, amniotic fluid or doppler studies. There is no rationale for recommending amniocentesis to detect fetal infection at this time. An ultrasound 14 days after the infection can be considered for the pregnant women who has recovered from infection. At present, there is no evidence of higher risk of abortion with COVID-19 infection. At present, there is no evidence of higher risk of preterm labour with COVID-19 infection. However, as with systemic disease which can compromise maternal health, there is a possibility that preterm labour may occur in these situations.

Arrangements in existing healthcare facilities to manage COVID-19 exposed and infected pregnant women
In an ideal world, the management of COVID-19 exposed or infected pregnant woman would be carried out in a dedicated unit where other women are not being cared for and therefore the risk of transmission is minimized. In this

deal set-up, there should be three demarcated zones – clean, potentially contaminated and contaminated with exclusive passageways to minimize exposure of individuals to each other once they have been allotted into these

zones. Each of these zones would then have its own facility to deal with outpatient, inpatient care and intensive care management. It may be beneficial for the entire contaminated zone (wards, labour rooms, operation theatres and ICU) to have a negative pressure system to limit the spread of infection. Whenever possible, it may be beneficial for the entire contaminated zone (wards, labour rooms, operation theatres and ICU) to have a negative pressure system to limit the spread of infection.

However, it may not be feasible to create such facilities everywhere. Therefore, the same principles should be applied to the existing facilities as far as possible. The purpose is to minimize the chance of contact between infected and non-infected pregnant women.

Every pregnant woman should be triaged at entry and then allotted into one of the zones depending on the presentation.

Infected	Potentially Infected	Clean
<ul style="list-style-type: none"> Tested and shown to be positive for COVID-19 	<ul style="list-style-type: none"> Symptoms of SARI Contact with infected individual Travels abroad in the last 14 days Health care worker caring for COVID-19 infected individuals Test result is awaited 	<ul style="list-style-type: none"> No symptoms of SARI No contact with infected individual No travel history

The infected and potentially infected pregnant women should be kept in separate isolation areas. Each isolation area includes isolation wards, and an isolation ICU area. If possible, each patient should be kept in a separate room with an attached bathroom.

Access to isolation areas should be strictly limited. Family visits and nursing should be declined. Patients should be allowed to have their electronic communication devices to facilitate interactions with the family and friends.

Termination of pregnancy (MTP), sexual and reproductive healthcare in times of COVID-19

Abortion and reproductive healthcare may be affected by delayed presentations by the woman, lack of availability of providers and disruptions of the supply chain of material and drugs. Abortion care is essential healthcare. It is critical to ensure that women who seek abortion and family planning do not suffer from lack of access. It is well established that early abortions are safer for women and the MTP Act places limits on the gestational age for abortions. This makes the provision of abortion time sensitive. It is also well established that women who seek an abortion tend to get it one way or another. A lack of these services may mean that women seek an abortion from unsafe providers and put themselves in harm's way. The services should therefore continue to be provided by public and private providers.

Assessment of Pregnant women (not in labour) with COVID-19 Infection

If a pregnant woman is confirmed by tests to have COVID-19 infection, the first step is to assess the systemic status.

1. If asymptomatic, the woman should be quarantined in the hospital as per current practice. The measures to be taken are discussed in the previous section. If the numbers increase, the Government guidelines on hospital admission for quarantine may change. She should self monitor and report if symptoms arise.
2. If symptomatic, a decision needs to be made as to the requirement of hospitalization or further intensive care.

Hospitalization	Intensive Care (to be managed by critical care specialists) (13)
As of date (25 Mar 2020), all confirmed cases are being hospitalized in India for isolation and observation to watch for progress of symptoms	Pregnant women who meet any of the following criteria: <ul style="list-style-type: none"> • respiratory rate > 30 breaths/min; • oxygen saturation < 93% at a rest; • arterial partial pressure of oxygen (PaO₂)/oxygen concentration (FiO₂) < 300 mm Hg • Patients with > 50% lesions progression within 24 to 48 hours in lung imaging • Quick Sequential Organ Failure Assessment Score (qSOFA) score can be a useful adjunct to decision making for ICU management.
In the future, if there is a need to restrict hospitalization due to limited bed availability, pregnant women should be hospitalized if they have clinical or imaging features of pneumonia or systemic disease	

A quick bedside assessment tool is also useful for sepsis (typically for bacterial infections) screening in triage called the quick SOFA (qSOFA) score. Includes 1 point for each of 3 criteria.

qSOFA SCORE				Score ≥ 2 is suggestive of sepsis and needs intensive care
Number	Criteria		Point	
1.	Respiratory rate	≥ 22 breaths/min	1	
2.	Mental status	Altered	1	
3.	Systolic blood pressure	≤ 100 mm hg	1	

Medical management and drugs used in the treatment of COVID-19 infection in pregnancy

Supportive therapy for COVID-19 infections should include rest, oxygen supplementation, fluid management and nutritional care as needed.

The treatment of COVID-19 viral infection has been scripted by two approaches. The first approach is the use of a combination of Hydroxychloroquine and Azithromycin. These drugs are readily available and cost-effective in India. The other approach has been to use several drugs, some of which are not yet available in India.

Hydroxychloroquine in a dose of 600 mg (200 mg thrice a day with meals) and Azithromycin (500 mg once a day) for 10 days has been shown to give virological cure on day 6 of treatment in 100% of treated patients in one study (28). The study included 20 treated patients with upper and lower respiratory symptoms. In this study, pregnancy was an exclusion criteria. However, as such, both these drugs have been used in pregnancy and during breastfeeding without significant effects on the mother or fetus. Alternative dosage regimens for hydroxychloroquine are to give 400 mg twice a day on day 1 and then 400 mg once a day for the next four days. Chloroquine can also be used as an alternative. The dose is 500 mg twice a day for 7 days. Some authorities recommend that azithromycin should be added only when there is a clinical suspicion of secondary bacterial infection (29).

Antiviral Therapy

Lopinavir-ritonavir was the first antiviral combination used in an attempt to treat COVID-19 infection. This may be considered as a possible line of treatment for those who have chronic disease, immunocompromise or uncontrolled diabetes. However, there was no difference in time to clinical improvement or mortality at 28 days in a randomized trial of 198 patients with severe COVID-19 given lopinavir/ritonavir (400/100 mg) twice daily for 14 days in addition to standard care versus those who received standard of care alone(30).

Other agents such as Remdesivir are being evaluated in a randomized trial(25).

In India, some health authorities have prescribed a regimen of Oseltamivir 75 mg twice a day for five days in conjunction with hydroxychloroquine(31). The recommendation is based on the experience of the H1N1 (swine flu) experience. At present, data on this regimen is limited. The regimen is simple, cost effective and the drug is available easily.

Vaccine

At present, a number of organizations in the public and private sector are working towards the development of a vaccine. Some safety trials have been initiated. However, it is estimated that a vaccine would be available to use only after 6-12 months(32).

Other Drugs

A number of other drugs that are used in the management of pregnant women with COVID-19 infection are discussed below.

NSAIDs: These are the drugs used most often in the care of COVID-19 infected pregnant women for symptomatic relief of fever and myalgia. Paracetamol is the preferred drug. If possible, ibuprofen and other NSAIDs may be avoided because there are concerns about potentiating ACE receptors.

Antenatal Steroids (dexamethasone): Steroids are recommended for enhancing fetal lung maturity in situations where preterm delivery is likely between 24 to 34 weeks of gestation. There is no documented evidence of the use of steroids in COVID-19 infection. However, glucocorticoids have been associated with an increased risk for mortality in patients with influenza and delayed viral clearance in infants. Therefore, the use of steroids needs to be individualized based on the woman's condition and should be discussed with her and her family.

Anti-hypertensives: There is controversy surrounding the use of ACE (Angiotensin Converting Enzyme) inhibitors and ARBs (Angiotensin Receptor Blockers) in the general population, especially the elderly with hypertension. In pregnancy, these drugs are not to be used due to their known deleterious effects on the fetus. The point of using them in pregnant women, therefore, does not arise.

Antibiotics: If there is a suspicion of secondary bacterial infection, appropriate antibiotics which are considered safe in pregnancy should be added.

Oxygen: If there is difficulty in breathing, oxygen supplementation by nasal prongs or mask may be added. High flow nasal oxygen at 4 to 6 litres per minute should be immediately administered. Non-invasive ventilation can also be used. At this point, there should be a reevaluation of the patient's status and consideration should be given to the need for intensive care.

Intensive Care Management

It is estimated that about 15% of COVID-19 infected individuals will need care in hospital and 5% will need intensive care. (1) The outcome of such individuals is largely determined by the underlying co-morbidities and the availability of ICU facilities. In the public sector, India has a hospital bed availability of about 5 per 1000 population and intensive care bed availability of 1.3 per 10000 population. The number of ventilators are about half of what is estimated to be needed if there is a full-blown epidemic in the country(33). Western countries are also facing similar shortages of space, beds, personnel and infrastructure. This has resulted in a triage where care is being accorded only to infected individuals with a good prognosis of survival.

If a woman is identified to need intensive care, it should be done in conjunction with a team of ICU experts. Caring for critically ill pregnant woman patients with COVID-19 is based on management of viral pneumonia with respiratory failure with additional precautions to reduce risk of transmission. The principle evidence based guidelines for AHAs include:

- Conservative intravenous fluid strategies
- Empirical early antibiotic for possible bacterial pneumonia
- Early invasive ventilation may be needed
- Lung protective ventilation strategies
- Periodic prone positioning during mechanical ventilation. There is little evidence on prone positioning in pregnant women. Pregnant women may benefit from being placed in the lateral decubitus position.
- Extracorporeal membrane oxygenation where needed

Labour Triage for women with COVID-19 Infection

A protocol should be in place in every maternity unit to receive pregnant women in labour or suspected labour with confirmed or suspected COVID-19 infection. The outline of the arrangements for healthcare facilities has been mentioned in an earlier section. The same principles should be followed. The following aspects should be borne in mind in planning for the triage process (3):

- The woman should call in advance to alert the maternity unit about her arrival whenever this is possible. This will give some time to the healthcare workers to prepare in triage and don the PPE.
- The woman should use private transport or an ambulance when possible to reach the maternity unit.
- She should be met with appropriately donned PPE at reception itself.
- Reception and triage in the same room as to be used for admission in labour and delivery. This should be a room with negative pressure. If it is not available anywhere.
- Keep the room free from any unnecessary items (decontolow, extra chairs, etc) which could act as infected foci later.
- There should be a restriction on the number of attendants allowed with the woman. There should be a restriction on the entry and exit of non-essential staff into the room. The companion of the woman should be treated as infected and all precautions should be taken.

In the future, if the number of COVID-19 infected patients rises, it is expected that there would be some who would be recognized to have the infection for the first time when they present in labour. Anticipating this, an elaborate advisory to this effect has been issued by the Ministry of Health and Family Welfare on hospital and institutional preparedness(34) and the conduct of mock drills and standard operating procedures(35).

Management of Labor and Delivery in women with COVID-19 infection

In all circumstances, maternity care providers should continue to provide client centred, respectful skilled care and support. Birth attendants should be limited to one named contact. There should be adequate use masking of the mother about the infection.

Separate delivery room and operation theatres are required for management of suspected or confirmed COVID-19 mothers. Both should have neonatal resuscitation corners located at least 2 m away from the delivery table. Resources required include space, equipment, supplies and trained healthcare providers for delivery, caesarean section and neonatal resuscitation. The standards and facilities required for infection control in these areas should be same as that for other adults with suspected or confirmed COVID-19 infection.

Following the principles in earlier sections on recognition, offering testing, PPE use and principles of isolation of COVID-19 infected women, this section is restricted to the management of labour and delivery and the modifications necessary in women with COVID-19 infection. Depending on the clinical picture and severity of the condition, a multispecialty team may be involved in caring for the pregnant woman in labour. The anaesthetist and neonatologist should be informed of such a woman presenting in labour.

If a woman presents in preterm labour, tocolysis is contraindicated in following the general principles of avoiding such an intervention with systemic disease. This decision should be individualized depending on the degree of clinical severity of the infection. If there is pulmonary involvement, beta-mimetic agents should be avoided.

Timing of delivery should not be altered on the basis of COVID-19 infection. The presence of infection is not an indication to induce labour or deliver the woman. At present, there is no evidence of transplacental vertical transmission. There would be no rationale in doing so. The exception to this would be the critically ill pregnant woman where delivery may be indicated to relieve the extra metabolic and pulmonary load. However, the possible benefits of this need to be weighed against the possible risks of worsening the systemic status with a surgical intervention. Such a decision has to be guided by individual circumstances including the degree of clinical stability, gestational age, available infrastructure and the couple's wishes.

In labour, monitoring should include the periodic evaluation of the respiratory status with a watch for symptoms of difficulty or shortness of breath, respiratory rate, pulse rate and oxygen saturation on pulse oxymetry. If there is a deterioration of these features, intensive care measures would be required including ventilation.

As such, the pregnant woman with COVID-19 infection can be allowed to labour and indications for interventions should follow standard obstetric practice. With every examination and contact, healthcare workers should be mindful of adequate protective gear. An intravenous access should be established and fluids should be restricted in labour. It may be prudent to offer continuous electronic fetal monitoring in labour for women with COVID-19 infection wherever such facilities are available. The second stage of labour should be cut short to prevent maternal exhaustion and reducing maternal efforts, in case where there is respiratory involvement by the infection.

At present, pregnant women have almost universally been delivered by caesarean section when they present in labour with COVID-19 infection. There is no proven scientific rationale for this. It could reflect local preference and practices (26).

The maternal profiles and neonatal outcome of labour has been described in a study of 33 pregnant women who delivered with COVID-19 infection in Wuhan (37). The study describes the presentation of the women in labour. Three of the 33 neonates were found to be infected in this study. They had mild features of the infection. Excerpted data from the study is presented below.

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	Neonates with SARS-CoV-2, No. (%)	
	No (n = 30)	Yes (n = 3)
Preterm	3 (10)	1 (33)
Small for Gestational Age	2 (7)	1 (33)
Asphyxia	1 (3)	1 (33)
Maternal Features		
Fever on admission	7 (23)	1 (33)
Postpartum fever	4 (13)	1 (33)
Cough	5 (17)	1 (33)
ICU admission	0	0
Fluoruria on admission	33 (100)	3 (100)
Nasopharyngeal swab	30 (100)	3 (100)
Delivered by caesarean	23 (77)	3 (100)
Premature rupture of membranes	2 (7)	1 (33)

Labour Analgesia and Anaesthesia in Pregnant Women with COVID-19 Infection

Following the principles in earlier sections on recognition, PPE use and principles of isolation of COVID-19-infected women, this section is restricted to the specific aspects of anaesthesia in labour and delivery. A team of anaesthetists should be available with a senior anaesthetist taking the clinical lead. There is interim guidance on the subject of obstetric analgesia and anaesthesia with COVID-19 infection(38).

There is no evidence that epidural or spinal analgesia or anaesthesia is contraindicated in the presence of coronavirus. Therefore, a COVID-19 infected woman who is fit enough to labour can be offered epidural analgesia. If she requires a caesarean delivery, the same epidural can be continued and a general anaesthesia can be avoided. If a woman who has not had an epidural anaesthesia requires a caesarean birth, the choice of anaesthesia is governed by the general health status of the woman. For most women, spinal anaesthesia by standard techniques is suitable. However, in a situation where there is respiratory compromise, general anaesthesia and subsequent ventilation will be needed.

If general anaesthesia is administered, preoxygenate the patient for five minutes with 100% O₂ and perform rapid sequence induction (RSI) to avoid manual ventilation of the patient's lungs. Use a video laryngoscope to improve intubation success and avoid awake fiberoptic intubations, when possible. This is a procedure that induces aerosolization. The need for using full PPE is reiterated. Place a high efficiency hydrophobic filter between the facemask and breathing circuit or between the facemask and reservoir bag to avoid contaminating the atmosphere.

Testing for the Newborn

The care of the newborn should be in the hands of a neonatologist or paediatrician. Some areas of concern regarding testing of the newborn are mentioned below to help with counselling the mother and family(5).

Which neonates to test?	<ul style="list-style-type: none"> • Neonates born to mothers with COVID-19 infection within 14 days of delivery or up to 28 days after birth • Symptomatic neonates exposed to close contacts with COVID-19 infection
When should the neonate be tested	<p>If symptomatic, specimens should be collected as soon as possible</p> <p>If asymptomatic and roomed-in, test only if and when mother's test comes positive. If mother is COVID-19 positive and baby's initial sample is negative, another sample should be repeated after 48 hours.</p>
What sample should be collected of the neonate?	<p><i>Not mechanically ventilated</i> - Upper respiratory nasopharyngeal swab (NP). Collection of oropharyngeal swabs (OP) is acceptable and if collected should be combined in the same tube as the NP.</p> <p><i>Mechanically ventilated</i> - Tracheal aspirate samples should be collected and tested as a lower respiratory tract specimen</p>
How to collect?	<p>Upper nasopharyngeal swab</p> <ul style="list-style-type: none"> • Use only synthetic fiber swabs with plastic shafts. Do not use cotton alginate swabs or swabs with wooden shafts, as they may contain substances that inactivate some viruses and inhibit PCR testing. • Insert a swab into nostril parallel to the palate. Swab should reach depth equal to distance from nostrils to outer opening of the ear. Leave swab in place for several seconds to absorb secretions. Slowly remove swab while rotating it. • Place swabs immediately into sterile tubes containing 2-3 ml of viral transport media. <p>Oropharyngeal swab (e.g., throat swab): Swab the posterior pharynx, avoiding the tongue.</p> <p>Nasopharyngeal wash/aspirate or nasal aspirate</p> <p>Collect 2-3 ml into a sterile, leak-proof, screw-cap container, collection cup or sterile dry container.</p> <p>Other samples: Currently not advised; stool, urine and blood specimens, since the isolation is less reliable than from respiratory specimens. Do not take these specimens for testing (based on current advisory recommendations)</p>

Breastfeeding and the COVID-19 Infected mother

Some viral infections such as cytomegalovirus and HIV are transmitted through breast milk. However, as present knowledge stands, there is no evidence that COVID-19 is secreted in breast milk. The CDC states that "we do not know whether mothers with COVID-19 can transmit the virus via breast milk" (39). It is reassuring that in six Chinese cases tested, breastmilk was negative for COVID-19; however, given the small number of cases, this evidence should be interpreted with caution (27). The main risk for infants of breastfeeding is the close contact with the mother, who is also likely to share infective airborne droplets.

As breast milk is the best source of nutrition and immunity for the infant, LMPA encourages (40). In the light of the current evidence, we advise that the benefits of breastfeeding outweigh any potential risks of transmission of the virus through breast milk. The risks and benefits of breastfeeding, including the risk of holding the baby in close proximity to the mother, should be discussed with her.

This guidance may change as time goes on and more studies and knowledge evolves.

For women wishing to breastfeed, the following precautions should be taken to limit spread to the baby:

- Pregnant women should wash her hands before and after touching her baby.
- Mother should practice respiratory hygiene by wearing a mask and not sneezing in front of a baby during breast feeding.
- All surfaces should be kept clean and disinfected she has touched.
- If a mother is confirmed with COVID-19 infection or who is a symptomatic and wishes to express breast milk with a manual or electric breast pump, the mother should wash her hands before touching any pump and bottle and should follow recommendations for proper pump cleaning after each use.
- Consider asking someone who is well to feed expressed milk to the baby.

When mothers are expressing breast milk in hospital, a dedicated breast pump should be used. For women unable feeding with formula or expressed milk, strict adherence to sterilization guidelines is recommended(36).

If she is too unwell to breastfeed her baby due to COVID-19 or its complications, she can be supported to safely provide breast milk to her baby in a way possible, and acceptable to her.

Cleaning, maintenance of facilities and medical equipment

The isolation areas, procedure and surgical areas and medical equipment should all be handled as potential sources of infection if a COVID-19 pregnant woman has been cared for in these areas(13). While this is being carried out, the worker should wear PPE.

For surface cleaning and disinfection, agents that are useful are alcohol or chlorine based. Alcohol based agents should contain 70% Isopropyl alcohol. Chlorine based solutions are prepared by diluting liquid chlorine (1000 mg/L strength) or freshly prepared 1% sodium hypochlorite solution. The appropriate concentration of sodium hypochlorite for disinfecting general liquid biological waste is approximately 1%. Household bleach is 5 - 6% sodium hypochlorite; therefore a 1:5 (v/v) dilution of bleach to liquid biological waste is appropriate. The contact time of these solutions should be at least 30 minutes.

- Floors, walls and object surfaces should be wiped 2-3 times a day or if there is visible contamination.
- Air can be sterilized by fumigation, plasma air sterilizers or ultraviolet lamps.
- After a procedure, the biological fluids, blood, and fecal matter should be treated with the above solutions before disposal.
- If there is a large fluid spill, sodium hypochlorite powder should be spread over the spill and left in contact for 30 minutes before swabbing or cleaning.
- Reusable medical equipment, linen, fabric and bodies should also be treated with sodium hypochlorite before they are processed further.

Postnatal Care and Advice to the mother infected with COVID-19

Postnatal care of the mother infected with COVID-19 should include continued medical evaluation for respiratory status and symptoms and standard practices of routine postnatal care. She should be encouraged to maintain the good practices of hygiene related to the puerperium and hand hygiene. Advice should include management of engorged breasts when feeding has not been established and measures to enhance breastfeeding after the isolation period is completed. She should consume a healthy, nutritious diet to recover from the infection and build immunity.

The discharge card from the maternity unit should have advice about COVID-19 infection in addition to the usual post-delivery instructions. It should emphasize social distancing and need for evaluation if symptoms of acute respiratory illness (SARI) arise after delivery.

The mother who is recovering from an acute illness and/or is isolated from the infant may be at risk for developing anxiety, postpartum depression and other mental health issues. She should be offered counselling and psychological support. Some women may need a psychiatrist's consultations. These interventions can be safely provided by teleconsultation by remote electronic media. Further into the puerperium, the couple should follow contraceptive practices as per their informed choice.

Diet for the pregnant women and COVID-19 infection

Diet has been the subject of numerous controversies in the wake of the COVID-19 pandemic. It is essential to understand and we state clearly at the outset that there is no particular diet that is recommended to treat or use as part of the treatment against COVID-19 infection in a pregnant woman or in the general population. There is also no evidence that consumption of meat, chicken or eggs leads to a higher risk of acquiring COVID-19 infection.

Certain populations of pregnant women who are at risk may have some benefits from dietary modifications in terms of lowering infection risk such as women who are diabetic, obese or have other metabolic abnormalities. For other pregnant women, there is limited evidence that any dietary substances may improve immune status and reduce infection risk. Based on such limited evidence, dietary advice is generic and would include a high protein diet and vitamin and micronutrient supplementation. Natural sources of these are called superfoods in common parlance and include citrus fruits, ginger, garlic, broccoli, turmeric, pomegranate and spinach. Liver detoxification is essential to reduce toxic burden on our body. While most of the above lack robust evidence, taking these measures will not do any harm, so they should be judiciously used in consultation with the treating doctor.

Training and managing the healthcare cadre

In addition to the general advice on hygiene and social distancing that has been described in earlier sections, some aspects of COVID-19 necessitate special training⁽¹¹⁾⁽¹³⁾. This is especially so with the correct use of PPE. The type of training and measures will depend on the type of work that a staff member performs in the hospital. A baseline sensitization should be carried out for every staff member to make them aware of the risk of infection and dispel undue myths and rumors.

Before working in a ward, delivery room, or operation theatre, staff (including doctors – junior and senior) must undergo training and examinations to ensure that they know how to put on and remove personal protective equipment.

If case loads increase, the staff should be divided into different teams. Each team should be limited to a maximum of 4 hours of working in an isolation ward. The teams shall work in the isolation wards (contaminated zones) at different times. Arrange treatment, examination and disinfection for each team as a group to reduce the frequency of staff moving in and out of the isolation wards. Before going off duty, staff must wash themselves and conduct necessary personal hygiene regimens to prevent possible infection of their respiratory tracts and mucosa.

Operating with PPE gear can be a formidable task as has been described from some personal experiences. There can be difficulty with communication (hearing is reduced). Therefore it is good to have a set operating team which is generally familiar with standard operative steps of a particular procedure. Also, tactile sensation is diminished. This may lead to increase in operative time. Airconditioning has to be switched off to prevent the spread of the virus into the atmosphere and the operating team is faced with heat, perspiration and humidity. These challenges require fortitude and preparation to overcome them.

Keeping up the team spirit is essential

- Workplace safety is a high priority, active training in the proper use of barrier precautions and hygiene practices is important.
- Psychological stress and burnout of healthcare workers is common, so provide emotional support, encouragement and appreciation.
- Reduce stigmatization of ill-informed members of the public.

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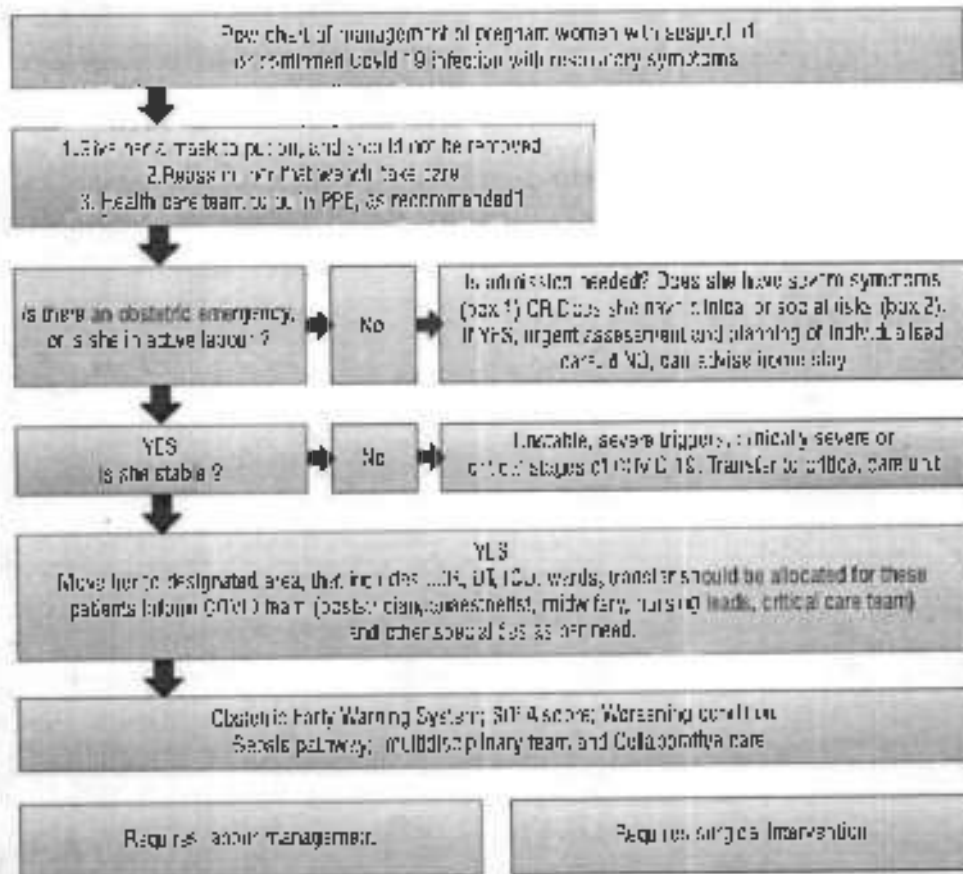
- Special provision of meals to boost morale; laundry service for used scrubs
- Provision of frequent updates and encouragements
- Health Insurance
- Care of workers who may have medical conditions should be given appropriate care themselves.

Consent

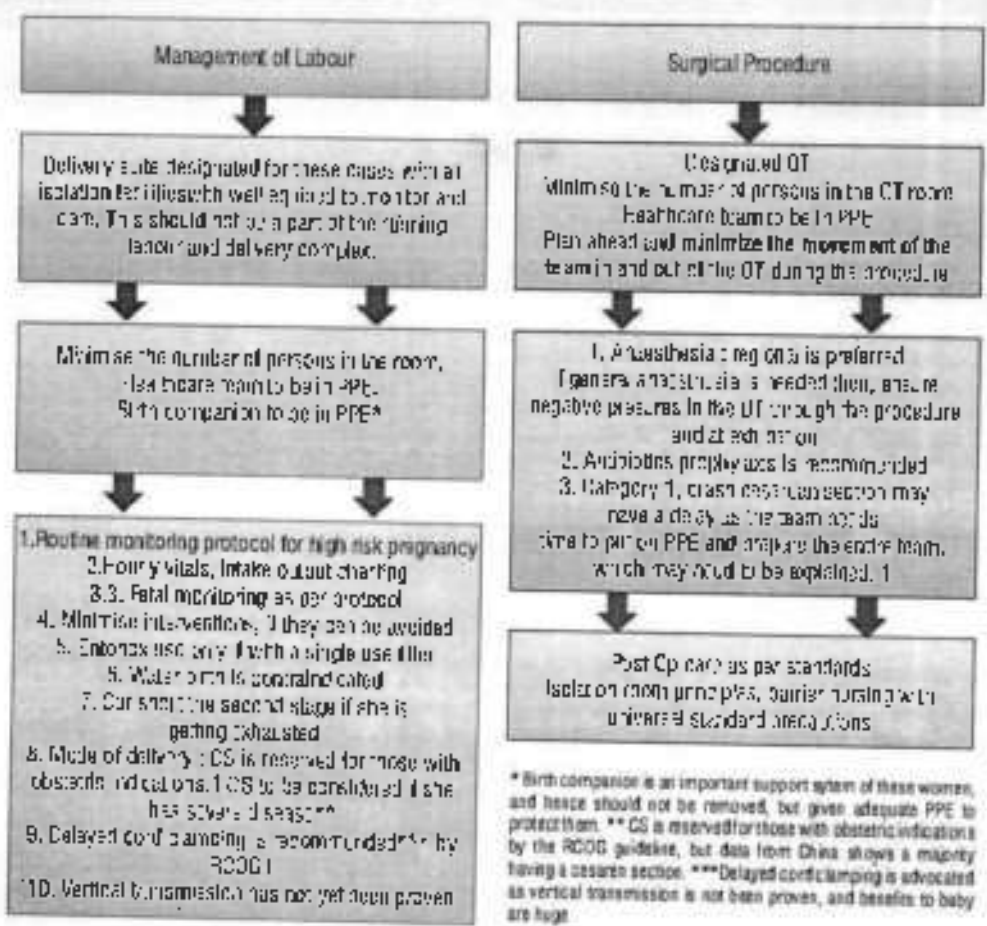
In addition to routine consent taken at the time of admission, treatment procedures, delivery or surgery, it would be prudent to include aspects related to COVID-19 infection for the time of the pandemic. The points that should be included are the probable chances of COVID-19 infection while in hospital and its consequences and the precautions to be taken to avoid the infection.

Flow chart of management of pregnant women with suspected or confirmed Covid 19 infection with respiratory symptoms

Persons under investigation or confirmed cases, from the obstetric perspective, follow the same management pathways outlined; There is a significant group of patients, who though infected, remain asymptomatic. There should be good communication between the laboratory, the screening unit, the obstetric unit and the multidisciplinary COVID team to ensure a fast and quick transfer from entry point to the isolation unit. A COVID team should be formed at each unit with a senior obstetrician, anaesthetist, physiologist, critical care with infectious diseases expert to plan the best response. Examination and tests are performed for assessment of severity and further planning of care.



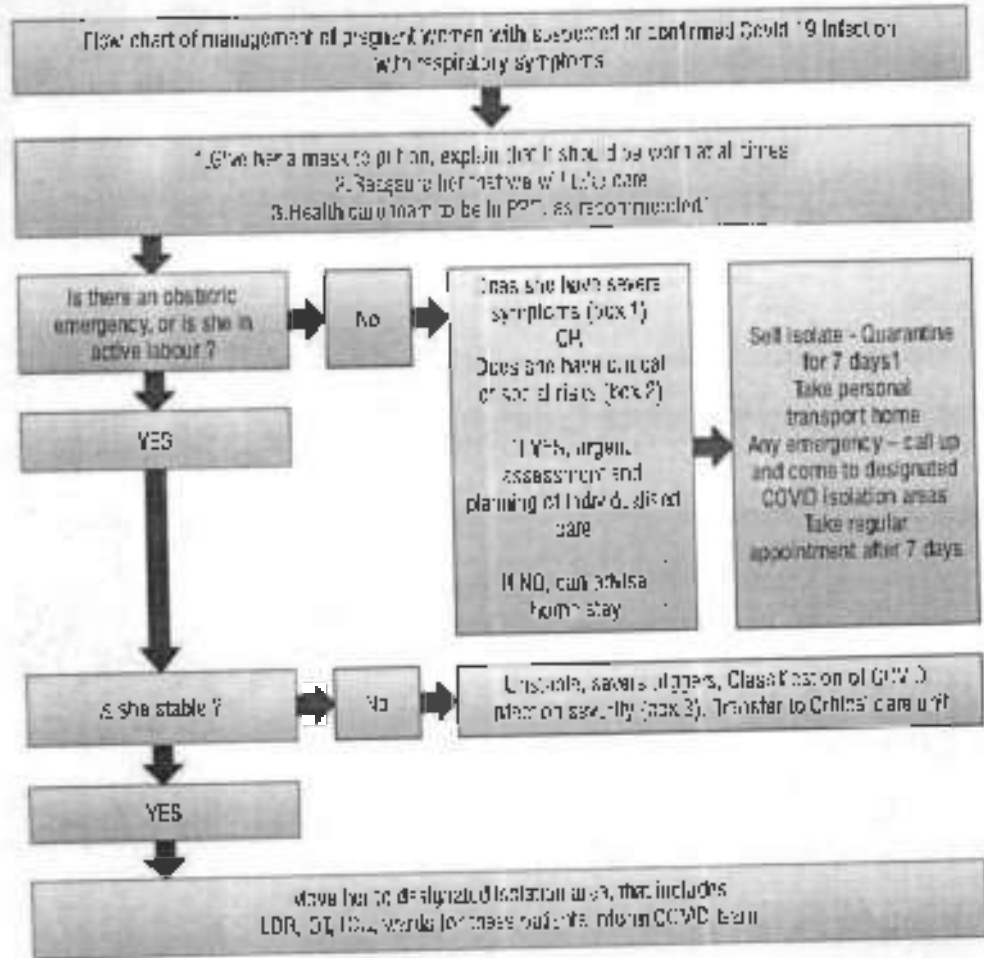
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* Birth companion is an important support system of these women, and hence should not be removed, but given adequate PPE to protect them. ** CS is reserved for those with obstetric indications by the RCOG guideline, but data from China shows a majority having a caesarean section. *** Delayed cord clamping is advocated as vertical transmission is not been proven, and benefits to baby are huge.

Note - There is controversy about the timing of cord clamping. The ACOG recommends early (immediate) cord clamping, whereas the RCOG recommends delayed (1 minute) cord clamping.

GMP F PATH-WAY



Box 1

Conduct Illness Severity Assessment

1. Does she have difficulty breathing or shortness of breath?
2. Does she have difficulty completing a sentence without gasping for air or needing to stop to catch breath frequently when walking across the room?
3. Does patient cough blood?
4. Does she have new pain or pressure in the chest other than pain with coughing?
5. Is she unable to keep liquids down?
6. Does she show signs of dehydration such as dizziness when standing?
7. Is she less responsive than normal or does she become confused when talking to her?

Box 2

Assess Clinical and Social Risks

1. Comorbidities (Hypertension, diabetes, asthma, HIV, chronic heart disease, chronic liver disease, chronic lung disease, chronic kidney disease, blood dyscrasias, and people on immunosuppressive medications)
2. Obstetric issues (eg, preterm labor)
3. Inability to care for self or arrange follow-up if necessary

Box 3

Clinical Classification of Covid 19 infection (China)

Mild disease: Clinical symptoms are mild and evidence of pneumonia on imaging

Moderate: Fever + respiratory symptoms + pneumonia manifestations on imaging

Severe: Respiratory rate ≥ 30 / min, $SpO_2 < 93\%$ at rest, $p_aO_2 / F_iO_2 < 300$ mmHg, Those with 50% lesions progression within 24 to 48 hours of imaging

Critical: Respiratory failure requiring mechanical ventilation, presence of shock, other organ failure that requires ICU care

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13. Annexure II - Protocol for Covid positive Diabetics patients

COVID 19: Diabetes and Obesity API-ICP Recommendations



Shashank R Joshi, Mangesh H Tiwaskar, Sidharth N Shah

BASICS

Novel Human corona virus (SARS-CoV2) or Human Corona Virus (HCoV), for the third time in last two decades has threatened to disrupt the planet earth. The earlier two outbreaks were in 2002 originating from China SARS with 8000 people affected and case fatality rate of 10 % and 2012 in Saudi Arabia MERS with 2000 people affected with a case fatality rate of 37%. Both these corona viruses has been virtually conquered successfully. However the earliest evidence related to Diabetes came from Hong Kong during SARS epidemic which showed highest mortality even more than heart disease and cancer in people above 75 years of age. Diabetes clearly emerged as both these epidemics of SARS and MERS a risk factor associated with poorer outcome especially in elderly and vulnerable population. Another interesting experimental work in transgenic mouse of a MERS model showed expression of DPP-4 receptor on *flampr* (pancreas) acinar cells. This model showed that MERS coronavirus binds to DPP IV receptor being domain of the pulmonary alveolar cells and may have contributed to the cytokine storm and higher mortality amongst diabetics. Possibly based on this model assumptions were made that diabetics get more pulmonary inflammation & infiltrates, more cytokine damage, weaker immune response and more severe disease. Ever since we all know 5 to 15 % of the world population usually suffers from influenza or flu (influenza coronavirus) and it causes in an excess of 30000 to 40000 pulmonary deaths. The current Human Corona virus SARS CoV2 is a coronoid disease which came via bats possibly using Pangolins into humans. It caused COVID 19 as designated by WHO. Its origin was from Wuhan in China possibly the wet markets there being the ground zero. It's a beta RNA corona virus with spike glycoprotein which attaches to the ACE2 (Angiotensin Converting Enzyme) found in the pulmonary alveolar cells and possibly also the gut. Clearly the vulnerable group include Hypertension, Diabetes, Heart Disease, Lung diseases and any other immune compromise state. Our current focus is diabetes and obesity.

DIABETES AND COVID 19

Incidence of infections is usually higher in patients with Diabetes compared to those without it. Diabetics also have more complications, more severe complications and death. Respiratory infections including tuberculosis are common in diabetics. Diabetics have clear cut compromised immune dysfunction. Diabetes and hyperglycemia leads to neutrophil dysfunction, poor chemotaxis, defective macrophage mononuclear function. There is also a deficiency of complement C4 in Diabetes, which is associated with Polymorphonuclear dysfunction and reduced cytokine response. Mononuclear cells and monocytes in Diabetics secrete less IL-1 and IL-6 and glycation would also reduce expression of class I MHC on surface of myeloid cells, impairing cell immunity. Decreased mobilization, chemotaxis, and phagocytic activity may occur in hyperglycemia and which may increase the susceptibility to oxidative stress in diabetes. Glycation of immunoglobulins in may be seen with poorer glycosyl control (especially if the HbA1c is above 8 %) which hampers the biological function of antibodies. In COVID 19 there is over activation of T-cells - leads to severe immune dysfunction. In severe COVID 19 patients had higher concentrations of pro-inflammatory cytokines. Therefore Diabetes and hyperglycemia states especially with (1) Elderly above the age of 60 years (2)

(3) Therefore 25-30 cal/kg/day intake with reduced dense foods and 1.5-2 g protein/kg/day is recommended. For ICG or ventilated ones, early enteral Nutrition is recommended as early as 12 hours post ventilation and 24-36 hours in the ICU. A formula MNC or enteral formula with peptides may be needed. Disease specific cereal foods like diabetic specific formula (or meal) or hepatic specific diets are also useful. Blood pressure management should be continued as per usual recommendations. Currently do not stop ACEI or ARB, though this needs individualization. If however, an anti-hypertensive drug has to be tapered, or a regimen to be intensified, consider another class of drugs or agent.

When diabetics are ill, crucial regulatory hormones like corticosteroids, catecholamines are released to fight the illness as a classical physiological response. These hormones can be triggered by any number of conditions, such as infections, cardiac/renal/hepatic events, gastroenteritis, and dehydration causing illnesses etc. This can cause wide fluctuations in the blood glucose levels and increased glycemic variability when leading to life threatening complications like Diabetic ketoacidosis, lactic acidosis and Hyperosmolar hyperglycemic states. Common cold or flu including COVID 19 apart from Sore throat, Urinary tract infections, Bronchitis or pneumonia, gastroenteritis and diarrhea as well as skin or genital infections such as streptococci (especially if these conditions are followed by a fever or high temperature) can cause hyperglycemia apart from corticosteroid therapy. Patients should be made aware of target glucose levels during an illness. They must be educated how to adjust insulin doses, more frequent SMBG and ketone testing. They should be told to seek immediate emergency medical help if a) if they are not sure what to do b) if they vomit repeatedly (not able to hold down any food or drink for more than six hours), as they can quickly become very dehydrated c) if their blood glucose stays high (>250 mg/dl for more than 24 hours or if they develop symptoms which could be indicative of developing diabetic ketoacidosis.

General guidelines to manage diabetes during an illness includes frequent blood glucose testing (SMBG). Following steps need to be taken, even if glucose levels are under control. Take diabetes medication as usual. Insulin treatment should never be stopped. Test blood glucose every four hours, and keep track of the results. Drink water (alcohol-free) fluid (except cardiac or renal or medical conditions where fluids are restricted), and try to eat as normal. Allow patients to weigh themselves every day. Losing weight while being normally can be a sign of high blood glucose. Also check body temperature every morning and evening, and if fever is present may be a sign of infection. The overall diabetes in children being illness should never be ignored though children have better outcomes in COVID 19 due to developmental factors. General sick day diabetes management principles for diabetes with diabetes are more frequent blood glucose and ketone (blood or urine) monitoring. The aim for a blood glucose levels should be between 75-130 mg/dL and blood ketones below 0.6 mmol/L when the HbA1c is 8. NEVER STOP INSULIN. If there is a fever, insulin needs are usually higher. Monitor and maintain hydration with adequate salt and water balance. Treatment of underlying illness and symptoms (fever) is often needed. If a child with diabetes (even or vomiting periods and to weigh loss continues suggesting vomiting, dehydration and potential electrolyte

Hypertension (c) Obesity (d) Chronic heart or lung disease (e) Chronic kidney disease (f) Organ transplant (g) Patients on chronic immunosuppressive therapy (h) Acquired or genetic conditions of immunodeficiency - have a poor clinical as well as mortality outcomes. These vulnerable groups and comorbidities make COVID 19 cases get severe disease, cytokine storm, poorer response and death. Diabetes with complications and poorer glycemic control makes the key: survive longer and reduce major morbidity. A new term called "hyperglycemia" in a new epidemic of diabetes and hypertension and ultimately after the outbreak pass by by 2020-2025. Diabetes hyperglycemic state of the new revealed recognized - identify people who are at risk and make specific care.

COVID 19 DYSGLYCEMIA - HYPERGLYCEMIA (STRESS)

COVID 19 can lead to a hyper metabolic state and lead to simple stress hyperglycemia which will alter outcomes. COVID 19 also can unmask latent diabetes especially in pre-diabetics as well as predisposed cohorts. This can alter severity of pneumonia, ARDS, wearing of mechanical ventilation, the length of stay in ICU as well as short and early mortality. Often medications can also lead to iatrogenic dysglycemia. Many agents including corticosteroids as well as immune therapies can lead to hyperglycemia states leading to poorer outcomes. Also drugs like chloroquine, hydroxy chlorine can lead to hypoglycemia which can also be severe. Chronic inflammation, pro-coagulant state, increase D dimer, immune dysfunction as well as direct virotoxic effect of human coronavirus on pancreas cannot be ruled out. We will soon have data if a COVID 19 related pancreatopathy exists and autopsy data will give us clues which may also include COVID 19 pathogenesis or its recovery.

DIABETES AND COVID 19

Types of Diabetes - Type 1, Type 2 or gestational or secondary, do not seem to be directly impacted by COVID 19. However Type 1 Diabetics below the age of 30 years, female gender have better outcomes compared to obese type 1 diabetics, males and elderly. Glucose control and glycemic variability adversely impact outcomes of COVID 19 diabetics. In asymptomatic or mild COVID diabetics, optimal glycemic control with diabetes specific nutrition (DSN), physical distancing, appropriate exercise with adequate 7hour sleep and counseling is recommended with self-monitoring of blood glucose frequently in grocery stores and valleys of glycaemia. Desodification by natural smoking, alcohol, as well as digital detoxification from social media and mobile phone for 2 hours per day is recommended. Hydration has to be individualized and optimal nutrition is recommended. Usually ACE inhibitors or Angiotensin Receptor Blockers, Thiazolidinediones, SGLT2 inhibitors may need to be used with extreme caution and pharmacovigilance and it is preferable to avoid starting them afresh. However the ACE inhibitors or ARBs verdict by many global guidelines is that they may be safe and even paradoxically protective. Ibuprofen and other NSAIDs have clearly to be avoided. Chloroquine (CQ) and Hydroxychloroquine (HCQ) can be good anti-inflammatory agents as option. CQ and HCQ are also adjuvants in diabetes but can cause hypoglycemia and acute renal insufficiency, QT interval prolongation. They may have a role for prophylaxis in healthcare workers and close contacts as well as part of treatment regimens. Several Randomized trials are now being conducted on these trials which may answer this in a new definitive way.

MANAGEMENT AND SICK DAY REGIMEN

Management of diabetes - if glucose control is good: then continue same anti diabetic regimen. But if control is suboptimal then intensification with insulin may be needed as per requirement. However, if lockdown situation or access to the medications is not used, the stricter diet, DSN/MNC, up chain of available drugs is recommended. Obesity can be associated with sleep apnea, reduced ventilatory function and surfactant dysfunction. In obese patients, caloric diet, GLP-1 analogs, Orlistat as before unless infected by moderate to severe COVID or hospitalized. It is not wise to pursue aggressive weight

compromise or fruity breath odor (acetone) persists or if there is a worsening or persistent elevated blood ketones >1.5 mmol/L or if urine ketones remain large despite extra insulin and hydration or if the child or adolescent is becoming exhausted, confused, hyperventilating (Kussmaul's breathing), or has severe abdominal pain, urgent emergency medical or if possible specialist help should be taken or urgent hospitalization may be needed. The typical guidelines for T1DM patients remain same. Remember: Insulin treatment should never be stopped. The insulin dose may need to be increased and it might be necessary to take additional doses of fast-acting insulin to bring down the blood sugar levels. Blood glucose levels should be checked at least every 4hour from early to late in the day from meals to learn to avoid dehidration from blood sugar levels should be between 10-18 mg/dl and should be maintained. Type 1 diabetics on SGLT2 prevent if they have availability and access to pump care, should continue pump care or else under expert advice start to basal bolus regimen with adequate insulin and S-ABC supplies.

GLOBAL RECOMMENDATION FOR COVID 19 AND DIABETES

The AACE (American association of Clinical Endocrinologists) recommends to continue to take your prescribed medications. Refill prescriptions and be prepared with medications and testing supplies. Stay home as much as possible to reduce the risk of being exposed. Wash hands with soap and water regularly, for at least 20 seconds, especially before eating or drinking and after using the restroom and blowing nose, coughing or sneezing. Cover nose and mouth while coughing or sneezing with a tissue or a flexed elbow, then dispose the used tissue properly. Avoid touching eyes, mouth or nose if possible. If you get symptoms such as fever, cough, shortness of breath or wheezing, especially if you believe you may have been exposed to COVID-19 positive patient or live in or have recently traveled to an area with ongoing spread, call or see a health care professional immediately.

The Chinese guidelines say for the COVID-19 patients with diabetes, tailored therapeutic strategy and optimal goal of glucose control should be formulated based on clinical classification, existing comorbidities, age and other risk factors. Blood glucose should be controlled for all patients during hospitalization to monitor the progress of illness and avoid aggression. During the 3-6week lockdown period after discharge, blood glucose monitoring should be continued in community and patients need to avoid getting exposed to other infectious disease due to a lower immune response. The IDF (International Diabetes Federation) says - like people and people with pre-existing medical conditions such as diabetes, heart disease and asthma appear to be more vulnerable to become severely ill with the COVID-19 virus. When people with diabetes develop a viral infection, it can be harder to treat due to fluctuations in blood glucose levels and, possibly, the presence of diabetes complications. There appears to be two reasons for this: Firstly, the immune system is compromised, making it harder to fight the virus and likely leading to a longer recovery period and secondly, and the virus may thrive in an environment of elevated blood glucose. The ADA (American Diabetes Association) is non-committal of the diabetes and COVID-19. People with diabetes do face a higher chance of experiencing serious complications from COVID-19. If diabetes is well-managed, the risk of getting severely sick from COVID-19 is about the same as the general population. COVID-19 is proving to be a more serious illness than seasonal flu, including people with diabetes. The risks are similar for people with type 1 and type 2 diabetes.

KEY MESSAGES

- Diabetes is a metabolic with significant immune dysfunction
- COVID-19 has now shown a component of immune dysfunction
- Diabetes patient with COVID-19 may have worse immune dysfunction leading to hyperglycemia
- Diabetes is among the most common comorbidities observed in COVID-19

losing autotunes during COVID-19 infection. Avoid restrictive diet like keto diet or intermittent or prolonged fasting. No sudden change in pattern of diet or activity is advised. Yoga like Suryanamkar or simple Asana are recommended. Moderation is the key to success. COVID-19 is associated with hypoxemia, hyper-catabolism and an overall catabolic state. Sarcopenia can aggravate

patients

- Diabetes has also been associated with severity of disease
- Diabetes (along with hypertension and coronary heart disease) needs to be assessed and managed in COVID-19 patients

RECOMMENDED READING

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14. Annexure III - Protocol for Hypertension covid positive patients

Guidance for Health Care Providers on Management of Cardiovascular complications in patients suspected or confirmed with COVID 19 virus infection

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As cardiovascular health professionals, this guidance document has been brought out to help fellow physicians manage patients during the COVID-19 pandemic.

INTRODUCTION

The current coronavirus disease (COVID-19), a rapidly evolving pandemic, is a relatively unique infection unlike the earlier severe acute respiratory syndrome (SARS) or Middle East respiratory syndrome (MERS) epidemics demonstrating a much greater infectivity though a lower case-fatality rate. The clinical manifestations are continuously being evaluated and management strategies rapidly evolving, including specific antiviral medications. This document summarizes the current understanding of the cardiovascular complications of this infection, and discusses the current pathophysiological mechanisms and management. However, it must be emphasized that a full understanding of the disease process is yet incomplete and as more information becomes available, this document will be updated to reflect new knowledge.

This document highlights the management of cardiovascular complications.

However, detailed protocols for the diagnosis, drug selection, and management of COVID-19 patients with cardiovascular complications and/or cardiovascular patients with COVID-19 should be developed together with other medical specialties involved in management of these patients – Infectious, Pulmonology, etc.

Scope of the Problem: The clinical manifestations of COVID-19 are dominated by respiratory symptoms followed by gastrointestinal symptoms. However, a significant percentage of patients have severe cardiovascular complications that can impact the course of the illness. In addition, some patients with underlying cardiovascular diseases (CVDs) show an increased mortality. Early case reports from the Chinese Centre for Disease Control indicate that patients with underlying comorbid conditions have an increased risk for contracting COVID-19 and have a worse prognosis. This is significantly worsened with increasing age. Depending on the report, between 23% and 50% of COVID-19 patients have pre-existing cardiovascular conditions. Case-fatality rates have varied significantly between countries and for different age groups. Patients very below 0.25% and 1%. Patients with co-morbidities have higher mortality than the average population.

- Cancer: 2.4%
- Diabetes: 2.1%
- Hypertension: 6.0%
- Cardiovascular disease: 10.1%
- Chronic respiratory disease: 6.3%

Cardiac Manifestations of the Covid 19 Infection: Myocardial injury associated with the SARS-CoV-2 occurred in 5 of the first 41 patients diagnosed with COVID 19 in Wuhan, which mainly manifested as an increase in high-sensitivity cardiac troponin T (hs-cTnT) levels. The levels of biomarkers of myocardial injury were significantly higher in patients admitted to the ICU. Furthermore, more than 50% of patients who died demonstrated abnormally elevated troponin levels.

The important management strategies include

- Guideline-directed medical therapy should be optimized in COVID patients. This includes the continuation of ACEI and ARB.
- Optimize volume status with less aggressive fluid resuscitation for hypotension.
- Atrial fibrillation to be managed medically and hemodynamically unstable, cardioverted. For both AF and VT/VF, amiodarone can be used as per existing guidelines.
- 6. Systemic Hypertension: Following reports that systemic hypertension may be associated with increased rate of mortality in hospitalized COVID-19 infected subjects, there has been concern expressed regarding the potential adverse effects of angiotensin converting enzyme inhibitors (ACEI) or Angiotensin Receptor Blockers (ARBs). The concern arises from the observation that, like the coronavirus causing SARS, the COVID-19 virus binds to a specific enzyme called ACE2 to infect cells, and ACE2 levels are increased following treatment with ACE-I and ARBs. This has resulted in some reports of these doctors inappropriately stopping these medications prescribed for hypertension or heart failure.

The safety concerns of ACE-I or ARB treatment in relation to COVID-19 does not have a sound scientific basis as of now. On the contrary, initial studies suggest that these medications might be protective against severe lung complications in patients with COVID-19 infection. Based on current data and in view of the overwhelming evidence of mortality reduction in cardiovascular diseases, ACE-I and ARB therapy should be initiated or maintained in patients irrespective of SARS-CoV-2. Withdrawal of RAAS-inhibitor as a search for alternative drugs at this point is not recommended.

7. Drug Therapy and COVID-19: Interactions and Cardiovascular Implications

Antiviral Therapy	Thrombolysis	Loopdiuretics/Thrombolysis	Cholinergic/Hydroxychloroquine
Some works	Inhibits replication of RNA and DNA viruses.	Lipynavir is a protease inhibitor; interferes with CYP3A, metabolism increasing levels of lopinavir.	Alters endosomal pH required for viral cell fusion.
CV Drug Class	Antiplatelets	Antiplatelets Anticoagulants Diuretics	Antiarrhythmics

About 90% of inpatients with pneumonia demonstrated elevated D-dimer concentrations indicative of heightened coagulopathy and associated increased mortality.

Mechanisms of these events include systemic pro-inflammatory cytokine responses that directly contributes to plaque rupture through local inflammation, induction of procoagulant factors and haemodynamic changes which predispose to ischaemia and thrombosis. In addition, among the confirmed cases of SARS-CoV-2 infection reported by the National Health Commission of China (NHCC), some patients present with cardiovascular symptoms.

ACE2 is involved in heart function and has been identified as a functional receptor for corona viruses, including SARS-CoV and SARS-CoV-2. SARS-CoV-2 invades alveolar epithelial cells, resulting in respiratory symptoms which are more severe in patients with coexisting cardiovascular diseases. This could be associated with increased secretion of ACE2 in these patients compared with healthy individuals. This has also led to concerns regarding the role of ACE-I and ARB's.

GENERAL MANAGEMENT AND SPECIFIC SUBSETS:

Guideline-directed medications given to cardiovascular disease (CVD) patients during a widespread outbreak is critical and these include statins, beta blockers, ACE inhibitors and anti-platelet agents.

Early identification and isolation of cardiovascular patients with COVID-19 symptoms from other patients is critically important. It is prudent to advise all cardiovascular patients of the potentially increased risk and to encourage additional, reasonable precautions in terms of isolation and social distancing. Acute viral infections have multiple short-term effects on the cardiovascular system:

- Increased risk of Acute coronary syndrome
- Myocarditis or worsening of previously stable LV dysfunction leading to heart failure
- Arrhythmias related to acute inflammation, ACS or LVE
- Stroke

It is important to triage COVID-19 patients with underlying cardiovascular, diabetic, renal, respiratory or other comorbid conditions for prioritised treatment. In addition, careful thought should be given to manage specific subsets:

1. Myocarditis: It is important to note that recent reports suggest that acute cardiac injury is present in about 7% of patients with COVID-19 and may represent either type 2 MI or myocarditis. Importantly, myocarditis can be caused by direct infiltration of the virus but can also be secondary to severe hypoxia and the "cytokine storm" mounted in response to the systemic infection. Some of these manifestations might be, in part, attributable to metabolic disorder, hypoxia, neurohormonal or inflammatory stress.

Diagnosis of Myocarditis among COVID-19 patients is made by:

- Elevated troponin-I or T/Trop B/Trop J
- Myocardial brain natriuretic peptide (MBNP) or BNP
- Sinus tachycardia and no ST segment elevation on electrocardiogram. Extensive QRS/ST-T wave changes predict poor prognosis
- Malignant arrhythmias - ventricular tachycardia or fibrillation and AV block indicate extensive myocardial involvement and indicate prognosis
- Enlarged left ventricle with low left ventricular ejection fraction (LVEF) and global LV dysfunction on Echocardiography

Management of myocarditis includes standard heart failure medications, ventilatory support and ECMO. Isolated case studies with prednisolone has shown benefit but is not recommended.

CV Adverse Unknown Effects

Altered cardiac conduction, QTc prolongation, high degree AV block, torsade de pointes

Direct myocardial toxicity vs. exacerbation of underlying cardiac pathology
Altered cardiac conduction: AV block, bundle branch block, torsade de pointes, ventricular tachycardia/ fibrillation

The Indian Council of Medical Research (ICMR) has advised Hydroxychloroquine prophylaxis in health care workers involved in the care of suspected or confirmed COVID-19 infected patients and contacts of confirmed cases. Furthermore, HCQ is also one of the medications being evaluated as treatment in these patients. Since it is likely that there could be many patients on this medication a detailed table of drug interaction and precautions is also included.

Drug	Interactions and effects	Action to be considered
1. Antibiotics Mucopolides Azithromycin etc	QT prolongation and arrhythmias	Avoid co-prescription, if utmost essential assess basal QTc by ECG and serially monitor
Quinolones (Ciprofloxacin etc)	QT prolongation and arrhythmias	Avoid co-prescription, if utmost essential assess basal QTc by ECG and serially monitor
2. Anti-arrhythmic drugs (Amiodarone, disopyramide, procainamide, quinidine, sotalol, etc)	QT prolongation and arrhythmias	Avoid co-prescription, always weigh the risks and benefit and seek expert opinion if needed.
3. Anti-diabetic drugs including Insulin	HCQ lowers blood sugar levels.	May need to monitor blood sugar levels and adjust to reduce dose of antidiabetic drugs
4. Beta-blockers (Metoprolol, Carvedilol, Bisoprolol etc)	HCQ also lowers drug levels of BB interfering with its metabolism at higher doses	Can be continued, but this monitoring may be needed.
5. Digoxin	ECG increases Digoxin levels at high doses.	Can be continued, but monitoring may be needed

3. Summary:



2. Acute Coronary Syndrome: Efforts should be made to try to differentiate between these Type 1 MIs vs. Type 2 acute coronary syndromes, with deferral of invasive management in the former, especially if the patient is hemodynamically stable. The classic symptoms and presentation of AMI may be overshadowed in the context of coronavirus infection, resulting in atypical or atypical presentations.

Diagnosis of ACS should not be based only on elevated troponin levels since these can be significantly elevated in these patients even without ACS. A diagnosis should be based on:

- History
- Serial Troponin levels
- ECG
- Echocardiogram - to correlate with segmental wall motion abnormalities
- Combined CT Coronary Angiogram (if feasible) at the time of routine CT scan being done for patient management.

Reperfusion therapy in ACS should take into consideration the clinical presentation, staff availability, risk involved for medical personnel and the availability of high dependency beds in a hospital. Patients with coronary artery disease and may be at particular risk as a result of coronary plaque rupture secondary to virally induced systemic inflammation, and:

- Standard pharmacological therapy (aspirin, statins, beta-blockers, and angiotensin-converting enzyme inhibitors) should be continued or optimized in all these patients.
- Pro-inflammatory effects of systemic inflammation may increase the likelihood of stent thrombosis and potent anti-platelet therapy may be advisable.

Current recommendations for ACS management would include - For confirmed COVID-19 infections:

- STEMI: Low risk STEMI patients, consider thrombolysis as the treatment of choice. Cardiac catheterisation should be considered only for rescue PCI.
- STEMI: High risk STEMI patients. The risks to the treating personnel should be considered before deciding on primary PCI. If PPE is available and the hospital cath lab personnel are well versed in its use, then consider primary PCI. In all other situations, thrombolysis should be the treatment of choice.
- NSTEMI/Unstable Angina: Conservative management.

For patients with suspected COVID-19 infection presenting with ACS, the current recommendation is:

- STEMI: Thrombolysis should be the reperfusion strategy of choice, like that in patients with confirmed COVID-19 cases (preferably Tenecteplase or Reteplase).
- NSTEMI/Unstable Angina: Conservative management until the confirmatory test results are available.

Patients with COVID-19 can have significant thrombocytopenia. This should be considered when deciding the revascularisation strategy (Lappi et al.

DOI: 10.1016/j.oca.2020.02.021)

1. Shock: The dominant clinical presentation of COVID-19 is acute respiratory illness, which may lead to ARDS and is manifested as hypoxemia and ground-glass opacities on CT scan. However, similar features may be seen in patients with cardiogenic pulmonary edema due to myocarditis, ACS or worsening of previous LV dysfunction. Therefore, it is important consider cardiogenic or mixed etiology as the cause of respiratory manifestations in COVID-19.

Preliminary studies suggest that older age, comorbidities (especially diabetes and cardiovascular disease including hypertension), lower lymphocyte count, higher D-dimer level, and possibly cardiac injury are risk factors to consider for cardiogenic origin.



SAFETY OF MEDICAL PERSONNEL AND CATHETERISATION AND ECHOCARDIOGRAM LABORATORY PROTOCOL

The cardiovascular care team (including physicians, nurses and technicians) may have limited training and experience with the acute management of viral epidemic disease. The increased transmission of COVID-19 to healthcare workers suggests that routine infectious disease mitigation precautions are insufficient and health care workers should be provided and trained on the use of personal protection measures. This should be coordinated with the local hospital protocol for managing patients with COVID-19 infection.

Echocardiogram Laboratory: Specific recommendations for Echocardiograms would include:

- Echocardiograms may be performed on patients with suspected COVID-19 infection at initial presentation at the outpatient or lower clinic. The personnel handling the Echocardiogram machine should be well protected and the gates disinfected prior to subsequent use.
- It would be preferable to locate a mobile or dedicated Echo machine within the isolation ward where suspected or confirmed COVID-19 patients are being treated since frequent limited scans may be performed in these patients to periodically assess LV function and volume status.

CCU/CATH LABORATORY:

Specific recommendations for Cath lab include:

- Elective procedures to be postponed especially to patients with significant comorbidities. However the decision making has to be individualized considering the risks to the treating medical team versus the risk of delay of diagnosis or treatment.
- All catheterization laboratory personnel should use N95 masks and be trained in the proper techniques for donning and doffing of Personal protection equipment (PPE) including eye protection.
- Patients with known COVID-19 or suspected COVID-19 who are required to come to the catheterization laboratory, should wear an appropriate surgical mask. All members of the catheterization laboratory team should wear PPE.
- Intubation, suction, and active CPR can result in aerosolisation of respiratory secretions, thus increasing the exposure to medical personnel. The threshold

In many clinical situations, Echocardiography and serum brain natriuretic peptide (BNP) can help clarify the diagnosis and help differentiate ARDS and cardiogenic shock.

Management strategies:

- Assess volume status.
- Fluid resuscitation – restrictive rather than liberal and utilize crystalloids over colloids.
- Pre adults with COVID-19 and shock, use Norepinephrine as the first-line vasopressor agent, followed by vasopressin or epinephrine.
- Tissue Doppler/strain analysis to monitor MAP or ECAM/ETG.
- Addition of Dobutamine should be considered in the presence of LV dysfunction and a MAP above 70mmHg.
- In refractory shock, steroids and ECMO may be considered.

Note: In patients with Corona virus infection there is marked lymphopenia and patient who progressed to infection had very low lymphocyte counts. ECMO can result in reduction in some subsets of lymphocyte population. Hence lymphocyte counts should be closely monitored. In a small series of patients on ECMO the mortality reported was 41%. (Lancet Respir Med 2020; largely absent/10.1016/S2215-0020(20)30115.9)

Thromboembolic Disease: There have been case reports of abnormal regulation parameters in hospitalized patients with severe COVID-19 disease. In a multicenter retrospective cohort study from China, elevated D-dimer levels were strongly associated with in-hospital mortality.

Endothelial dysfunction with concomitant vascular inflammation may contribute to the hypercoagulable state in such patients. In the setting of critically ill COVID-19 patients who demonstrate clinical deterioration as evidenced by hypoxia or hemodynamic instability, thromboembolic disease should be considered as an additional possibility and investigated with evaluation of D-dimer levels or venous doppler studies.

Case reports of COVID-19 related patients show increased venous thromboembolism (VTE). Furthermore, in patients with severe infection, F03 have been noted in the small vessels of all organs including lung, heart, liver and kidney. This could contribute to worsening of the clinical condition.

The optimal thrombolytic regimen for patients hospitalized with COVID-19 related illness is not known and there is no data on the use of DOACs.

Current management strategies could include:

- Unfractionated or LMW heparin
- Patients with severe shock may benefit from administration of the DAP (dabigatran clopidogrel) with Prasugrel/Ticagrelor)
- Heart Failure: It is important to closely monitor patients for heart failure. This could result from myocarditis as well as HF exacerbation. New-onset atrial fibrillation as a cause for heart failure has also been reported.

In consider intubation in a patient with borderline respiratory status may need to be lowered and should preferably be done prior to transfer, in order to avoid emergency intubation in the catheterization laboratory.

CONCLUSION

- COVID-19 infection is an existing global pandemic with significant cardiovascular complications that require aggressive management and is prognostically important.
- Guidelines directed management to be considered for pre-existing co-morbid conditions including CAD, systemic hypertension and heart failure.
- Arrhythmic complications include myocarditis, ACS, shock, heart failure and venous thromboembolic disease.
- Long-term cardiovascular effects are yet to be elucidated.
- Dedicated Echocardiogram machine within the isolation ward, where COVID-19 patients are being treated, would be preferable.
- Cardiac catheterization procedures to be restricted to only emergency and life-saving scenarios.
- Sensitization of the cardiac staff regarding the precautions in handling infected patients, adequate training and utilization of PPE to be implemented for all medical personnel involved in the management of suspected or confirmed cases of COVID-19 infection.

ADDITIONAL READINGS

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9/24/19



Recommendations of Task Force on Patients
Management Protocol for Serious and
Critically ill Covid-19 Patients

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NOTIFICATION

No. CORONA-2020/C.R.97/Aro-5
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G.T. Hospital Compound, 10th Floor,
New Mantralaya, Mumbai 400 001
Dated - 21th May, 2020

References:

1. The Epidemic Diseases Act, 1897
2. The Disaster Management Act, 2005
3. The Maharashtra Essential service Maintenance (Amendment) Act, 2011
4. The Maharashtra Nursing Home (Amendment) Act 2006
5. Bombay Public Trusts Act, 1950 (for short 'B.P.T. Act')
6. Public Health Department Notification No. CORONA-2020/C.R.97/Aro-5
Dated 30 April, 2020

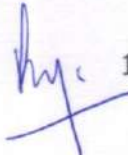
Whereas the State Government is satisfied that the State of Maharashtra is threatened with the spread of Covid-19 epidemic, already declared as a pandemic by World Health Organization;

Whereas the public Charitable Trusts registered under the provisions of the Bombay Public Trusts Act, 1950 (for short 'B. P. T. Act') which are running Charitable Hospitals, including nursing homes or maternity homes, dispensaries or any other center for medical relief and whose annual expenditure exceeds Rs. 5 Lacs are "State aided public trust" within the meaning of clause 4 of section 41AA;

Whereas The public Charitable Trust covered by aforesaid paragraph are under legal obligation to reserve and earmark 10% of the total number of operational beds for indigent patients and provide medical treatment to the indigent patients free of cost and reserve and earmark 10% of the total number of operational beds at concessional rate to the weaker section patients as per the provisions of section 41AA of the B.P.T. Act;

Whereas a large number of persons including those affected by Covid-19 are in need of treatment and various Hospitals, Nursing Homes, Dispensaries (hereinafter referred as Healthcare Providers) registered under Bombay Nursing Home (Amendment) Act, 2006 are treating such patients;

Whereas many Healthcare Providers in Mumbai, Thane, Navi Mumbai, Panvel and Pune have specific agreements/ understanding with General Insurance Public Sector Associations (GIPSA) as a member of Preferred Private Network

 1 | Page

(PPN) regarding rates of various treatment packages and some Healthcare Providers in Mumbai are not part of GIPSA- PPN;

Whereas many Healthcare Providers situated in State of Maharashtra are not part of GIPSA- PPN and have their own specific agreements/ understanding with various Third Party Administrators (TPA) regarding rates of various treatment packages and each Healthcare Provider may have different rates for same treatment packages among various TPAs operating in that Healthcare Provider;

Whereas some hospitals in the State of Maharashtra are neither part of GIPSA-PPN nor having agreements/ understanding with any TPA;

Whereas expenses towards treatment of persons insured for IRDA approved healthcare products treated in GIPSA-PPN or network of hospitals empanelled by various TPAs at specific package rates agreed by them are borne by the insurer. However the persons who are not covered by any health insurance product or who have exhausted their health insurance cover are being charged exorbitantly causing hardship to public in general during the pandemic situation;

Whereas large number grievances regarding exorbitant amount of money being charged by the Healthcare Providers registered under Bombay Nursing Home (Amendment) Act, 2006 causing hardship to the public in general during the COVID-19 pandemic are received;

Whereas section 2 (a) (iii) of the Maharashtra Essential Services Maintenance Act, 2005 defines any service connected with the maintenance of Public Health and Sanitation including hospitals and Dispensaries as Essential Service;

Hence, Now Government of Maharashtra has decided to amend the notification No. CORONA-2020/C.R.97/Aro-5 Dated 30 April, 2020 and issue the addendum and modification to the extent mentioned below:

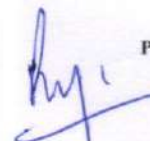
Therefore, in exercise of the powers conferred as per the enabling provisions of all the above referred Acts, to redress the grievances regarding exorbitant amount of money charged by Healthcare Providers **from the patients who are not covered by any health insurance product or any bilateral agreement / MOU between any hospital and private corporate group and who have exhausted their such health insurance cover**, all the Healthcare Providers functioning in the State of Maharashtra are hereby **directed** that:

- 1) The Charitable Trusts registered under the provisions of the B.P.T. Act which are running Charitable Hospitals, including nursing home or maternity home, dispensaries or any other center for medical relief shall make all



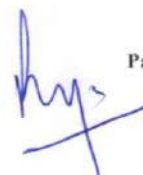
possible efforts to discharge their obligations as per provisions of section 41AA of the B.P.T. Act before applying any charges to any eligible patient.

- 2) Healthcare providers shall make all attempts to increase their bed capacity [subject to norms prescribed in The Maharashtra Nursing Home (Amendment) Act 2006] to accommodate maximum number of patients. 80% of total operational bed capacity (excluding beds of PICU, NICU, day care, maintenance hemodialysis) will be regulated by rates prescribed below. This applies to both Isolation and Non Isolation beds. That means 80% of Isolation beds available with any Healthcare provider under this notification should be regulated by State Govt./District Collectors/Municipal Commissioners and so also the 80% of Non Isolation beds. Healthcare Providers may charge their rack rates to the remaining 20% beds.
- 3) Patients belonging to both categories (80% and 20%) can take treatment in NICU, PICU, daycare and hemodialysis at the respective applicable rates on first come first serve basis.
- 4) For Covid Patients treated at any of the Hospitals/Nursing homes/Clinics covered under this notification across Maharashtra, rates shall not be more than rates prescribed in Annexure-C. For non-Covid patients rates will be as per Annexure-A read with Annexure-B (if applicable).
- 5) There shall be no difference in the quality of treatment being meted out to patients treated against 80% beds (regulated beds) or 20% beds.
- 6) The Healthcare Providers situated in Mumbai, Pune, Navi Mumbai, Panvel, Thane having agreements/ understanding as member of GIPSA-PPN are prohibited from charging more amount than that applicable to lowest bed category irrespective of availability of bed in the lowest category agreed in their respective GIPSA-PPN agreement/ understanding.
- 7) Many Healthcare Providers are not a part of GIPSA-PPN and have agreements/ understandings with various Third Party Administrators (TPAs) pertaining to package rates for different treatments. Such Healthcare Providers having different package rates for similar treatment with different TPAs shall provide the treatment at lowest package rate prevailing among different TPAs in its facility.
- 8) Healthcare providers who are not a part of GIPSA-PPN or who do not have any agreement with TPA will not charge more than the rates prescribed in Annexure-A read with Annexure-B as per location and bed strength. These rates shall be different depending upon location of the hospitals (Districts) and number of operational beds. The maximum rates are prescribed as per Annexure-A. The applicable rates for particular hospital depending on its



location and bed capacity are as per Annexure-B. Illustration I- For a particular package Hospitals with more than 100 beds in Mumbai, Mumbai Suburban, Thane, Palghar shall not charge more than 100% of the rate prescribed in Annexure A. However Hospitals with more than 100 bed capacity in Pune shall not charge more than 85% of the rate prescribed in Annexure A. Illustration II- For a particular package Hospitals in Pune with 99 to 50 bed capacity shall not charge more than 76.5% of the package rate while Hospitals in Pune city with less than 49 bed capacity shall not charge more than 68% of the prescribed package rate as per Annexure-A.

- 9) Items/Services including Intraocular Lenses (IOL), pacemaker, Ortho prosthesis, stents, staplers, Guide-wire Catheter, balloon, medical implants, PPE kit etc. which are not part of GIPSA-PPN or TPA package rates, shall not be charged more than 10 percent markup on Net Procurement cost incurred. If any of the items mentioned here are used for more than one patient then the prescribed cost may be divided among such patients.
- 10) The Healthcare Providers shall display at a prominent place number of permitted beds [permitted as per The Maharashtra Nursing Home (Amendment) Act 2006], operational beds status of availability of beds as per section 41AA of the B.P.T. Act, 80:20 division of beds i.e. numbers of beds regulated under this notification against which patients as referred by respective District Collectors and Municipal Commissioner would be admitted as well as number of unregulated beds and status of occupancy against all beds in regulated (80%) and non-regulated (20%) category.
- 11) Healthcare Providers shall display at prominent place the details of rates applicable as per this notification. It is the duty of the concerned Healthcare Provider to explain to the patient/ relatives of the patient details of all types of charges. The Healthcare Provider shall provide this information to Competent Authorities (respective Municipal Commissioner/ District Collector) at a frequency prescribed by them. Municipal Commissioners and District Collectors are advised to develop an online digital platform to update and disseminate occupancy position of beds in various categories.
- 12) The package rate fixed in this Notification for charging patients is inclusive of Doctors' fees & the Healthcare Provider concerned has the right to call such of its visiting Doctors to render the required services & pay such amount as it decides for the said services out of the package amount so charged. Any denial by the doctors will attract penal action under various Statutes referred to in this Notification including cancellation of MMC Registration.

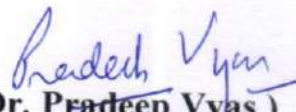


- 13) Nursing and other support staff working in the Healthcare Provider shall give full support and extend wholehearted cooperation for the smooth functioning of the Healthcare Provider which comes under Maharashtra Essential Services Maintenance Act, 2005. Any group or union activities against the smooth function of the Healthcare Provider will attract penal provisions under the said Act.
- 14) Healthcare providers may levy additional charges of not more than five percent (5%) on total bill excluding items mentioned in direction 9 above.
- 15) The rates prescribed at Annexure A are available for non-Covid patients. For Covid patients rates prescribed as per annexure C shall be applicable. The rates in Annexure-C shall apply to Covid positive or suspected Covid positive patients referred by competent authorities against regulated beds (80% of total Isolation beds) in each of the healthcare provider.

Therefore for implementation of the above provisions, the competent authority at the State level shall be the Chief Executive Officer, State Health Assurance Society, Public Health Department, The competent authority at District Level (for areas excluding Municipal Corporations) shall be District Collector and in Municipal Corporation areas the concerned Municipal Commissioner shall be competent authority to take appropriate action as provided in The Epidemic Diseases Act, 1897, The Disaster Management Act, 2005, The Maharashtra Essential Service Maintenance (Amendment) Act 2011, The Mumbai Nursing Home (Amendment) Act 2006, The Bombay Nursing Home Registration (Amendment) Act, 2006 and The Bombay Public Trusts Act, 1950 for any violation of these directions.

This notification shall come in effect immediately and would remain in operation till 31st August, 2020.

By order and in the name of Governor of Maharashtra,


(Dr. Pradeep Vyas)

Principal Secretary to Government

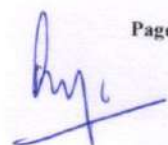
1. Principal Secretary to Hon'ble Governor, Rajbhavan, Mumbai
2. Principal Secretary to Hon'ble Chief Minister, Mantralaya, Mumbai
3. Principal Secretary to Hon'ble Deputy Chief Minister, Mantralaya, Mumbai

4. Hon'ble Minister (Health & Family Welfare), Mantralaya, Mumbai
5. Hon'ble Minister of State (Health & Family Welfare), Mantralaya, Mumbai
6. Chief Secretary, Mantralaya, Mumbai
7. Additional Chief Secretary/ Principal Secretary/ Secretary (All), Mantralaya, Mumbai
8. Secretary, Maharashtra Legislature Secretariat, Vidhan Bhavan, Mumbai
9. Commissioner (Health Services) & Mission Director, NHM, Mumbai
10. Charity Commissioner, M.S. Mumbai
11. Chief Executive Officer, State Health Assurance Society, Worli, Mumbai
12. All Divisional Commissioners
13. All District Collectors
14. All Municipal Commissioners
15. All Chief Executive Officers, Zilla Parishad
16. Director, Health Services- I/II, Mumbai/Pune
17. Additional Director, Health Services (All)
18. Joint Director, Health Services (All)
19. Deputy Directors, Health Services (All)
20. Civil Surgeons (All)
21. District Health Officers (All)
22. District Malaria Officers (All)
23. Deputy Secretary to Chief Secretary, Mantralaya, Mumbai
24. All Joint / Deputy Secretary, Public Health Department
25. PA to Principal Secretary, Public Health Department
26. All Section Officers, Public Health Department
27. Select File: Aarogy-5



ANNEXURE – A

Schedule of Rates Applicable for Hospitals Which are Not Part of GIPSA PPN Situated in Mumbai				
L1	Doctor's fee, OT charges, Anesthetic Charges, Drugs, Investigations, Professional charges, Room rents, Nursing & administrative charges			
L2	IOL, Pacemaker, Ortho prosthesis, Stents, staplers, Guidewire Catheter, Baloon			
L3	Assays, high end hormonal studies, SPECT, A scans, etc.			
L4	Laproscopy/abdominal/vaginal/laser etc			
		INCLUSIONS	EXCLUSIONS	GEN
CARDIOLOGY				
Angiography, includes cost of the dye (Excluding ,Guidewire ,Catheter)		L1,L2,L3,L4		12,000
Angioplasty (Excluding Baloon , Guidewire, Catheter)		L1,L2,L3,L4	L2 (Additional stent)	1,20,000
Angiography with Angioplasty (Excluding Baloon , Guidewire ,Catheter)		L1,L3,L4	L2	1,26,000
CABG		L1,L3,L4		3,23,640
Valve Replacement		L1,L2,L3,L4	L2 (Additional valve)	3,23,640
Temporary Pacemaker Implantation		L1,L3,L4	L2	31,320
Permanent Pacemaker Implantation		L1,L3,L4	L2	1,38,121
DVR-Double Valve Replacement		L1,L3,L4	L2	3,71,768
EPS and RFA		L1,L3,L4	L2	78,300
ENT				
Tonsillectomy/Adenoidectomy (Laser and Coblation)		L1,L2,L3,L4		62,100
Adenotonsillectomy	4500 extra for Coblation	L1,L2,L3,L4		90,977
Tympanoplasty		L1,L2,L3,L4		81,869
Mastoidectomy		L1,L2,L3,L4		1,11,309



Mastoidectomy & Tympanoplasty	L1,L2,L3,L4		1,54,629
FESS WITH SEPTOPLASTY & turbinectomy or polypectomy/conchoplasty- unilateral	L1,L2,L3,L4		1,02,047
FESS WITH SEPTOPLASTY & turbinectomy or polypectomy or conchoplasty- bilateral	L1,L2,L3,L4		1,40,448
Cortical Mastoidectomy with myringoplasty	L1,L2,L3,L4		1,13,022
peritonsillar abscess drainage (day care)	L1,L2,L3,L4		48,956
Microalaryngeal surgeries for cysts and polyps	L1,L2,L3,L4		1,11,056
Myringotomy with grommet insertion	L1,L2,L3,L4		43,677
GENERAL SURGERY			
haemorrhoidectomy (stapler/tackers Excluded)	L1,L3,L4	<u>L2</u>	56,862
haemorrhoidectomy + fissurectomy (stapler / tackers Excluded)	L1,,L3,L4	<u>L2</u>	78,870
fissurectomy and fissure dilatation	L1,L2,L3,L4		55,493
high end fistulectomy	L1,L2,L3,L4		68,234
low end fistulectomy	L1,L2,L3,L4		68,234
appendectomy -LAP	L1,L2,L3,L4		92,559
appendectomy -Open	L1,L2,L3,L4		78,675
Cholecystectomy (LAP)	L1,L2,L3		92,559
Cholecystectomy (open)	L1,L2,L3,L4		78,675
Excision of pilonidal sinus with FLAP COVER	L1,L2,L3		50,228
Excision of pilonidal sinus with primary closure	L1,L2,L3,L4		51,071
mastectomy(simple) without fs	L1,L2,L3,L4		87,188
mastectomy(radical) or Modified Radical Mastectomy with fs	L1,L2,L3,L4		145948
thyroidectomy (Total/Subtotal/Enucleation/ Partial/ Lingual/Isthmectomy	L1,L2,L3,L4		180168
inguinal/ femoral hernioplasty-unilateral (mesh included)(Mesh Cost-7000 included)	L1,L2,L3,L4		92,559
inguinal/ femoral hernioplasty-bilateral (mesh included) (Mesh Cost -7000 included)	L1,L2,L3		106,142
umblicalhernioplasty (mesh included) (Mesh Cost -7000 included)	L1,L2,L3		91,506
incisional hernioplasty (mesh and tackers included).if size of defect is large mesh to be paid as per actual defect size with justification (Mesh Cost -7000 included)	L1,L2,L3		88,979
Circumcision (day care)	L1,L2,L3		36,013
perianal abscess	L1,L2,L3,L4		55,493

breast lumpectomy	L1,L2,L3,L4		78,659
AV fistula (day care)	L1,L2,L3,L4		60,548
hydrocele	L1,L2,L3,L4		43,805
right or left hemi colectomy	L1,L2,L3,L4		2,47,455
resection and anastomosis of small intestine (single)	L1,L2,L3,L4		159845

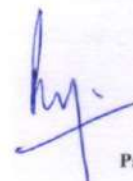
Note: All General Surgeries with or without adhenolysis are within same package. For Exploratory Laprotomy procedure only, Rs. 7000 can be fixed. For Hernia, laproscopic surgeries 20% extra than hernia open surgeries can be given.

OBSTETRICS & GYNE			
Normal delivery (with well baby care)	L1,L2,L3,L4		75000
LSCS (with well baby care)	L1,L2,L3,L4		86250
LAVH	L1,L2,L3,L4		1,17,783
TAH + BSO + ADHESIOLYSIS (LAP)	L1,L2,L3,L4		1,17,783
TAH + BSO + ADHESIOLYSIS (OPEN)	L1,L2,L3,L4		1,06,005
Hysterectomy with Pelvic Floor Repair (PFR)	L1,L2,L3,L4		1,35,999
Instrumental delivery (including well baby care)	L1,L2,L3,L4		86,250
ovarian cystectomy Lap	L1,L2,L3,L4		89,010
ovarian cystectomy Open	L1,L2,L3,L4		89,010
dilatation and curettage (D & C) (DAY CARE)	L1,L2,L3,L4		35,397
Vaginal vault prolapse repair	L1,L2,L3,L4		1,17,783
Myomectomy (Lap /Open)	L1,L2,L3,L4		99,567
OPHTHALMOLOGY			
cataract (Excluding lens)-Phaco	L1,L3,L4	L2	25,000
cataract (Excluding lens)-MICS with unifocal lens	L1,L3,L4	L2	25,000
Vitrectomy (SIMPLE)	L1,L2,L3,L4		42,000
Vitrectomy with gas temponade	L1,L2,L3,L4		42,000
Vitrectomy with silicone temponade	L1,L2,L3,L4		77,000
Vitrectomy -membrane peeling-endolaser-gas/silicone tamponade	L1,L2,L3,L4		77,000
Vitrectomy (sutureless) +membrane peeling-endolaser-gas/silicone tamponade	L1,L2,L3,L4		77,000

hyc

Trabeculectomy with MMC / 5Fluorouracil	L1,L2,L3,L4		33,000
Trabeculectomy with ologen	L1,L2,L3,L4		33,000
Retinal Detachment-scleral buckling	L1,L2,L3,L4		66,000
C3R-Corneal Collagen Cross Linking with Riboflavin	L1,L2,L3,L4		38,000
ORTHOPAEDICS			
total knee replacement- unilateral	L1,L3,L4	L2	160,000
total knee replacement- bilateral	L1,L3,L4	L2	240000
hip replacement unilateral (Unipolar)	L1,L3,L4	L2	181,953
hip replacement bilateral (Bipolar)	L1,L3,L4	L2	272930
fracture neck femur	L1,L3,L4	L2	172,328
Hemiarthroplasty	L1,L3,L4	L2	191,268
femur shaft fracture-proximal /middle/distal	L1,L3,L4	L2	173,259
tibia fracture proximal Unicondylar/middle/distal-ORIF/ ORIF	L1,L3,L4	L2	159,080
tibia fracture proximal Bicondylar-ORIF/ ORIF	L1,L3,L4	L2	165,600
ankle fracture-ORIF/ORIF with screws/TBW	L1,L3,L4	L2	134,550
arthrodesis - wrist/ankle subtalar	L1,L3,L4	L2	134,550
Hand or Foot fractures -with plates or screws	L1,L3,L4	L2	143,658
calcaneal fracture - with plates	L1,L3,L4	L2	143,658
Open Reduction and Internal Fixation of shoulder / humerus	L1,L3,L4	L2	195,305
Open Reduction and Internal Fixation of elbow	L1,L3,L4	L2	172,328
Open Reduction and Internal Fixation - fracture of both bones forearm	L1,L3,L4	L2	172,328
Open Reduction and Internal Fixation - fracture of single born forearm/wrist	L1,L3,L4	L2	172,328
scaphoid fracture fixation	L1,L3,L4	L2	119,646
Arthroscopic debridement and Sinovectomy	L1,L3,L4	L2	118,197
shoulder-arthroscopy bankart repair	L1,L3,L4	L2	117,783
shoulder-arthroscopy / open- sub acromial decompression	L1,L3,L4	L2	164,669
ACL reconstruction /repair	L1,L3,L4	L2	97097
MCL reconstruction/repair	L1,L3,L4	L2	97097
ACL & PCL reconstruction /repair	L1,L3,L4	L2	147180
Laminectomy/disectomy	L1,L3,L4	L2	178227
stabilization of cervical spine	L1,L3,L4	L2	213521
thoraco / lumbar global fixation/bone graft	L1,L3,L4	L2	144,383
thoraco / lumbar - anterior interbody fixation/bone graft	L1,L3,L4	L2	144,383
carpel tunnel release- unilateral	L1,L2,L3,L4		58,740

carpel tunnel release- bilateral	L1,L2,L3,L4		75,452
close reduction of fractures / dislocations (day care)	L1,L2,L3,L4		79,488
implant removal of small bones	L1,L2,L3,L4		56,822
implant removal of large bones	L1,L2,L3,L4		74,520
implant removal of spine	L1,L2,L3,L4		87,561
bone grafting for non union of small bones	L1,L3,L4	L2	108,261
bone grafting for non union of large bones	L1,L3,L4	L2	127,305
Acetabular fracture fixation	L1,L3,L4	L2	200,480
pelvis fracture- external fixation	L1,L3,L4	L2	195,098
reduction of dislocation in GA	L1,L2,L3,L4		69,863
Amputation of Digit -single	L1,L2,L3,L4		55,890
Amputation of Digit -multiple	L1,L2,L3,L4		95,220
Amputation above elbow/ knee	L1,L2,L3,L4		182,885
Amputation below elbow/ knee	L1,L2,L3,L4		150,075
Small Wound Debridement (Day Care)	L1,L2,L3,L4		68,000
Large Wound Debridement	L1,L2,L3,L4		82,386
Tendon Repair /Multiple	L1,L2,L3,L4		92,219
Tendon reconstrucation	L1,L2,L3,L4		113,022
UROLOGY AND NEPHROLOGY			
PCNL -unilateral	L1,L2,L3,L4		129,272
PCNL bilateral	L1,L2,L3,L4		158,873
prostate removal- TURP	L1,L2,L3		121,209
prostate removal- OPEN	L1,L2,L3		133,330
prostat removal- HOLMIUM/DIODE	L1,L3,L4	L2	129,375
meatotomy (day care)	L1,L2,L3,L4		35,294
dialysis (all inclusive, Day Care)	L1,L2,L3,L4		2,500
renal transplant surgery (all inclusive, except organ)	L1,L2,L3,L4		NA
DJ stent removal (day care)	L1,L2,L3,L4		36,225
cystoscopy (therapeutic)	L1,L2,L3,L4		60,548
cystoscopy urs with DJ stenting unilateral	L1,L2,L3,L4		70,000
nephrectomy Open	L1,L2,L3,L4		145,418
nephrectomy Lap	L1,L2,L3,L4		167,230
nephrolithotomy / pyelolithotomy	L1,L2,L3,L4		134,964
orchidectomy-unilateral	L1,L2,L3,L4		68,000
orchidectomy-bilateral	L1,L2,L3,L4		92,840
ESWL-Extra Corporeal Shock wave lithotripsy (day care)	L1,L2,L3,L4		33,327



URS /Theapeutic	L1,L2,L3,L4		61893
NEUROSURGERY			
VP shunting	L1,L2,L3,L4	L2 (Additional Shunt)	165,600
Craniotomy with evacuation of Haemotoma	L1,L2,L3,L4		286,281
Decompressive Craniectomy	L1,L2,L3,L4		
VASCULAR SURGERY			
varicose veins (surgical)(Straping)	L1,L2,L3,L4		135,999
varicose veins (laser or Radio frequency Ablation)	L1,L2,L3,L4		127,305
SURGICAL ONCOLOGY			
Abdominal Wall Tumour Resection	L1,L2,L3,L4		99,000
Abdomino Perineal Resection (Apr) + Sacrectomy	L1,L2,L3,L4		167,000
Abdominoperineal Resection	L1,L2,L3,L4		167,000
Amputation for soft tissue/Bone Tumours	L1,L2,L3,L4		99,000
Anterior/Posterior Exenteration	L1,L2,L3,L4		167,000
Anterior Resection	L1,L2,L3,L4		167,000
Axillary Dissection	L1,L2,L3,L4		57,500
Adrenalectomy	L1,L2,L3,L4		167,000
Bilateral Orchiectomy	L1,L2,L3,L4		57,500
Bilateral Pelvic Lymph Node Dissection(BPLND)	L1,L2,L3,L4		99,000
Bilateral Pelvic Lymph Node Dissection(BPLND) for CA Urinary Bladder	L1,L2,L3,L4		167,000
Bone Resection	L1,L2,L3,L4		167,000
Breast Reconstruction	L1,L2,L3,L4		167,000
Chest Wall Resection	L1,L2,L3,L4		114,000
Chest Wall Resection + Reconstruction	L1,L2,L3,L4		167,000
Closure Of Colostomy	L1,L2,L3,L4		167,000
Closure Of Ileostomy	L1,L2,L3,L4		167,000
Colectomy Any Type	L1,L2,L3,L4		167,000
Colostomy	L1,L2,L3,L4		57,500
Composite Resection & Reconstruction	L1,L2,L3,L4		57,500
Cranio Facial Resection	L1,L2,L3,L4		57,500

Curettage & Bone Cement	L1,L2,L3,L4	57,500
Emasculation	L1,L2,L3,L4	57,500
Jejunostomy	L1,L2,L3,L4	57,500
Forequarter Amputation	L1,L2,L3,L4	57,500
Full Thickness Buccal Mucosal Resection & Reconstruction	L1,L2,L3,L4	57,500
Gastrectomy Any Type	L1,L2,L3,L4	57,500
Gastro Jejunostomy	L1,L2,L3,L4	57,500
Gastrostomy	L1,L2,L3,L4	57,500
Haemangioma SOL Liver Hepatectomy + Wedge Resection	L1,L2,L3,L4	57,500
Hemiglossectomy	L1,L2,L3,L4	57,500
Hemimandibulectomy	L1,L2,L3,L4	57,500
Hemipelvectomy	L1,L2,L3,L4	57,500
High Orchidectomy	L1,L2,L3,L4	57,500
Ileostomy	L1,L2,L3,L4	57,500
Ileotransverse Colostomy	L1,L2,L3,L4	57,500
Inguinal Block Dissection One Side	L1,L2,L3,L4	57,500
Intercostal Drainage(ICD)	L1,L2,L3,L4	57,500
Internal Hemipelvectomy	L1,L2,L3,L4	167,000
Laryngo Pharyngo Oesophagectomy	L1,L2,L3,L4	167,000
Lateral Temporal Bone Resection	L1,L2,L3,L4	114,000
Limb Salvage Surgery With Custom Made Prosthesis	L1,L2,L3,L4	167,000
Limb Salvage Surgery With Modular Prosthesis	L1,L2,L3,L4	167,000
Limb Salvage Surgery Without Prosthesis	L1,L2,L3,L4	167,000
Lumpectomy Breast	L1,L2,L3,L4	114,000
Lung Cancer Lobectomy	L1,L2,L3,L4	167,000
Lung Cancer Pneumonectomy	L1,L2,L3,L4	167,000
Lung Metastatectomy. Multiple	L1,L2,L3,L4	167,000
Lung Metastatectomy. Solitary	L1,L2,L3,L4	167,000
Marginal Mandibulectomy	L1,L2,L3,L4	114,000
Maxillectomy + Infratemporal Fossa Clearance	L1,L2,L3,L4	114,000
Maxillectomy + Orbital Exenteration	L1,L2,L3,L4	114,000
Maxillectomy Any Type	L1,L2,L3,L4	99,000
Mediastinal Tumour Resection	L1,L2,L3,L4	167,000
Micro Vascular Reconstruction	L1,L2,L3,L4	167,000
Mastectomy Any Type	L1,L2,L3,L4	143,000
Myocutaneous / Cutaneous Flap	L1,L2,L3,L4	143,000

Neck Dissection Any Type	L1,L2,L3,L4	143,000
Nephroureterectomy For Transitional Cell Carcinoma Of Renal Pelvis	L1,L2,L3,L4	143,000
Oesophagectomy With Three Field Lymphadenectomy	L1,L2,L3,L4	143,000
Oesophagectomy With Two Field Lymphadenectomy	L1,L2,L3,L4	143,000
Orbital Exenteration	L1,L2,L3,L4	143,000
Other Bypasses-Pancreas	L1,L2,L3,L4	143,000
Other Cystectomies	L1,L2,L3,L4	143,000
Palatotomy Any Type	L1,L2,L3,L4	143,000
Parathyroidectomy	L1,L2,L3,L4	143,000
Partial Nephrectomy	L1,L2,L3,L4	143,000
Partial Penectomy	L1,L2,L3,L4	143,000
Radical Cholecystectomy	L1,L2,L3,L4	143,000
Radical Cystectomy	L1,L2,L3,L4	143,000
Radical Nephrectomy	L1,L2,L3,L4	143,000
Radical Prostatectomy	L1,L2,L3,L4	143,000
Radical Vaginectomy + Reconstruction	L1,L2,L3,L4	143,000
Resection Of Nasopharyngeal Tumour	L1,L2,L3,L4	143,000
Resection Of Retroperitoneal Tumours	L1,L2,L3,L4	143,000
Resection With Reconstruction of Abdominal Wall Tumour	L1,L2,L3,L4	143,000
Retro Peritoneal Lymph Node Dissection Rplnd As Part Of Staging	L1,L2,L3,L4	143,000
Retro Peritoneal Lymph Node Dissection(RPLND) (For Residual Disease)	L1,L2,L3,L4	143,000
Sacral Resection	L1,L2,L3,L4	143,000
Salpino Oophorectomy	L1,L2,L3,L4	143,000
Segmental Mandibulectomy	L1,L2,L3,L4	143,000
Segmentectomy	L1,L2,L3,L4	143,000
Shoulder Girdle Resection	L1,L2,L3,L4	143,000
Skin Tumours Amputation	L1,L2,L3,L4	143,000
Skin Tumours Wide Excision	L1,L2,L3,L4	143,000
Skin Tumours Wide Excision + Reconstruction	L1,L2,L3,L4	143,000
Sleeve Resection	L1,L2,L3,L4	143,000
Sleeve Resection Of Lung Cancer	L1,L2,L3,L4	143,000
Small Bowel Resection	L1,L2,L3,L4	143,000
Splenectomy	L1,L2,L3,L4	143,000
Submandibular Gland Excision	L1,L2,L3,L4	143,000
Subtotal Temporal Bone Resection	L1,L2,L3,L4	143,000
Surgery For Ca Ovary Advance Stage	L1,L2,L3,L4	143,000

Thyroidectomy Any Type	L1,L2,L3,L4	143,000
Total Abdominal Hysterectomy(TAH) + Bilateral Salpingo Ophorectomy (BSO) + Bilateral Pelvic Lymph Node Dissection (BPLND) + Omentectomy	L1,L2,L3,L4	143,000
Total Exenteration	L1,L2,L3,L4	143,000
Total Exenteration	L1,L2,L3,L4	143,000
Total Glossectomy + Reconstruction	L1,L2,L3,L4	143,000
Laryngectomy Any Type	L1,L2,L3,L4	143,000
Oesophagectomy Any Type	L1,L2,L3,L4	143,000
Parotidectomy Any Type	L1,L2,L3,L4	143,000
Total Pelvic Exenteration	L1,L2,L3,L4	143,000
Total Penectomy	L1,L2,L3,L4	143,000
Total Temporal Bone Resection	L1,L2,L3,L4	143,000
Tracheal Resection	L1,L2,L3,L4	143,000
Tracheal Resection	L1,L2,L3,L4	143,000
Tracheostomy	L1,L2,L3,L4	27,700
Tripple Bypass	L1,L2,L3,L4	143,000
Urinary Diversion	L1,L2,L3,L4	143,000
Vulvectomy	L1,L2,L3,L4	143,000
Whipples Any Type	L1,L2,L3,L4	143,000
Wide Excision + Reconstruction soft tissue/Bone Tumours	L1,L2,L3,L4	143,000
Wide Excision for tumour	L1,L2,L3,L4	143,000
Wide Excision of Breast for Tumour	L1,L2,L3,L4	143,000
Wide Excision soft tissue/Bone Tumours	L1,L2,L3,L4	99,000
Oesophageal stenting including stent cost	L1,L2,L3,L4	167,000
Enucleation of pancreatic neoplasm(Other than Neck of Pancreas)	L1,L2,L3,L4	167,000
CONSERVATIVE PACKAGES		
Charges for ICU without ventilator (if not covered under earlier packages) Per Day	This includes - Monitoring & Investigations Drugs Consultations Bed charges nursing charges meals Procedures like Ryles tube insertion, urinary tract Catheterization	7,500
Charges for ICU with ventilator (if not covered under earlier packages) Per Day		9,000



Packages are walk-in ; walkout packages for patients unless specified otherwise(Complicated cases) for the procedures where implants are to be charged extra.

The packages includes room stay, routine tests, routine diagnostics, OT charges, Surgeons fees, Anaesthesia, Dr's visit fees (admitting Doctor) and medicines/consumables. Package include length of stay as applicable under agreed GIPSA / TPA / Corporate Tie Up Packages. In case patient is required to stay in hospital beyond agreed length of stay under such packages then extended period shall be charged as per day basis calculated on pro rata basis as may be applicable.

In cases of multiple surgeries major surgery will be approved 100%, 2nd surgery @ 50% of package and 3rd surgery @ 25% of agreed package. Multiple surgeries shall imply surgeries done in one sitting ,in same incision and same speciality.

Blood/Blood products will be charged as per actuals as per direction 9.

Investigations do not include high end tests such as CT, MRI, Radiation, Stress Test, Liver Profile,SMA+12 etc. which will be charged on actuals as per tariff as on 31 Dec. 2019.

Pre-Operative investigation are included in package amount. Investigation included in packages- CBC, Urine Routine, HIV Spot, Anti HCV, HbsAG, Serum Creatinine, Usg, 2D Echo, X-ray and ECG.

If Hospital rack rates as on 31 Dec. 2019 found to be lower than above mentioned rates then lower rates will be applicable.

No Services charge/ Surcharge/ Emergency charge will be applicable.



ANNEXURE – B

Following are the rates in percentages, applicable to different districts and various category of hospitals based on which rates in annexure A would be calculated for those health care providers which are not part of GIPSA-PPN or do not have agreement with any TPA

Name of District	>100 beds	99 to 50 beds	Less than 50 beds
Mumbai City	100	90.0	80.0
Mumbai Suburban	100	90.0	80.0
Pune	85	76.5	68.0
Ahmednagar	75	67.5	60.0
Akola	70	63.0	56.0
Amravati.	70	63.0	56.0
Aurangabad.	80	72.0	64.0
Beed.	70	63.0	56.0
Bhandara.	70	63.0	56.0
Buldhana.	70	63.0	56.0
Chandrapur	70	63.0	56.0
Dhule	75	67.5	60.0
Gadchiroli	70	63.0	56.0
Gondia	70	63.0	56.0
Hingoli	70	63.0	56.0
Jalgaon	75	67.5	60.0
Jalna	70	63.0	56.0
Kohlapur	75	67.5	60.0
Latur	75	67.5	60.0
Nagpur	75	67.5	60.0
Nanded	75	67.5	60.0
Nandurbar	70	63.0	56.0
Nashik	75	67.5	60.0
Osmanabad	70	63.0	56.0
Parbhani	70	63.0	56.0
Raigad	75	67.5	60.0
Ratnagiri	75	67.5	60.0
Sangli	70	63.0	56.0
Satara	75	67.5	60.0
Sindhudurg	70	63.0	56.0
Solapur	75	67.5	60.0
Thane	100	90.0	80.0
Wardha	75	67.5	60.0
Washim	70	63.0	56.0
Yavatmal	70	63.0	56.0
Palghar	100	90.0	80.0



ANNEXURE – C

Maximum rates which can be charged to Covid patient (Applicable throughout Maharashtra for all Health Care Providers)			
Package	Rate in INR per day	Inclusions	Exclusions
Charges for Routine ward + Isolation	4000	This includes - Monitoring & Investigations like CBC, Urine Routine, HIV Spot Anti HCV, Hbs Ag, Serum Creatinine, USG, 2D Echo, X-ray, ECG, Drugs Consultations Bed charges nursing charges meals Procedures like Ryles tube insertion, urinary tract Catheterization	Does not include - 1) PPE 2) Interventional Procedures like, but not limited to, Central Line insertion, Chemoport Insertion, bronchoscopic procedures, biopsies, ascitic/pleural tapping, etc, which may be charges at the rack rate as on 31st Dec 2019. 3) COVID testing - to be done as per actual cost as per direction 9. 4) High end drugs like Immunoglobulins, Meropenem, Parenteral Nutrition, Tocilizumab, etc - to be charged at MRP as per direction 9. 5) High end investigations like CT scan, MRI, PET scan or any lab investigation not included in the previous column - to be charges at rack rates of hospital as on 31st Dec 2019.
Charges for ICU without ventilator + Isolation	7500		
Charges for ICU with ventilator + Isolation	9000		



कोवीड-१९ साथरोग प्रादुर्भावाच्या पार्श्वभूमीवर
महात्मा ज्योतिबा फुले जन आरोग्य योजनेचा
लाभ राज्यातील सर्व नागरिकांना सर्व अंगीकृत
रुग्णालयांमार्फत उपलब्ध करून देण्याबाबत.

महाराष्ट्र शासन
सार्वजनिक आरोग्य विभाग
शासन निर्णय क्रमांक: रास्वयो-२०२०/प्र.क्र.८०/आरोग्य-६
जी.टी. रुग्णालय आवार, १० मजला
मंत्रालय, मुंबई -०१
दिनांक: २३ मे, २०२०

वाचा :-

- १) सार्वजनिक आरोग्य विभाग, शासन निर्णय क्रमांक: रास्वयो-२०१८/प्र.क्र.७४/आरोग्य-६, दि. २६ फेब्रुवारी, २०१९
- २) मुख्य कार्यकारी अधिकारी, राज्य आरोग्य हमी सोसायटी, वरळी, मुंबई यांचे क्र. राआहसो/मुकाअ/कोविड-१९/५४३/२०२० दिनांक २७.०४.२०२० चे पत्र.

प्रस्तावना :-

राज्यामध्ये संदर्भीय दिनांक २६.०२.२०१९ च्या शासन निर्णयान्वये सुधारीत महात्मा ज्योतिबा फुले जन आरोग्य योजनेशी प्रधानमंत्री जन आरोग्य योजना संलग्नीकरण करून एकत्रित स्वरूपात मे. युनायटेड इंडिया इन्शुरन्स कंपनीच्या सहकार्याने दिनांक ०१.०४.२०२० पासून अंमलात आली आहे. सदर योजनेत सुमारे ८५ ते ९० टक्के नागरिकांचा लाभार्थी म्हणून समावेश होत असून उर्वरीत नागरिक योजनेच्या लाभापासून वंचित राहत आहेत. महात्मा ज्योतिबा फुले जन आरोग्य योजना व प्रधानमंत्री जन आरोग्य योजनांची अंमलबजावणी व सनियंत्रण राज्य आरोग्य हमी सोसायटीमार्फत केले जाते. महात्मा ज्योतिबा फुले जन आरोग्य योजनेतर्गत पिवळी, केशरी, अंत्योदय, अन्नपुरा योजना शिधापत्रिकाधारक कुटुंबे आणि अवर्षणग्रस्त १४ जिल्ह्यांमधील (औरंगाबाद व अमरावती विभागातील सर्व जिल्हे आणि नागपूर विभागातील वर्धा जिल्हा) शुभ्र शिधापत्रिकाधारक शेतकरी कुटुंबे तसेच महाराष्ट्र इमारत व इतर बांधकाम कामगार कल्याणकारी मंडळातील जीवित नोंदणीकृत लाभार्थी कुटुंबे समाविष्ट आहेत. प्रधानमंत्री जन आरोग्य योजनेमध्ये सामाजिक, आर्थिक व जातनिहाय जनगणना-२०११ मधील नोंदित लाभार्थी कुटुंबे समाविष्ट असून ग्रामीण भागासाठी स्वाभाविक निकष व शहरी भागासाठी व्यावसायिक निकष ठेवण्यात आले आहेत.

सध्या जगभर पसरलेल्या कोरोना विषाणूची लागण देशभरात झाली असून कोरोनाबाधित रुग्णांची संख्या दिवसेंदिवस वाढत आहे. महाराष्ट्र राज्यात इतर राज्यांच्या तुलनेत सर्वाधिक कोरोनाबाधित रुग्णांची संख्या झालेली आहे. त्यामुळे राज्यातील कोरोना संशयित रुग्णांमध्ये होणारी वाढ लक्षात घेता अधिकाधिक रुग्णालयात उपचारांची सुविधा उपलब्ध होणे आवश्यक आहे. केंद्र शासनाच्या मार्गदर्शनानुसार राज्यामध्ये काही ठिकाणी शासकीय रुग्णालये कोविड-१९ रुग्णालये म्हणून घोषित करण्यात आलेली आहेत. या पार्श्वभूमीवर कोविड -१९ रुग्णांना अंगीकृत खाजगी रुग्णालयामध्ये उपचार घेण्यासाठी आर्थिक बोजा पडू नये तसेच कोविड -१९ महामारीच्या संकटामध्ये सर्वच नागरिकांना आरोग्य विषयक हमी व आर्थिक दिलासा मिळावा यासाठी मर्यादित कालावधीसाठी योजनेची व्याप्ती सर्व नागरिकांसाठी वाढविण्याचा प्रस्ताव राज्य आरोग्य हमी सोसायटीकडून प्राप्त झालेला आहे. तसेच महात्मा ज्योतिबा फुले जन आरोग्य योजनेतील उपचारांचा लाभ लाभार्थी रुग्णांबरोबर इतर रुग्णांनादेखील मिळावा आणि शासकीय रुग्णालयाकरीता राखीव असलेल्या उपचार पद्धती उपलब्ध व्हाव्यात व योजनेतर्गत अंगीकृत रुग्णालयातील डॉक्टर, इतर कर्मचारी व अनुषंगीक कर्मचारी यांना कोविड -१९ साथरोग प्रतिबंध संदर्भात आवश्यक साधन सामग्री उपलब्ध व्हावी याबाबत राज्य आरोग्य हमी सोसायटीकडून प्रस्ताव प्राप्त झालेला आहे. सदर प्राप्त प्रस्तावानुसार शासनाने पुढील निर्णय घेतला आहे.

शासन निर्णय :-

१. कोविड -१९ उद्रेकाच्या पार्श्वभूमीवर संभाव्य परिस्थितीचा विचार करून महात्मा ज्योतिबा फुले जन आरोग्य योजना व प्रधानमंत्री जन आरोग्य योजनेतर्गत कोरोनाबाधित रुग्णांवर उपचार करण्याकरीता लाभार्थी रुग्णांबरोबर राज्यातील सदर योजनेचे लाभार्थी नसलेल्या इतर रुग्णांनादेखील महात्मा ज्योतिबा फुले जन आरोग्य योजनेतर्गत अंगीकृत खाजगी रुग्णालयामध्ये कोविड-१९ साठी उपचार अनुज्ञेय राहिल. याबाबत राज्य आरोग्य हमी सोसायटीने विहित कार्यपद्धतीनुसार कार्यवाही करावी. (लाभार्थ्याला रहिवासी पुरावा म्हणून वैध पिवळी, केशरी, शुभ्र शिधापत्रिका, तहसीलदार यांचा दाखला व अधिवास प्रमाणपत्र यांपैकी कोणतेही एक पुरावाजन्य कागदपत्र सादर करावे लागेल, त्याबरोबरच शासनमान्य फोटो ओळखपत्र देणे आवश्यक राहिल. कोरोनाच्या साथीचे गांभीर्य, उपचाराची तातडी पाहता उपचारासाठी आवश्यक कागदपत्राबाबत शिथिलता देण्याचे अधिकार मुख्य कार्यकारी अधिकारी, राज्य आरोग्य हमी सोसायटी, वरळी, मुंबई यांना देण्यात येत आहेत. कोरोनाच्या उपचारासाठी योजनेतील समाविष्ट पॅकेजची यादी या आदेशासोबत प्रपत्र "अ" प्रमाणे राहिल.)

२. सद्यस्थितीत महात्मा ज्योतिबा फुले जन आरोग्य योजनेतर्गत १९६ उपचार व प्रधानमंत्री जन आरोग्य योजनेतर्गत १२०९ उपचार पुरविले जात असून याचा लाभ राज्यातील २.२३ कोटी कुटुंबांना मिळत आहे. या अंतर्गत राज्यातील सुमारे ८५% लोकसंख्येचा समावेश होतो. तथापि राज्यातील कोविड-१९ उद्रेकाची सद्यस्थिती पाहता सद्यस्थितीत महात्मा ज्योतिबा फुले जन आरोग्य योजना व प्रधानमंत्री जन आरोग्य योजनेतर्गत समाविष्ट नसलेल्या राज्यातील रहिवासी असलेल्या उर्वरीत

नागरिकांनासुद्धा महात्मा ज्योतिबा फुले जन आरोग्य योजनेतर्गत अनुज्ञेय १९६ उपचार पद्धतीचा लाभ मान्यता प्राप्त दराने सर्व अंगीकृत रुग्णालयामध्ये उपलब्ध करून देण्यात येईल.

३. शासकीय रुग्णालयाकरीता राखीव असलेल्या १३४ उपचारापैकी सांधा प्रत्यारोपण शस्त्रक्रिया व श्रवणयंत्राचा उपचार वगळता १२० उपचार अंगीकृत खाजगी रुग्णालयांना ३१ जुलै, २०२० पर्यंत मान्यता प्राप्त दराने देण्यात यावेत. (राखीव उपचारांची यादी प्रपत्र “ब” मध्ये दर्शविण्यात आलेली आहे). योजनेतर्गत लाभार्थ्यांच्या खर्चाची प्रतीपुर्ती विमा कंपनीकडून व योजनेतर्गत लाभार्थी नसलेल्या कुटुंबांच्या उपचाराची खर्चाची प्रतिपुर्ती संबंधित रुग्णालयास राज्य शासनाद्वारे राज्य आरोग्य हमी सोसायटी, वरळी, मुंबई यांचेमार्फत हमी तत्वावर करण्यात येईल.

४. सदरील आदेशासोबत जोडलेल्या प्रपत्र “क” मध्ये समाविष्ट असलेले काही किरकोळ व काही मोठे उपचार व काही तपासण्या ज्या महात्मा ज्योतिबा फुले जन आरोग्य योजना व प्रधानमंत्री जन आरोग्य योजनेतर्गत समाविष्ट नाहीत. त्या उपचार व तपासण्या सदरील योजनेतर्गत अंगीकृत रुग्णालयांमध्ये सर्व लाभार्थ्यांना (योजनेतर्गत लाभार्थी असलेले व लाभार्थी नसलेले) CGHS च्या दरानुसार (NABH/NABL) उपलब्ध करून देण्यात येतील. सदर खर्चाची प्रतीपुर्ती संबंधित रुग्णालयास राज्य शासनाद्वारे राज्य आरोग्य हमी सोसायटी, वरळी, मुंबई यांचेमार्फत हमी तत्वावर करण्यात येईल.

५. कोविड -१९ साठी शासनाने जाहीर केलेल्या खाजगी अंगीकृत रुग्णालयांकडून कोरोना संशयीत रुग्णांवर उपचार करण्याकरीता PPE किट्स व N-९५ मास्कचा आवश्यक वापर करण्यात येईल त्या प्रमाणात प्रत्यक्ष शासनाने ठरविलेल्या दरानुसार निधी देण्यात येईल. याबाबत जिल्हा शल्य चिकित्सक यांचेमार्फत सनियंत्रण केले जाईल व त्याची सर्वस्वी जबाबदारी ही संबंधित जिल्हा शल्य चिकित्सक यांची राहिल. तसेच प्रतीपुर्ती करण्यापुर्वी सर्व बाबी तपासून अनावश्यक आर्थिक भार पडणार नाही, याची खबरदारी मुख्य कार्यकारी अधिकारी, राज्य आरोग्य हमी सोसायटी यांची राहिल.

६. सदरील प्रयोजनार्थ येणारा खर्च हा सोसायटीस वित्तीय वर्षात उपलब्ध करून देण्यात येणाऱ्या निधीमधून भागविण्यात यावा. योजनेची अंमलबजावणी राज्य आरोग्य हमी सोसायटीने योजनेची मार्गदर्शक तत्वे, अटी व शर्तीनुसार करावी.

७. सदर योजना ३१ जुलै, २०२० पर्यंत अंमलात राहिल. तदनंतर याबाबत आढावा घेऊन मुदतवाढीचा निर्णय शासनस्तरावरून घेण्यात येईल.

८. सदर शासन निर्णय नियोजन विभागाच्या सहमतीने व वित्त विभाग अनौपचारिक संदर्भ क्र. १६१/२०२०/व्यय-१३, दिनांक १९.०३.२०२० अन्वये देण्यात आलेल्या सहमतीनुसार निर्गमित करण्यात येत आहे.

९. सदर शासन निर्णय महाराष्ट्र शासनाच्या www.maharashtra.gov.in या संकेतस्थळावर उपलब्ध करण्यात आला असून त्याचा संकेतांक २०२००५२३१२५०५६२११७ असा आहे. हा आदेश डिजिटल स्वाक्षरीने साक्षांकित करून काढण्यात येत आहे.

महाराष्ट्राचे राज्यपाल यांच्या आदेशानुसार व नावाने,

प्रदीप व्यास
23-5-2020
(डॉ. प्रदीप व्यास)

प्रधान सचिव, महाराष्ट्र शासन

प्रत,

- १) मा. राज्यपाल यांचे सचिव, राजभवन, मुंबई
- २) मा. मुख्यमंत्री, यांचे प्रधान सचिव, मंत्रालय, मुंबई
- ३) मा. मंत्री, आरोग्य यांचे खाजगी सचिव, मंत्रालय, मुंबई
- ४) मा. राज्यमंत्री, आरोग्य यांचे खाजगी सचिव, मंत्रालय, मुंबई
- ५) मा. मंत्री, (सर्व) यांचे खाजगी सचिव, मंत्रालय, मुंबई
- ६) मा. राज्यमंत्री, (सर्व) यांचे खाजगी सचिव, मंत्रालय, मुंबई
- ७) मा. विरोधी पक्षनेता, विधानपरिषद/विधानसभा, महाराष्ट्र विधानमंडळ सचिवालय, विधानभवन, मुंबई
- ८) सर्व मा. विधानसभा/विधानपरिषद सदस्य, विधानमंडळ, विधानभवन, मुंबई- २१
- ९) मुख्य सचिव, महाराष्ट्र राज्य, मुंबई
- १०) अपर मुख्य सचिव/ प्रधान सचिव/सचिव, सर्व मंत्रालयीन विभाग, मंत्रालय, मुंबई
- ११) प्रधान सचिव, विधानमंडळ सचिवालय, विधानभवन, मुंबई
- १२) विभागीय आयुक्त (सर्व)
- १३) मुख्य कार्यकारी अधिकारी, नॅशनल हेल्थ एजन्सी, भारत सरकार, नवी दिल्ली
- १४) मुख्य कार्यकारी अधिकारी, राज्य आरोग्य हमी सोसायटी, वरळी, मुंबई
- १५) आयुक्त, आरोग्य सेवा तथा अभियान संचालक, राष्ट्रीय आरोग्य अभियान
- १६) उप महासंचालक, आधार (यु.आय.डी), टेलिफोन एक्चेंज बिल्डींग, कफ परेड, मुंबई
- १७) आयुक्त, बृहन्मुंबई महानगरपालीका, मुंबई
- १८) जिल्हाधिकारी /आयुक्त, महानगरपालीका(सर्व)
- १९) मुख्य कार्यकारी अधिकारी, जिल्हा परीषद (सर्व)
- २०) संचालक, आरोग्य सेवा संचालनालय, मुंबई
- २१) संचालक, वैद्यकीय शिक्षण विभाग, बृहन्मुंबई महानगरपालीका, मुंबई
- २२) संचालक, वैद्यकीय शिक्षण व संशोधन संचालनालय, मुंबई
- २३) जिल्हा शल्यचिकित्सक (सर्व)
- २४) जिल्हा आरोग्य अधिकारी (सर्व)
- २५) नियंत्रक, शिधावाटप, मुंबई
- २६) संचालक, माहिती व जनसंपर्क संचालनालय, मंत्रालय, मुंबई
- २७) सहसंचालक/ उपसंचालक, आरोग्य सेवा परिमंडळे (सर्व)
- २८) जिल्हा पुरवठा अधिकारी, (सर्व)
- २९) जिल्हा माहिती अधिकारी (सर्व)

- ३०) अधिष्ठाता, शासकीय वैद्यकीय महाविद्यालये व रुग्णालये (सर्व)
- ३१) सह सचिव / उप सचिव, सार्वजनिक आरोग्य विभाग, मंत्रालय, मुंबई
- ३२) उप सचिव, गृह विभाग, मंत्रालय, मुंबई
- ३३) उप सचिव, उद्योग उर्जा व कामगार विभाग, मंत्रालय, मुंबई
- ३४) उप सचिव, सामाजिक न्याय व विशेष सहाय्य विभाग, मंत्रालय, मुंबई
- ३५) उप सचिव, सामान्य प्रशासन विभाग, मंत्रालय, मुंबई
- ३६) सर्व कार्यासने, सार्वजनिक आरोग्य विभाग, मंत्रालय, मुंबई
- ३७) नियोजन विभाग (कार्यासन १४७२), मंत्रालय, मुंबई
- ३८) वित्त विभाग, कार्यासन - व्यय - १३/अर्थसंकल्प-९, मंत्रालय, मुंबई-३२.
- ३९) भारतीय जनता पक्ष, महाराष्ट्र प्रदेश वसंतराव भगवान चौक, नरीमन पार्क, मुंबई-२०
- ४०) शिवसेना, शिवसेना भवन, गडकरी चौक, दादर मुंबई- २८
- ४१) इंडीयन नॅशनल काँग्रेस, महाराष्ट्र प्रदेश काँग्रेस (आय) समिती टिळक भवन, काकासाहेब गाडगीळ मार्ग, दादर, मुंबई
- ४२) राष्ट्रवादी काँग्रेस पक्ष, राष्ट्रवादी भवन, फ्री प्रेस जर्नल मार्ग, नरीमन पार्क मुंबई- २१
- ४३) बहुजन समाज पक्ष, डी-१ इन्सा हठमेंट, आझाद मैदान, मुंबई ४०० ००१
- ४४) भारतीय कम्युनिस्ट पक्ष, महाराष्ट्र कमिटी, ३१४, राजभवन, एस. व्ही. पटेल रोड, मुंबई -०४
- ४५) भारतीय कम्युनिस्ट पक्ष, मार्क्सवादी, महाराष्ट्र कमिटी, जनशक्ती हॉल, ग्लोब मिल पॅलेस, वरळी, मुंबई -१३
- ४६) निवड नस्ती (आरोग्य-६)

प्रपत्र -अ

Sr No	Category	Category Code	Sub Category	Sub Category Code	Procedures	Procedure code	Mandatory documents at the time of Preauth	Mandatory documents at the time of Claim	Relaxations given
1	Critical Care	M3	Critical Care	M3Q1	Acute Bronchitis And Pneumonia With Respiratory Failure, Ventilator 10 Days Stay	M3Q1.3	Chest X-Ray/ <u>HRCT Chest, Machine generated ABG</u> , Clinical photo with ventilatory support,	Abg, Lab Investigations, Post Treatment Evidence Of Clinical Improvement	HRCT Chest exempted
2	Critical Care	M3	Critical Care	M3Q1	Septic Shock (ICU Management) With Ventilatory Assistance	M3Q1.8	<u>Machine generated ABG</u> , RFT, <u>USG</u> , Urine R/M, Clinical photograph, Xray chest, CBC, <u>Justification from treating Physician for necessity of ventilatory support if SpO2 is <80%, esp. of no evidence of alkalosis/acidosis</u> , Screen shot of spo2	Abg, Lab Investigations, Post Treatment Evidence Of Clinical Improvement, Report Of Blood Culture/ Urine Culture . <u>If Blood Culture Report is Negative then other Markers of Sepsis Like Urine Culture/Sputum Culture/Csf Analysis/ C3 Marker To Be Given To Confirm The Dignosis Of Septic Shock exempted</u>	Other Markers Of Sepsis Like Urine Culture/ Sputum Culture/Csf Analysis/ C3 Marker To Be Given To Confirm The Dignosis Of Septic Shock exempted
3	Critical Care	M3	Critical Care	M3Q1	ARDS Plus DIC (Blood & Blood Products) With Ventilatory Care	M3Q1.6	Chest X-Ray, Machine generated ABG, Clinical photo with ventilator support, CBC, <u>DIC profile</u> BTCT	ABG, Lab Investigations, Post Treatment Evidence Of Clinical Improvement	No

Sr No	Category	Category Code	Sub Category	Sub Category Code	Procedures	Procedure code	Mandatory documents at the time of Preauth	Mandatory documents at the time of Claim	Relaxations given
4	Critical Care	M3	Critical Care	M3Q1	ARDS With Ventilatory Care 14 Days Stay	M3Q1.4	Chest X-Ray/ <u>HRCT</u> Chest, Machine generated <u>ABG</u> , Clinical photo with Ventilatory support, For ARDS packages Ventilator with NIV Mask / invasive ventilator should be discretion of treating physician. CPAP, BiPAP is not accepted	Abg, Lab Investigations, Post Treatment Evidence Of Clinical Improvement	HRCT Chest exempted. Only invasive ventilator permitted. NIV mask not allowed.
5	Critical Care	M3	Critical Care	M3Q1	ARDS With Multi Organ Failure With Ventilatory Care 14 Days Stay	M3Q1.5	Chest X-Ray/ <u>HRCT</u> Chest, Machine generated <u>ABG</u> , Clinical photo, RFT, LFT, CBC, Sr Electrolytes For ARDS packages Ventilator with NIV_Mask /invasive ventilator should be discretion of treating physician	ABG, Lab Investigations(Cbc, Lft, Rft), Post Treatment Evidence Of Clinical Improvement. Justification From Treating Dr For Standalone Niv Treatment(IF Given) In Ards	HRCT Chest exempted. Only invasive ventilator permitted. NIV mask not allowed.
6	Nephrology	M8	Nephrology	M8T2	Rapidly Progressive Renal Failure (RPRF)10 Days	M8T2.4	RFT, S. Protein, USG Abdomen, Sr. Electrolytes, (ANA/DsDNA/ANCA/C3 /C4 optional)	Post Treatment Evidence Of Clinical Improvements & Lab Investigations, Renal Biopsy	No
7	Pulmonology	M10	Pulmonology	M10T4	Acute Respiratory Failure (Without Ventilator) 10 Days Stay	M10T4.5	Serum Electrolytes , ABG, ECG, Sputum / Bronchial Washing / ET Suctions for Analysis x ray mandatory for pre auth.	Post Treatment Evidence Of Clinical And Lab Investigations	No
8	Pulmonology	M10	Pulmonology	M10T4	Acute Respiratory Failure (With Ventilator) 10 Days Stay	M10T4.6	Serum Electrolytes , ABG, ECG, Sputum / Bronchial Washing / ET Suctions for Analysis x ray mandatory for pre auth.	Post Treatment Evidence Of Clinical And Lab Investigations	No

प्रपत्र -ब

120 Govt. Reserved Procedures out of 996 procedures covered under MJPJAY

Sr no.	Category	Procedure name
1	ENT Surgery	Brachial Cyst Excision
2	ENT Surgery	Removal of Submandibular Salivary Gland
3	ENT Surgery	Parotid Duct Repair
4	ENT Surgery	Branchial Sinus Excision
5	ENT Surgery	Partial Glossectomy
6	ENT Surgery	Abbe Operation
7	ENT Surgery	Wedge Excision
8	ENT Surgery	Cystic Hygroma Excision-Major
9	ENT Surgery	Hemi/Partial/Subtotal Thyroidectomy
10	ENT Surgery	Isthmectomy
11	ENT Surgery	Total Thyroidectomy
12	ENT Surgery	Cystic Hygroma Excision-Minor
13	ENT Surgery	Para thyroidectomy
14	ENT Surgery	Excision Of Thyroglossal Cyst Fistula
15	GENERAL SURGERY	Epigastric Hernia Without Mesh
16	GENERAL SURGERY	Epigastric Hernia With Mesh
17	GENERAL SURGERY	Hiatus Hernia Repair Abdominal
18	GENERAL SURGERY	Rare Hernias (Spigalion,Obuturator,Sciatic)
19	GENERAL SURGERY	Umbilical Hernia Without Mesh
20	GENERAL SURGERY	Umbilical Hernia With Mesh
21	GENERAL SURGERY	Ventral And Scar Hernia Without Mesh
22	GENERAL SURGERY	Ventral And Scar Hernia With Mesh
23	GENERAL SURGERY	Lap. Appendicectomy
24	GENERAL SURGERY	Pyloromyotomy
25	GENERAL SURGERY	Operation For Hydatid Cyst Of Liver
26	GENERAL SURGERY	Cholecystectomy
27	GENERAL SURGERY	Lap.Cholecystectomy
28	SURGICAL GASTRO ENTEROLOGY	Cholecystectomy & Exploration Cbd
29	GENERAL SURGERY	Repair Of Cbd
30	GENERAL SURGERY	Splenectomy For Hypersplenism
31	ENT Surgery	Facial Nerve Decompression
32	ENT Surgery	Excision Of Tumors In Pharynx
33	ENT Surgery	Adenoidectomy - Gromet Insertion
34	ENT Surgery	Endoscopic Sinus Surgery
35	ENT Surgery	Mastoidectomy
36	ENT Surgery	Tympanoplasty
37	ENT Surgery	Stapedectomy - Veingraft

38	ENT Surgery	Excision Of Benign Tumour Nose
39	ENT Surgery	Angiofibroma Nose
40	ENT Surgery	Endoscopic DCR
Sr no.	Category	Procedure name
41	OPHTHALMOLOGY SURGERY	Enucleation with Orbital implant
42	GYNAECOLOGY AND OBSTETRICS SURGERY	Lavh
43	GYNAECOLOGY AND OBSTETRICS SURGERY	Vaginal Hysterectomy With Pelvic Floor Repair
44	GYNAECOLOGY AND OBSTETRICS SURGERY	Vaginal hysterectomy with mesh
45	GYNAECOLOGY AND OBSTETRICS SURGERY	Laparoscopic Cystectomy
46	GYNAECOLOGY AND OBSTETRICS SURGERY	Vaginal Hysterectomy
47	ORTHOPEDIC SURGERY AND PROCEDURES	Amputations - Forequarter
48	ORTHOPEDIC SURGERY AND PROCEDURES	Amputations - Hind Quarter And Hemipelvectomy
49	SURGICAL GASTRO ENTEROLOGY	Partial Gastrectomy
50	SURGICAL GASTRO ENTEROLOGY	Total Gastrectomy
51	SURGICAL GASTRO ENTEROLOGY	Distal Gastrectomy For Gastric Outlet Obstruction
52	SURGICAL GASTRO ENTEROLOGY	Cyst Excision + Hepatic Jejunostomy
53	SURGICAL GASTRO ENTEROLOGY	Choledochoduodenostomy Or Choledocho Jejunostomy
54	SURGICAL GASTRO ENTEROLOGY	Splenectomy
55	SURGICAL GASTRO ENTEROLOGY	Spleenectomy For Space Occupying Lesion
56	PLASTIC SURGERY	Cleft Lip
57	PLASTIC SURGERY	Cleft Palate
58	PEDIATRIC SURGERIES	Congenital Dermal Sinus
59	PEDIATRIC SURGERIES	Cystic Lesions Of The Neck
60	PEDIATRIC SURGERIES	Sinuses & Fistula Of The Neck
61	PEDIATRIC SURGERIES	Thoracic Wall Defects- Correction
62	PEDIATRIC SURGERIES	Gastro Esophageal Reflux Correction
63	PEDIATRIC SURGERIES	Laparoscopic Cholecystectomy
64	PEDIATRIC SURGERIES	Scrotal Transposition Repair
65	PEDIATRIC SURGERIES	Undescended Testis
66	GENITO URINARY SURGERIES	Orchidopexy Bilateral

Sr no.	Category	Procedure name
67	GENITO URINARY SURGERIES	Open Pyelolithotomy
68	GENITO URINARY SURGERIES	Open Cystolithotomy
69	GENITO URINARY SURGERIES	Renal Cyst Excision
70	GENITO URINARY SURGERIES	Vasico Vaginal Fistula
71	GENITO URINARY SURGERIES	Epispadiasis - Correction
72	GENITO URINARY SURGERIES	Ureterocele
73	GENITO URINARY SURGERIES	Open Prostatectomy
74	GENITO URINARY SURGERIES	Total Cystectomy
75	NEUROSURGERY	Ventricular Tapping
76	NEUROSURGERY	Abscess Tapping
77	NEUROSURGERY	C.S.F. Rhinorrhoea
78	NEUROSURGERY	Laminectomy
79	NEUROSURGERY	Discectomy
80	NEUROSURGERY	Anterior Discectomy & Bone Grafting
81	NEUROSURGERY	Discectomy With Implants
82	NEUROSURGERY	Spinal Fixation Rods And Plates, Artificial Discs
83	PLASTIC SURGERY	Tm Joint Ankylosis
84	PLASTIC SURGERY	Leprosy Reconstructive Surgery
85	PLASTIC SURGERY	Vaginal Atresia
86	PLASTIC SURGERY	Cup And Bat Ears
87	DERMATOLOGY	Pemphigus /Pemphigoid
88	DERMATOLOGY	Toxic Epidermal Necrolysis
89	RHEUMATOLOGY	Sle (Systemic Lupus Erythematosis)
90	RHEUMATOLOGY	Sle With Sepsis
91	RHEUMATOLOGY	Scleroderma
92	RHEUMATOLOGY	Mctd Mixed Connective Tissue Disorder
93	RHEUMATOLOGY	Vasculitis
94	GASTROENTEROLOGY	Achalasia Cardia
95	GASTROENTEROLOGY	Gastric Varices
96	OPHTHALMOLOGY SURGERY	Pterygium + Conjunctival Autograft
97	ENT Surgery	Myringotomy without grommet insertion
98	ENT Surgery	Phono Surgery For Vocal Cord Paralysis
99	ORTHOPEDIC SURGERY AND PROCEDURES	Disarticulation (hind & for quarter)

Sr no.	Category	Procedure name
100	ORTHOPEDIC SURGERY AND PROCEDURES	Limb Lengthening
101	GENITO URINARY SURGERIES	Varicocele-unilateral
102	GENITO URINARY SURGERIES	Varicocele-bilateral
103	GYNAECOLOGY AND OBSTETRICS SURGERY	Tuboplasty
104	General Surgery	Excision Pilonidal Sinus
105	General Surgery	Eversion of Hydrocele Sac- unilateral
106	General Surgery	Haemorrhoidectomy+ Fistulectomy with or without sphinctor repair
107	General Surgery	Fissurectomy
108	General Surgery	Fissurectomy with Sphincterotomy
109	General Surgery	Inguinal Hernia Repair
110	General Surgery	Prolapse of Rectal Mass – Excision
111	General Surgery	Haemorrhoidectomy
112	General Surgery	Scrotal Swelling (Multiple) – Excision
113	PEDIATRIC SURGERIES	Inguinal Hernia & Hydrocele
114	Mental Disorders Packages	F20-F29 Schizophrenia, schizotypal and delusional disorders
115	Mental Disorders Packages	F30-F39 Mood (affective) disorders
116	Mental Disorders Packages	Pre- Electro Convulsive Therapy (ECT) and Pre- rTranscranial Magnetic Stimulation (TMS)Package *
117	Mental Disorders Packages	Electro Convulsive Therapy (ECT)
118	GYNAECOLOGY AND OBSTETRICS SURGERY	Hysteroscopic adhesiolysis
119	General Surgery	Ligation of Ankle Perforators
120	General Surgery	Benign Soft Tissue Tumor (small) – Excision

प्रपत्र- क

Sr No	CGHS TREATMENT PROCEDURE/INVESTIGATION LIST (DELHI/NCR)	Rate in Rs.
Minor and OPD Procedures		
1	Aspiration Plural Effusion - Diagnostic	138
2	Phimosis Under LA	1508
3	Injection for Haemorrhoids	476
4	Injection for Varicose Veins	403
5	Excision of Warts	357
6	Conjunctival wound repair or exploration following blunt trauma	3795
7	Removal of corneal foreign body	132
8	Bandage contact lenses for corneal perforation	529
9	Re-suturing (Primary suturing) of corneal wound	1323
10	Probing and Syringing of lacrimal sac- in one eye	79
11	Probing and Syringing of lacrimal sac- in both eye	159
12	Refraction	46
13	Indirect Ophthalmoscopy	77
14	Non Contact tonometry	58
15	Pure Tone Audiogram	198
16	Removal of foreign body From Nose	397
17	Removal of foreign body From Ear	265
18	Syringing (Ear)	191
19	Biopsy	529
20	Excision of lumps	2000
21	Suturing of small wounds	309
22	Removal Of Foreign Bodies	345
23	Gastroscopy	1984
24	Primary Suturing of Wound	345
25	Fingers (post slab)	298
26	Fingers full plaster	298
27	Figure of 8 bandage	596
28	Collar and cuff sling	300
29	Application of P.O.P Casts for Upper & Lower Limbs	728
30	Ultrasonic therapy	90
31	S.W. Diathermy	90
32	Electrical stimulation (therapeutic)	90
33	Muscle testing and diagnostic	82
34	Infra red	90
35	U.V. Therapeutic dose	67
36	Wax bath	86
37	Hot pack	90
Major Procedures		
38	Oesophagoscopy/foreign body removal from	2070
39	Exchange Transfusion	305
40	Normal delivery with or without Episiotomy & P. repair	9200
41	vacuum delivery	9919
42	Cesarean Section	16158
43	Manual Removal of Placenta	3968

44	Complete perineal tear-repair	2447
45	Exploration of PPH-tear repair	4025
46	Repair of post-coital tear/ perineal injury	4034
47	Diagnostic Curettage	2857
48	Colposcopy	1102
49	Dilatation of Stricture Urethra under G.A.	2300
50	Dilatation of Stricture Urethra under LA	1984
51	Close Reduction of Fractures of Limb & P.O.P without internal fixation	2990
52	Removal of Wires & Screw	2024
53	Removal of Plates	4761
54	Upper G.I. Endoscopy + Lower G.I. Endoscopy	1984
55	Endoscopic biopsy	397
56	Foreign body removal	1984
Imaging and Other Investigations		
57	ECG	58
58	2 D echocardiography	1380
59	Fetal Echo	1610
60	2 D TEE	1650
61	Stress Echo- exercise	1725
62	Occlusal X-ray	90
63	Abdomen AP Supine or Erect (One film)	150
64	Abdomen Lateral view (one film)	150
65	Chest PA view (one film)	70
66	Chest Lateral (one film)	70
67	ANC Sonography - Anomaly scan	150

कोव्हिड-१९ संबंधित कर्तव्य बजावताना
कोव्हिडमुळे मृत्यू होणा-या कर्मचा-यांना विमा
कवच/सानुग्रह सहाय्य लागू करण्याबाबत.

महाराष्ट्र शासन
वित्त विभाग

शासन निर्णय क्र. संकीर्ण २०२०/प्र.क्र. ४/व्यय-९
मादाम कामा मार्ग, हुतात्मा राजगुरु चौक,
मंत्रालय, मुंबई-४०००३२
दिनांक: २९ मे, २०२०.

संदर्भ : केंद्र शासनाच्या आरोग्य व कुटुंब कल्याण मंत्रालयाचे आदेश दि. २८.०३.२०२०.

शासन निर्णय-

कोरोनाच्या सार्वत्रिक साथीमध्ये सर्वेक्षण, शोध, माग काढणे, प्रतिबंध, चाचणी, उपचार व मदत कार्य यांचेशी संबंधित कर्तव्य बजावित असताना शासनाच्या विविध विभागातील विविध प्रवर्गातील कर्मचारी यांचा कोरोना विषाणूशी जवळून संबंध येत आहे. अशा कर्मचा-यांची काळजी घेण्यासाठी शासन कटिबद्ध असून या असुरक्षित परिस्थितीत त्यांच्या मागे ठामपणे उभे राहण्याचा शासनाचा निर्धार आहे.

२. केंद्र शासनाच्या आरोग्य व कुटुंब कल्याण मंत्रालयाने त्यांच्या दि. २८.३.२०२० च्या आदेशानुसार यासंबंधी आरोग्य कर्मचारी यांचेसाठी विमा कवच योजना लागू केली आहे.

३. तथापि, आरोग्य सेवा संबंधित कर्मचा-यांव्यतिरिक्त अन्य कर्मचारी (जिल्हा प्रशासन, पोलीस, होमगार्ड, आंगणवाडी कर्मचारी, लेखा व कोषागारे, अन्न व नागरी पुरवठा, पाणी पुरवठा व स्वच्छता, घरोघरी सर्वेक्षणासाठी नेमलेले अन्य विभागांचे कर्मचारी इत्यादी) मोठ्या प्रमाणात कोव्हिड संबंधित कर्तव्ये पार पाडीत आहेत. कोव्हिड-१९ च्या सार्वत्रिक साथीशी लढा देणासाठी सक्रीय राहून कर्तव्य बजावणा-या अशा कर्मचा-यांना पाठबळ देण्याच्या दृष्टीकोनातून व अशा कर्मचा-यांचा दुर्दैवाने मृत्यू झाल्यास त्यांचे कुटुंबियांच्या पाठीशी उभे राहण्यासाठी शासनाने खालील प्रमाणे निर्णय घेतले आहेत.

अ) कोव्हिड विषाणूच्या सार्वत्रिक साथीच्या अनुषंगाने सर्वेक्षण, शोध, माग काढणे, प्रतिबंध, चाचणी, उपचार व मदत कार्य या कार्यवाहीशी संबंधित कर्तव्यावर कार्यरत सर्व कर्मचा-यांना रु. ५० लक्ष रकमेचे सर्वकष वैयक्तिक अपघात विमा कवच पुरविण्यात येईल. या बाबतची कार्यपध्दती विमा कंपन्यांशी विचार विनिमय करून अंतिम करण्यात येत आहे.

ब) सदर विमा पॅकेज अंतिम होऊन कार्यान्वित होईपर्यंत अंतरिम उपाययोजना म्हणून कोव्हिड विषयक कर्तव्यावरील (सर्वेक्षण, शोध, माग काढणे, प्रतिबंध, चाचणी, उपचार, मदत कार्य इत्यादी) कर्मचा-यांच्या मृत्यूच्या सर्व प्रकरणी रु. ५० लक्ष रकमेचे सानुग्रह सहाय्य खालील अटींच्या अधीन प्रदान करण्यात येईल.

(१) सदर कर्मचारी त्याच्या इस्पितळात दाखल होण्याच्या अथवा मृत्यूच्या दिनांकांपूर्वी १४ दिवसांच्या काळात कर्तव्यावर हजर असला पाहिजे. ही बाब जिल्हाधिकारी अथवा अन्य कोणताही पदनिर्देशित विभाग प्रमुख इत्यादी यांचेकडून सत्यापित प्रमाणित करण्यात येईल.

(२) सदर मृत्यू कोव्हिड-१९ शी संबंधित असल्याबाबतचे वैद्यकीय प्रमाणन, शासकीय/ पालिका/महानगरपालिका, आय.सी.एम.आर नोंदणीकृत खाजगी इस्पितळ/प्रयोगशाळा यांचेकडून प्राप्त अहवालाच्या आधारे करण्यात येईल.

(३) “कर्मचारी” यांमध्ये सर्व कंत्राटी/ बाह्यस्रोतांद्वारे घेतलेले/ रोजंदारी/ तदर्थ/ मानसेवी कर्मचा-यांचा समावेश असेल.

(४) प्रस्तुत खर्चासाठी अर्थसंकल्पीय लेखाशीर्ष संबंधित मंत्रालयीन विभागांकडून सुचित करण्यात येईल.

(५) या योजनेसारखीच सानुग्रह सहाय्याची योजना सर्व स्थानिक स्वराज्य संस्था व राज्य शासकीय सार्वजनिक उपक्रम यांचेकडून राबविण्यात येईल.

क) वरील “अ” व “ब” येथील तरतुदी, केंद्र शासनाच्या संदर्भाधीन २८.३.२०२० च्या आदेशातील योजना लागू असणा-या कर्मचा-यांना व शासनाच्या योजनेत सुधारणा होऊन ज्या प्रकारच्या कोणत्याही कर्मचा-यांच्या समावेश होईल, अशा कर्मचा-यांना लागू होणार नाहीत.

४. सदर आदेश दि. ३०, सप्टेंबर, २०२० पर्यंत लागू राहतील.

५. सदर शासन निर्णयाचे अधिकारिक इंग्रजी प्रत सोबत जोडली आहे.

Regarding Insurance Cover/Ex-gratia assistance to employees in case of death on account of Covid during course of Covid related duties.

Government of Maharashtra
Finance Department
Govt. Resolution No: Misc. 2020/C.R. 4/Exp-9
Madam Cama Road, Hutatma Rajguru Chowk,
Mantralaya, Mumbai 400032
Dated - 29th May, 2020

Reference:

- 1) Ministry of Health and Family Welfare Order dated 28.03.2020

Government Resolution:

Different categories of Government employees in various departments are getting exposed to the Coronavirus in performance of their duties relating to survey, tracing, tracking, prevention, testing, treatment and relief activities for Corona pandemic. State Government is committed to the welfare of such personnel and intends to stand by them in such vulnerable situations.

2. In this regard Ministry of Health and Family Welfare, Government of India vide order dated 28.3.2020 has provided an insurance scheme for health workers and healthcare related staff.

3. However, besides healthcare staff a lot of other staff (District administration, Police, Home guards, Anganwadi workers, Finance and Treasury, Food and Civil supply, Water supply and Sanitation, Employees of various departments deputed for house to house survey work etc.) have also been involved in Covid related duties. Therefore, with a view to supporting such personnel in their active line of duty in fighting Covid-19 pandemic and to stand by their families in the event of their unfortunate loss of life, the State Government has taken the following decisions.

- A. The government will provide a comprehensive personal accident cover of Rs 50 lakhs to all employees who are on active duty relating to survey, tracing, tracking, testing, prevention, treatment and relief activities for Covid pandemic. The modalities in this regard are being worked out with insurance companies.
- B. Till the time such package is worked out and the insurance scheme comes into force, as an interim measure, all cases of deaths of the employees on duties (survey, tracing, tracking, prevention, testing, treatment, relief activities etc.), on account of Covid, will be covered through an ex-gratia assistance of Rs 50 lakhs subject to following conditions:
 - a. The employee should have been on duty within the 14-day period preceding his/her hospitalization or death. The verification/certification in this regard would be done by District Magistrates or any other designated Head of Departments etc.

- b. The medical certification that death is related to Covid-19, would be done on the basis of report of Government/Municipal/ICMR notified Private Hospital/Laboratory.
 - c. Employees would include all contractual/outsourced/daily wages/ad-hoc/honorarium-based staff also.
 - d. The budget heads in this regard would be notified by the concerned departments
 - e. Similar ex-gratia assistance scheme will also be implemented by all Local Bodies and State Govt. Public Undertakings.
- C. Provisions of A) and B) will not be applicable to the employees who have been covered under GOI scheme dated 28.3.2020 (Ref. 1) or any other category of employees included by amending that scheme.
4. These orders will be applicable till 30th September 2020.
 5. This Government resolution of Maharashtra Government is available at the website www.maharashtra.gov.in. Reference no. for this is 202005291511413805. This order has been signed digitally.

By order and in the name of the Governor of Maharashtra.

Manoj
Saunik

Digitally signed by Manoj Saunik
DN: c=IN, o=Government Of Maharashtra, ou=Public
Works Department, postalCode=400032,
st=Maharashtra,
2.5.4.20=f23a53a246b029e0821466854d96b314aef
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Saunik
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(MANOJ SAUNIK)
ADDITIONAL CHIEF SECRETARY (Finance)

AJAY BHALLA, IAS



गृह सचिव
Home Secretary
भारत सरकार
Government of India
North Block,
New Delhi

D.O.No.40-3/2020-DM-I(A)

Dated: 30th May, 2020

Dear *Chief Secretary,*

Kindly refer to the MHA order of even number, issued today, whereby lockdown has been extended in the containment zones upto June 30, 2020 with a phased re-opening of the prohibited activities. New guidelines have been issued for Unlock 1, keeping in view the suggestions received from the State Governments following the Video Conference held by the Cabinet Secretary on May 28, 2020.

2. As mentioned in the guidelines, there will be a phased re-opening of activities in areas outside Containment Zones, with the stipulation of following Standard Operating Procedures (SOPs) to be prescribed by the Ministry of Health & Family Welfare (MoHFW).

3. I would specifically like to draw your attention to Phase II, regarding re-opening of schools, colleges etc., where States and UTs have been asked to have consultations at the institution level, with parents and other stakeholders. You are advised to send the feedback on the consultations held, so that a timely decision can be taken for opening up of the education institutions.

4. The guidelines also mandate that there shall be no restriction on inter-State and intra-State movement of persons. Therefore, no separate approvals or e-passes etc. are required in this regard. However, in case you wish to regulate such movement, you are required to give wide publicity in advance.

5. As emphasized in my earlier D.O. letters, I would like to reiterate again that States/Union Territories cannot dilute restrictions imposed vide the aforesaid guidelines issued by MHA. States/ UTs, based on their assessment of the situation, may prohibit certain activities in areas outside containment zones, or impose such restrictions as deemed necessary.

6. I would urge you to ensure compliance of the new guidelines, and direct all concerned authorities for their strict implementation. Further guidelines issued by MHA and consequent Orders issued by the respective State Governments / UT Administration should be widely disseminated to the public and to the field functionaries for the convenience of people.

With regards,

Yours sincerely


30/05/2020
(Ajay Bhalla)

To

Chief Secretaries of all States

AJAY BHALLA, IAS



गृह सचिव
Home Secretary
भारत सरकार
Government of India
North Block,
New Delhi

D.O.No.40-3/2020-DM-I(A)

Dated: 30th May, 2020

Dear *Administrators,*

Kindly refer to the MHA order of even number, issued today, whereby lockdown has been extended in the containment zones upto June 30, 2020 with a phased re-opening of the prohibited activities. New guidelines have been issued for Unlock 1, keeping in view the suggestions received from the State Governments following the Video Conference held by the Cabinet Secretary on May 28, 2020.

2. As mentioned in the guidelines, there will be a phased re-opening of activities in areas outside Containment Zones, with the stipulation of following Standard Operating Procedures (SOPs) to be prescribed by the Ministry of Health & Family Welfare (MoHFW).

3. I would specifically like to draw your attention to Phase II, regarding re-opening of schools, colleges etc., where States and UTs have been asked to have consultations at the institution level, with parents and other stakeholders. You are advised to send the feedback on the consultations held, so that a timely decision can be taken for opening up of the education institutions.


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5. As emphasized in my earlier D.O. letters, I would like to reiterate again that States/Union Territories cannot dilute restrictions imposed vide the aforesaid guidelines issued by MHA. States/ UTs, based on their assessment of the situation, may prohibit certain activities in areas outside containment zones, or impose such restrictions as deemed necessary.

6. I would urge you to ensure compliance of the new guidelines, and direct all concerned authorities for their strict implementation. Further guidelines issued by MHA and consequent Orders issued by the respective State Governments / UT Administration should be widely disseminated to the public and to the field functionaries for the convenience of people.

With regards,

Yours sincerely


30/05/2020
(Ajay Bhalla)

To

Administrators of all UTs.

No. 40-3/2020-DM-I(A)
Government of India
Ministry of Home Affairs

North Block, New Delhi-110001
Dated 30th May, 2020

ORDER

Whereas, an Order of even number dated 17.05.2020 was issued for containment of COVID-19 in the country, for a period upto 31.05.2020;

Whereas, in exercise of the powers under section 6(2)(i) of the Disaster Management Act, 2005, National Disaster Management Authority (NDMA) has directed the undersigned to issue an order to extend the lockdown in Containment Zones upto 30.06.2020, and to re-open prohibited activities in a phased manner in areas outside Containment Zones;

Now therefore, in exercise of the powers, conferred under Section 10(2)(l) of the Disaster Management Act 2005, the undersigned hereby directs that guidelines, as *Annexed*, will remain in force upto 30.06.2020.


Union Home Secretary

and, Chairman, National Executive Committee (NEC)

To:

1. The Secretaries of Ministries/ Departments of Government of India
2. The Chief Secretaries/Administrators of States/Union Territories
(As per list attached)

Copy to:

- i. All members of the National Executive Committee
- ii. Member Secretary, National Disaster Management Authority

Guidelines for Phased Re-opening (Unlock 1)

[As per Ministry of Home Affairs (MHA) Order No. 40-3/2020-DM-I (A) dated 30th May, 2020]

1. Phased re-opening of areas outside the Containment Zones

In areas outside Containment Zones, all activities will be permitted, except the following, which will be allowed, with the stipulation of following Standard Operating Procedures (SOPs) to be prescribed by the Ministry of Health and Family Welfare (MoHFW), in a phased manner:

Phase I

The following activities will be allowed with effect from 8 June, 2020:

- (i) Religious places/ places of worship for public.
- (ii) Hotels, restaurants and other hospitality services.
- (iii) Shopping malls.

Ministry of Health & Family Welfare (MoHFW) will issue Standard Operating Procedures (SOPs) for the above activities, in consultation with the Central Ministries/ Departments concerned and other stakeholders, for ensuring social distancing and to contain the spread of COVID-19.

Phase II

Schools, colleges, educational/ training/ coaching institutions etc., will be opened after consultations with States and UTs. State Governments/ UT administrations may hold consultations at the institution level with parents and other stakeholders. Based on the feedback, a decision on the re-opening of these institutions will be taken in the month of July, 2020.

MoHFW will prepare SOP in this regard, in consultation with the Central Ministries/ Departments concerned and other stakeholders, for ensuring social distancing and to contain the spread of COVID-19.

Phase III

Based on the assessment of the situation, dates for re-starting the following activities will be decided:

- (i) International air travel of passengers, except as permitted by MHA.
- (ii) Metro Rail.
- (iii) Cinema halls, gymnasiums, swimming pools, entertainment parks, theatres, bars and auditoriums, assembly halls and similar places.
- (iv) Social/ political/ sports/ entertainment/ academic/ cultural/ religious functions and other large congregations.

2. National Directives for COVID-19 Management

National Directives for COVID-19 Management, as specified in **Annexure I**, shall continue to be followed throughout the country.


30/5/20

3. Night curfew

Movement of individuals shall remain strictly prohibited between 9.00 pm to 5.00 am throughout the country, except for essential activities. Local authorities shall issue orders, in the entire area of their jurisdiction, under appropriate provisions of law, such as under Section 144 of CrPC, and ensure strict compliance.

4. Lockdown limited to Containment Zones

- (i) Lockdown shall continue to remain in force in the Containment Zones till 30 June, 2020.
- (ii) Containment Zones will be demarcated by the District authorities after taking into consideration the guidelines of MoHFW.
- (iii) In the Containment Zones, only essential activities shall be allowed. There shall be strict perimeter control to ensure that there is no movement of people in or out of these zones, except for medical emergencies and for maintaining supply of essential goods and services. In the Containment Zones, there shall be intensive contact tracing, house-to-house surveillance, and other clinical interventions, as required. Guidelines of MoHFW shall be taken into consideration for the above purpose.
- (iv) States/ UTs may also identify Buffer Zones outside the Containment Zones, where new cases are more likely to occur. Within the buffer zones, restrictions as considered necessary may be put in place by the District authorities.


5. States/ UTs, based on their assessment of the situation, may prohibit certain activities outside the Containment zones, or impose such restrictions as deemed necessary.

6. Unrestricted movement of persons and goods

- (i) There shall be no restriction on inter-State and intra-State movement of persons and goods. No separate permission/ approval/ e-permit will be required for such movements.
- (ii) However, if a State/ UT, based on reasons of public health and its assessment of the situation, proposes to regulate movement of persons, it will give wide publicity in advance regarding the restrictions to be placed on such movement, and the related procedures to be followed.
- (iii) Movement by passenger trains and *Shramik* special trains; domestic passenger air travel; movement of Indian Nationals stranded outside the country and of specified persons to travel abroad; evacuation of foreign nationals; and sign-on and sign-off of Indian seafarers will continue to be regulated as per SOPs issued.
- (iv) No State/ UT shall stop the movement of any type of goods/ cargo for cross land-border trade under Treaties with neighbouring countries.

7. Protection of vulnerable persons

Persons above 65 years of age, persons with co-morbidities, pregnant women, and children below the age of 10 years are advised to stay at home, except for essential and health purposes.


30/5/20

8. Use of *Aarogya Setu*

- (i) *Aarogya Setu* enables early identification of potential risk of infection, and thus acts as a shield for individuals and the community.
- (ii) With a view to ensuring safety in offices and work places, employers on best effort basis should ensure that *Aarogya Setu* is installed by all employees having compatible mobile phones.
- (iii) District authorities may advise individuals to install the *Aarogya Setu* application on compatible mobile phones and regularly update their health status on the app. This will facilitate timely provision of medical attention to those individuals who are at risk.

9. Strict enforcement of the guidelines

- (i) State/ UT Governments shall not dilute these guidelines issued under the Disaster Management Act, 2005, in any manner.
- (ii) All the District Magistrates shall strictly enforce the above measures.

10. Penal provisions

Any person violating these measures will be liable to be proceeded against as per the provisions of Section 51 to 60 of the Disaster Management Act, 2005, besides legal action under Section 188 of the IPC, and other legal provisions as applicable. Extracts of these penal provisions are at **Annexure II**.


Union Home Secretary

and, Chairman, National Executive Committee

National Directives for COVID-19 Management

1. **Face coverings:** Wearing of face cover is compulsory in public places; in workplaces; and during transport.
2. **Social distancing:** Individuals must maintain a minimum distance of 6 feet (*2 gaz ki doori*) in public places.
Shops will ensure physical distancing among customers and will not allow more than 5 persons at one time.
3. **Gatherings:** Large public gatherings/ congregations continue to remain prohibited.
Marriage related gatherings : Number of guests not to exceed 50.
Funeral/ last rites related gatherings : Number of persons not to exceed 20.
4. **Spitting in public places** will be punishable with fine, as may be prescribed by the State/ UT local authority in accordance with its laws, rules or regulations.
5. **Consumption of liquor, paan, gutka, tobacco etc.** in public places is prohibited.

Additional directives for Work Places

6. **Work from home (WfH):** As far as possible the practice of WfH should be followed.
7. **Staggering of work/ business hours** will be followed in offices, work places, shops, markets and industrial & commercial establishments.
8. **Screening & hygiene:** Provision for thermal scanning, hand wash and sanitizer will be made at all entry and exit points and common areas.
9. **Frequent sanitization** of entire workplace, common facilities and all points which come into human contact e.g. door handles etc., will be ensured, including between shifts.
10. **Social distancing:** All persons in charge of work places will ensure adequate distance between workers, adequate gaps between shifts, staggering the lunch breaks of staff, etc.


30/5/20

Offences and Penalties for Violation of Lockdown Measures

A. Section 51 to 60 of the Disaster Management Act, 2005

51. Punishment for obstruction, etc.—Whoever, without reasonable cause —

- (a) obstructs any officer or employee of the Central Government or the State Government, or a person authorised by the National Authority or State Authority or District Authority in the discharge of his functions under this Act; or
- (b) refuses to comply with any direction given by or on behalf of the Central Government or the State Government or the National Executive Committee or the State Executive Committee or the District Authority under this Act,

shall on conviction be punishable with imprisonment for a term which may extend to one year or with fine, or with both, and if such obstruction or refusal to comply with directions results in loss of lives or imminent danger thereof, shall on conviction be punishable with imprisonment for a term which may extend to two years.

52. Punishment for false claim.—Whoever knowingly makes a claim which he knows or has reason to believe to be false for obtaining any relief, assistance, repair, reconstruction or other benefits consequent to disaster from any officer of the Central Government, the State Government, the National Authority, the State Authority or the District Authority, shall, on conviction be punishable with imprisonment for a term which may extend to two years, and also with fine.

53. Punishment for misappropriation of money or materials, etc.—Whoever, being entrusted with any money or materials, or otherwise being, in custody of, or dominion over, any money or goods, meant for providing relief in any threatening disaster situation or disaster, misappropriates or appropriates for his own use or disposes of such money or materials or any part thereof or wilfully compels any other person so to do, shall on conviction be punishable with imprisonment for a term which may extend to two years, and also with fine.

54. Punishment for false warning.—Whoever makes or circulates a false alarm or warning as to disaster or its severity or magnitude, leading to panic, shall on conviction, be punishable with imprisonment which may extend to one year or with fine.

55. Offences by Departments of the Government.—(1) Where an offence under this Act has been committed by any Department of the Government, the head of the Department shall be deemed to be guilty of the offence and shall be liable to be proceeded against and punished accordingly unless he proves that the offence was committed without his knowledge or that he exercised all due diligence to prevent the commission of such offence.

(2) Notwithstanding anything contained in sub-section (1), where an offence under this Act has been committed by a Department of the Government and it is proved that the offence has been committed with the consent or connivance of, or is attributable to any neglect on the part of, any officer, other than the head of the Department, such officer shall be deemed to be guilty of that offence and shall be liable to be proceeded against and punished accordingly.

56. Failure of officer in duty or his connivance at the contravention of the provisions of this Act.—Any officer, on whom any duty has been imposed by or under this Act and who ceases or refuses to perform or withdraws himself from the duties of his office shall, unless he has obtained the express written permission of his official superior or has other lawful excuse for so doing, be punishable with imprisonment for a term which may extend to one year or with fine.

57. Penalty for contravention of any order regarding requisitioning.—If any person contravenes any order made under section 65, he shall be punishable with imprisonment for a term which may extend to one year or with fine or with both.

58. Offence by companies.—(1) Where an offence under this Act has been committed by a company or body corporate, every person who at the time the offence was committed, was in charge of, and was responsible to, the company, for the conduct of the business of the company, as well as the company, shall be deemed to be guilty of the contravention and shall be liable to be proceeded against and punished accordingly:

Provided that nothing in this sub-section shall render any such person liable to any punishment provided in this Act, if he proves that the offence was committed without his knowledge or that he exercised due diligence to prevent the commission of such offence.

(2) Notwithstanding anything contained in sub-section (1), where an offence under this Act has been committed by a company, and it is proved that the offence was committed with the consent or connivance of or is attributable to any neglect on the part of any director, manager, secretary or other officer of the company, such director, manager, secretary or other officer shall also, be deemed to be guilty of that offence and shall be liable to be proceeded against and punished accordingly.

Explanation.—For the purpose of this section—

- (a) “company” means anybody corporate and includes a firm or other association of individuals; and
- (b) “director”, in relation to a firm, means a partner in the firm.

59. Previous sanction for prosecution.—No prosecution for offences punishable under sections 55 and 56 shall be instituted except with the previous sanction of the Central Government or the State Government, as the case may be, or of any officer authorised in this behalf, by general or special order, by such Government.

60. Cognizance of offences.—No court shall take cognizance of an offence under this Act except on a complaint made by—

- (a) the National Authority, the State Authority, the Central Government, the State Government, the District Authority or any other authority or officer authorised in this behalf by that Authority or Government, as the case may be; or
- (b) any person who has given notice of not less than thirty days in the manner prescribed, of the alleged offence and his intention to make a complaint to the National Authority, the State Authority, the Central Government, the State Government, the District Authority or any other authority or officer authorised as aforesaid.

B. Section 188 in the Indian Penal Code, 1860

188. Disobedience to order duly promulgated by public servant.—Whoever, knowing that, by an order promulgated by a public servant lawfully empowered to promulgate such order, he is directed to abstain from a certain act, or to take certain order with certain property in his possession or under his management, disobeys such direction, shall, if such disobedience causes or tends to cause obstruction, annoyance or injury, or risk of obstruction, annoyance or injury, to any person lawfully employed, be punished with simple imprisonment for a term which may extend to one month or with fine which may extend to two hundred rupees, or with both; and if such disobedience causes or trends to cause danger to human life, health or safety, or causes or tends to cause a riot or affray, shall be punished with imprisonment of either description for a term which may extend to six months, or with fine which may extend to one thousand rupees, or with both.

Explanation.—It is not necessary that the offender should intend to produce harm, or contemplate his disobedience as likely to produce harm. It is sufficient that he knows of the order which he disobeys, and that his disobedience produces, or is likely to produce, harm.

Illustration

An order is promulgated by a public servant lawfully empowered to promulgate such order, directing that a religious procession shall not pass down a certain street. A knowingly disobeys the order, and thereby causes danger of riot. A has committed the offence defined in this section.

GOVERNMENT OF MAHARASHTRA
Department of Revenue and Forest, Disaster Management,
Relief and Rehabilitation, Mantralaya, Mumbai- 400 032
No: DMU/2020/CR. 92/DisM-1, Dated: 31st May 2020

ORDER

Easing of Restrictions and Phase-wise opening of Lockdown. (MISSION BEGIN AGAIN)

Reference:

- 1) The Epidemic Diseases Act, 1897
- 2) The Disaster Management Act, 2005
- 3) Revenue and Forest, Disaster Management, Relief and Rehabilitation Department Order No. DMU-2020/C.R.92/DMU-1, dated 2nd May 2020, 3rd May 2020, 5th May 2020, 11th May 2020, 15th May 2020, 17th May 2020, 19th May 2020 and 21st May 2020
- 4) Ministry of Home Affairs (MHA) Order No. 40-3/2020-DM-I (A) Dated 1st May 2020, 11th May 2020, 17th May 2020, 20th May 2020 and 30th May 2020

Whereas, in exercise of the powers, conferred under the Disaster Management Act 2005, the undersigned, in his capacity as Chairperson, State Executive Committee has issued an Order dated 17th May, 2020 to extend the lockdown measures up to 31st May, 2020 and issued revised consolidated guidelines from time to time vide above mentioned orders to contain the spread of COVID-19.

Whereas the State Government is satisfied that the State of Maharashtra is threatened with the spread of Covid-19 Virus, and therefore to take certain emergency measures to prevent and contain the spread of the virus, the Government in exercise of the powers conferred under Section 2 of the Epidemic Diseases Act, 1897, read with all other enabling provisions of The Disaster Management Act, 2005, it is expedient to extend the lockdown in the entire State of Maharashtra further till midnight of 30th June 2020.

Now, therefore, in exercise of the powers conferred under section 2 of the Epidemic Diseases Act, 1897 and the powers, conferred under the Disaster Management Act, 2005, the undersigned, in his capacity as Chairperson, State Executive Committee, hereby issues directions to extend the lockdown, with amendments, to operationalise MISSION BEGIN AGAIN for easing of restrictions and phase-wise opening, till 30th June 2020 for containment of COVID-19 epidemic in the State and all Departments of Government of Maharashtra shall strictly implement the guidelines issued earlier from time to time.


MISSION BEGIN AGAIN

A. J. M. L.

1

It is further directed that all earlier orders shall be aligned with order and shall remain in force up to and inclusive of 30th June 2020. Further easing under MISSION BEGIN AGAIN will be notified in the due course.

BY ORDER AND IN THE NAME OF THE GOVERNOR OF MAHARASHTRA


(AJAY MEHTA)
CHIEF SECRETARY
GOVERNMENT OF MAHARASHTRA

Copy to:

1. Principal Secretary to Hon'ble Governor of Maharashtra, Mumbai,
2. Hon'ble Chairman, Maharashtra Legislative Council,
3. Hon'ble Speaker, Maharashtra Legislative Assembly,
4. Principal Secretary to Hon'ble Chief Minister, Government of Maharashtra,
5. Secretary to Hon'ble Deputy Chief Minister, Government of Maharashtra,
6. Private Secretary to Leader of Opposition, Legislative Council / Assembly,
7. Private Secretaries of All Hon'ble Minister/Minister of State, Mantralaya,
8. All Additional Chief Secretaries/Principal Secretaries/Secretaries of Government of Maharashtra,
9. Director General of Police, Maharashtra State, Mumbai,
10. Principal Secretary, Public Health Department, Mantralaya,
11. Secretary, Medical Education, Mantralaya,
12. All Divisional Commissioners in the State
13. All Commissioners of Police in the State
14. All Commissioners of Municipal Corporations in the State,
15. All District Collectors,
16. All Chief Executive Officers, Zilla Parishad,
17. All District Superintendents of Police in the State.

GOVERNMENT OF MAHARASHTRA
Department of Revenue and Forest, Disaster Management,
Relief and Rehabilitation, Mantralaya, Mumbai- 400 03
No: DMU/2020/CR. 92/DisM-1, Dated: 31st May 2020

Subject: MISSION BEGIN AGAIN (Guidelines for Easing of Restrictions and Phase-wise opening of Lockdown.)

[As per ministry of Home Affairs (MHA) Order No. 40-3/2020-DM-I (A) dated 30th May 2020, Govt. of Maharashtra Notification No. DMU/ 2020/CR. 92 /DisM-1 dated 31st May, 2020 of Department of Revenue and Forest, Disaster Management, Relief and Rehabilitation]

1. This order will come into effect from 1/6/2020 and shall remain effective till 30.06.2020.
2. **National Directives for Covid -19 management**
National Directives for Covid-19 management as specified in **Annexure I** shall be followed throughout the state.
3. **Night Curfew**
The movement of individuals shall remain strictly prohibited between 9pm to 5 am except for essential activities. Local authorities shall issue orders in the entire area of jurisdiction under appropriate provisions of law, such as prohibitory orders under sec 144 of CrPC, and ensure strict compliance.
4. **Protection Of Vulnerable Persons:**
Persons above 65 years of age, persons with comorbidities, pregnant women and children below the age of 10 years are advised to stay home, except for essential and medical services.
5. **Containment Zones:**
 - I. Containment zones will be demarcated by Municipal /District Authorities after taking into consideration the guidelines of MoHFW. The municipal commissioners in corporation areas and district collectors in other parts of the district, are empowered to decide the containment zones. Such zones should be a unit which can be effectively governed and efficiently managed considering the recourses availability. The containment zone will be residential colony, mohalla, slum, building, group of buildings, lane, ward, police station area, villages, small cluster of villages etc. Anything larger than this (eg. Whole taluka/ Whole Municipal Corporation etc.) can be declared as containment zone only after consultation with Chief Secretary.

- II. In containment zones, only essential activities shall be allowed. There shall be strict perimeter control to ensure there is no movement of people in and out of these zones, except for medical emergencies and for maintaining supply of essential goods. Guidelines of MOHFW shall be taken into consideration for the above purpose.

6. Easing of Restrictions and Phase wise Opening:

In Municipal Corporations of MMR Region including MCGM, Municipal Corporations of Pune, Solapur, Aurangabad, Malegaon, Nashik, Dhule, Jalgaon, Akola, Amravati and Nagpur following activities are additionally permitted with restrictions, in phases as described below except containment zones. This is in addition to the activities already allowed and permitted (Annexure II).

MISSION BEGIN AGAIN Phase I (With Effect from 3rd June 2020)

i. Outdoor physical activities.

Individual physical exercises like cycling/ jogging / running / walking shall be permitted on public open spaces including beaches, public / private playgrounds, grounds belonging to societies/institutions, gardens and promenades with following conditions. No activities will be permitted in indoor portion or indoor stadium.

- 1) This will be allowed between 5 am to 7 pm.
- 2) No group activity will be permitted. However, children should be accompanied by an adult.
- 3) People are advised to stay outdoors only for the purposes of physical activities for limited duration.
- 4) No other activity is permitted.
- 5) People are permitted to use only nearby/neighbourhood open spaces. Long distance travel will not be permitted.
- 6) People are advised to avoid crowded open spaces.

People are actively encouraged to use cycling as a form of physical exercise as it automatically ensures social distancing.

- ii. Activities related to self-employed people like plumbers, electricians, pest-control and technicians with social distancing norms and usage of masks and sanitization.
- iii. Garages to mend vehicles and workshops with prior appointments.
- iv. All Government offices (excluding Emergency, health & Medical, treasuries, disaster management, police, NIC, food & Civil Supply, FCI, N.Y.K., Municipal Services who

can operate at the levels as per the need) will function at 15% strength or minimum 15 employees whichever is more.

MISSION BEGIN AGAIN Phase II (With Effect from 5th June 2020)

- i. All markets, market areas & shops, except malls and market complexes, are allowed to function on P1-P2 basis (shops on one side of the road/lane/passage to be opened on odd dates while shops on the other side on even dates) from 9 am to 5 pm with following conditions.
 - a. The use of trial rooms in the shops will not be permitted for clothes, apparels and similar items to prevent spread of infection. Similarly exchange policy and return policy will not be permitted.
 - b. The shopkeepers will be responsible for ensuring social distancing norms in the shops and are encouraged to take measures such as foot markings on the floor, token system, home delivery etc.
 - c. People are advised to walk / to use cycles for shopping purposes and to use nearby/neighborhood markets as far as possible. Long distance travel for non-essential items will not be permitted. Use of motorized vehicles for shopping will be strictly discouraged.
 - d. If any failure of social distancing is seen, then authorities will immediately close down such shops/markets.

ii. Movement of people is allowed in following manner :

Taxi/Cab/aggregator	Only essential 1 + 2
Rickshaw	Only essential 1 + 2
Four Wheeler	Only essential 1 + 2
Two wheeler	Only essential One Rider

MISSION BEGIN AGAIN Phase III ((With Effect from 8th June 2020)

- i. All private offices can operate with up to 10% strength as per requirement, with remaining persons working from home. However all the employers will take sensitisation programs to educate the employees to take adequate precautions on returning home so that vulnerable group especially the elderly is not infected.
7. In the rest of State except the areas covered in clause 6, all activities, which are not in the clause 8 of this order and which are not explicitly prohibited or banned, shall continue to be permitted, with following conditions.
- a. No permission is needed from any govt. authorities for permitted activities.
 - b. Outdoor portion of Sport complexes and Stadia and other open to sky public spaces will be permitted to remain open for individual exercises; however, spectators and group

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activities will not be allowed. No activities will be permitted in indoor portion or indoor stadium. All physical exercise & activities will be done with social distancing norms.

- c. All public and private transport will follow passenger management:
 - i. Two Wheeler: 1 rider
 - ii. Three Wheeler: 1 + 2
 - iii. Four Wheeler: 1 + 2
- d. Intra district bus service will be allowed with maximum 50% capacity per bus with physical distancing and sanitation measures.
- e. Inter-district bus service orders will not be permitted. Orders will be separately issued in this regard.
- f. All markets/shops will remain open from 9 a.m. to 5 p.m. If any crowding or failure of social distancing norms is seen, then authorities will immediately close down such shops/markets.

8. The following activities will remain prohibited across the state:

- i. Schools, colleges, educational, training, coaching institutions etc.
- ii. International air travel of passengers, except as permitted by MHA.
- iii. Metro Rail.
- iv. Passenger Movement by trains and domestic air travel unless specifically allowed through separate orders and standard operating procedure (SOP)
- v. Cinema halls, gymnasiums, swimming pools, entertainment parks, theatres, bars and auditoriums, assembly halls and similar places.
- vi. Social/ political/ sports/ entertainment/ academic/ cultural/ religious functions and large congregations.
- vii. Religious places/ places of worship for public
- viii. Barber Shops, Spas, Saloons, Beauty Parlours.
- ix. Shopping Malls, Hotels, Restaurants and other Hospitality Services.

Easing of Restrictions and opening up for these activities will be done in phased manner along with Standard Operating Procedures/Guidelines

9. Special directions to ensure movement of persons and goods in certain cases.

- i. All Authorities shall allow inter-State and Intra-State movement of medical professionals, nurses and para medical staff, sanitation personnel and ambulances, without any restriction.

- ii. However inter-state and inter-district movement of persons shall continue to be regulated. The movement of stranded labour, migrant workers, pilgrim, tourists etc will continue to be regulated as per SOPs issued.
- iii. Similarly, movement of persons by shramik special trains and seafarers will continue to be regulated as per SOPs issued.
- iv. Movement of Indian nationals stranded outside the country and of specified persons to travel abroad; evacuation of foreign nationals; sign-on and sign-off of Indian seafarers will continue to be regulated as per SOPs issued.
- v. All Authorities shall allow Inter-State movement of all types of goods/ cargo, including empty trucks.
- vi. No authorities shall stop the movement of any type of goods/cargo for cross land-border trade under Treaties with neighbouring countries.

10. Use of Aarogya Setu


- i. Aarogya Setu enables early identification of potential risk of infection, and thus acts as a shield for individuals and the community.
- ii. With a view to ensuring safety in offices and workplaces, employers on best effort basis should ensure that Aarogya Setu is installed by all employees having compatible mobile phones.
- iii. District authorities may advise individuals to install the Aarogya Setu application on compatible mobile phones and regularly update their health status on the app. This will facilitate timely provision of medical attention to those individuals who are at risk.

11. General instructions

- a) Notwithstanding anything contained in this order, containment areas will continue to follow same health protocols, as laid down before this order.
- b) No district/regional / State authority will issue ANY order/guideline/direction in deviation or contrary to these guidelines, without the approval of Chief Secretary, Maharashtra.

12. Penal provisions

Any person violating these measures will be liable to be proceeded against as per the provisions of Section 51 to 60 of the Disaster Management Act, 2005 besides legal action under Sec. 188 of the IPC, and other legal provisions as applicable. Extracts of these penal provisions are at **Annexure III**.


(AJAY MEHTA)
CHIEF SECRETARY
GOVERNMENT OF MAHARASHTRA

Annexure I

[MISSION BEGIN AGAIN: Department of Revenue and Forest, Disaster Management, Relief and Rehabilitation, Mantralaya, Mumbai- 40032, Order No: DMU/2020/CR. 92/DisM-1, Dated: 31st May 2020]

National Directives for COVID 19 Management

- 1) **Face coverings** – wearing of face cover is compulsory in public places, in workplaces and during transport.
- 2) **Social distancing** – individuals must maintain a minimum distance of 6 feet (2 Gaz Ki doori) in public places.
Shops will ensure physical distancing among customers and will not allow more than five persons at one time.
- 3) **Gatherings** – large public gatherings / congregations continue to remain prohibited.
Marriage related gatherings – Number of guests not to exceed 50.
Funeral / last rites related gatherings – number of persons not to exceed 20.
- 4) **Spitting in public places** will be punishable with fine, as may be prescribed by the concerned authority in accordance with its laws, rules or regulations.
- 5) **Consumption of liquor, Paan, tobacco, etc** in public places is prohibited.

Additional directives for workplaces.

- 6) **Work from home (WFH)** – as far as possible the practice of WFH should be followed. Staggering of work / business hours will be followed in offices, workplaces, shops, markets and industrial & commercial establishments.
- 7) **Screening and hygiene** – provision for thermal scanning, hand wash and sanitizer will be made at all entry and exit points and common areas.
- 8) **Frequent sanitization** of entire workplace, common facilities and all points which come into human contact e.g. door handles etc. will be ensured, including between shifts.
- 9) **Social distancing** – all persons in charge of workplaces will ensure adequate distance between workers, adequate gaps between shifts, staggering the lunch breaks of staff, etc.

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Annexure II

MISSION BEGIN AGAIN: Department of Revenue and Forest, Disaster Management, Relief and Rehabilitation, Mantralaya, Mumbai- 40032, Order No: DMU/2020/CR. 92/DisM-1, Dated: 31st May 2020]

For the purposes of Clause 6:

Activities permitted so far by various orders upto order dated 19th May 2020

- i. All essential shops which are allowed to remain open before this order, shall continue to do so.
- ii. All non-essential shops will be allowed to continue as per relaxations and guidelines issued before this order and are in operation as per the policy of respective Municipal Corporation. Liquor shops will continue to operate if permitted, home delivery or otherwise.
- iii. E-commerce activity for essential as well as non-essential items & material.
- iv. All the industrial units which are presently open will continue to operate.
- v. All construction sites (Public/Private) which are allowed to remain open and operational. All such pre-monsoon works (Public and Private) which are allowed.
- vi. Home delivery restaurants / Kitchen.
- vii. On-line/ distance learning and related activities.
- viii. Govt Offices at 5% strength or 10 persons whichever is higher.
- ix. People's movement is allowed in following manner :

Four Wheeler	Only essential 1 + 2
Two wheeler	Only essential One Rider

- x. Any other allowed and permitted activity by any specific/general order.

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[Department of Revenue and Forest, Disaster Management, Relief and Rehabilitation, Mantralaya, Mumbai-40032, Order No: DMU/2020/CR. 92/DisM-1, Dated: 31st May 2020]

Offences and Penalties for Violation of Lockdown Measures

A. Section 51 to 60 of the Disaster Management Act, 2005

51. Punishment for obstruction, etc.—Whoever, without reasonable cause —

(a) obstructs any officer or employee of the Central Government or the State Government, or a person authorised by the National Authority or State Authority or District Authority in the discharge of his functions under this Act; or

(b) refuses to comply with any direction given by or on behalf of the Central Government or the State Government or the National Executive Committee or the State Executive Committee or the District Authority under this Act,

shall on conviction be punishable with imprisonment for a term which may extend to one year or with fine, or with both, and if such obstruction or refusal to comply with directions results in loss of lives or imminent danger thereof, shall on conviction be punishable with imprisonment for a term which may extend to two years.

52. Punishment for false claim.—Whoever knowingly makes a claim which he knows or has reason to believe to be false for obtaining any relief, assistance, repair, reconstruction or other benefits consequent to disaster from any officer of the Central Government, the State Government, the National Authority, the State Authority or the District Authority, shall, on conviction be punishable with imprisonment for a term which may extend to two years, and also with fine.

53. Punishment for misappropriation of money or materials, etc.—Whoever, being entrusted with any money or materials, or otherwise being, in custody of, or dominion over, any money or goods, meant for providing relief in any threatening disaster situation or disaster, misappropriates or appropriates for his own use or disposes of such money or materials or any part thereof or wilfully compels any other person so to do, shall on conviction be punishable with imprisonment for a term which may extend to two years, and also with fine.

54. Punishment for false warning.—Whoever makes or circulates a false alarm or warning as to disaster or its severity or magnitude, leading to panic, shall on conviction, be punishable with imprisonment which may extend to one year or with fine.

55. Offences by Departments of the Government.—(1) Where an offence under this Act has been committed by any Department of the Government, the head of the Department shall be deemed to be guilty of the offence and shall be liable to be proceeded against and punished accordingly unless he proves that the offence was committed without his knowledge or that he exercised all due diligence to prevent the commission of such offence.

By: [Signature]

(2) Notwithstanding anything contained in sub-section (1), where an offence under this Act has been committed by a Department of the Government and it is proved that the offence has been committed with the consent or connivance of, or is attributable to any neglect on the part of, any officer, other than the head of the Department, such officer shall be deemed to be guilty of that offence and shall be liable to be proceeded against and punished accordingly.

56. Failure of officer in duty or his connivance at the contravention of the provisions of this Act.—Any officer, on whom any duty has been imposed by or under this Act and who ceases or refuses to perform or withdraws himself from the duties of his office shall, unless he has obtained the express written permission of his official superior or has other lawful excuse for so doing, be punishable with imprisonment for a term which may extend to one year or with fine.

57. Penalty for contravention of any order regarding requisitioning.—If any person contravenes any order made under section 65, he shall be punishable with imprisonment for a term which may extend to one year or with fine or with both.

58. Offence by companies.—(1) Where an offence under this Act has been committed by a company or body corporate, every person who at the time the offence was committed, was in charge of, and was responsible to, the company, for the conduct of the business of the company, as well as the company, shall be deemed to be guilty of the contravention and shall be liable to be proceeded against and punished accordingly: Provided that nothing in this sub-section shall render any such person liable to any punishment provided in this Act, if he proves that the offence was committed without his knowledge or that he exercised due diligence to prevent the commission of such offence. (2) Notwithstanding anything contained in sub-section (1), where an offence under this Act has been committed by a company, and it is proved that the offence was committed with the consent or connivance of or is attributable to any neglect on the part of any director, manager, secretary or other officer of the company, such director, manager, secretary or other officer shall also, be deemed to be guilty of that offence and shall be liable to be proceeded against and punished accordingly.

Explanation.—For the purpose of this section— (a) “company” means anybody corporate and includes a firm or other association of individuals; and (b) “director”, in relation to a firm, means a partner in the firm.

59. Previous sanction for prosecution.—No prosecution for offences punishable under sections 55 and 56 shall be instituted except with the previous sanction of the Central Government or the State Government, as the case may be, or of any officer authorised in this behalf, by general or special order, by such Government.

60. Cognizance of offences.—No court shall take cognizance of an offence under this Act except on a complaint made by— (a) the National Authority, the State Authority, the Central Government, the State Government, the District Authority or any other authority or officer authorised in this behalf by that Authority or Government, as the case may be; or (b) any person who has given notice of not less than thirty days in the manner prescribed, of the alleged offence and his intention

to make a complaint to the National Authority, the State Authority, the Central Government, the State Government, the District Authority or any other authority or officer authorized as aforesaid.

B. Section 188 in the Indian Penal Code, 1860

188. Disobedience to order duly promulgated by public servant.—Whoever, knowing that, by an order promulgated by a public servant lawfully empowered to promulgate such order, he is directed to abstain from a certain act, or to take certain order with certain property in his possession or under his management, disobeys such direction, shall, if such disobedience causes or tends to cause obstruction, annoyance or injury, or risk of obstruction, annoyance or injury, to any person lawfully employed, be punished with simple imprisonment for a term which may extend to one month or with fine which may extend to two hundred rupees, or with both; and if such disobedience causes or tends to cause danger to human life, health or safety, or causes or tends to cause a riot or affray, shall be punished with imprisonment of either description for a term which may extend to six months, or with fine which may extend to one thousand rupees, or with both.

Explanation.—It is not necessary that the offender should intend to produce harm, or contemplate his disobedience as likely to produce harm. It is sufficient that he knows of the order which he disobeys, and that his disobedience produces, or is likely to produce, harm.

Illustration

An order is promulgated by a public servant lawfully empowered to promulgate such order, directing that a religious procession shall not pass down a certain street. A knowingly disobeys the order, and thereby causes danger of riot. A has committed the offence defined in this section.

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GOVERNMENT OF MAHARASHTRA
Department of Revenue and Forest, Disaster Management,
Relief and Rehabilitation, Mantralaya, Mumbai- 400 032
No: DMU/2020/CR. 92/DisM-1, Dated: 4th June 2020

ORDER

Amendments to the Guidelines- Easing of Restrictions and Phase-wise opening of Lockdown. (MISSION BEGIN AGAIN)

Reference:

- 1) Revenue and Forest, Disaster Management, Relief and Rehabilitation Department Order No. DMU-2020/C.R.92/DMU-1, dated 2nd May 2020, 3rd May 2020, 5th May 2020, 11th May 2020, 15th May 2020, 17th May 2020, 19th May 2020, 21st May 2020 and 31st May 2020
- 2) Ministry of Home Affairs (MHA) Order No. 40-3/2020-DM-I (A) Dated 1st May 2020, 11th May 2020, 17th May 2020, 20th May 2020 and 30th May 2020

In continuation to the Order No. DMU-2020/C.R.92/DMU-1, dated 31st May 2020 the State Government and in exercise of the powers, conferred under the Disaster Management Act, 2005 the undersigned, in his capacity as Chairperson, State Executive Committee, hereby issues orders to **amend and include** the following in these revised guidelines Order dated 31st May, 2020 after careful consideration of planning of containment areas and availability of health infrastructure, for the strict implementation by the concerned authorities of all the departments in the State of Maharashtra:

1. In Clause 6 under Mission Begin Again Phase I, under sub-clause (i) Outdoor Physical Activities, following condition is added after condition (6):


7) No equipment/ garden equipment/open air gym equipment/ play area equipment like Swings/ bars etc. will be allowed to operate.

2. In Clause 6, Mission Begin Again Phase II following sub-clause is added after sub-clause (d):

e. All shops on one side of the road/lane/passage will open for the full working hours on one day while all the shops of other side of the road will remain open on next day and so on. The Municipal Commissioners along with Police Commissioner should actively involve Market / Shop Owner Associations for giving effect to above arrangements and for smooth enforcements of requirements of social distancing and traffic management.

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3. In Clause 6, Mission Begin Again Phase III sub-clause (i) will read as:
- i) All private offices can operate up to 10% strength ***or 10 people, whichever is more***, with remaining persons working from home. However, all the employers will take sensitization program to educate the employees about adequate precautions on returning home so that vulnerable group especially the elderly is not infected. (With effect from 8th June 2020).
4. In Clause 6, Mission Begin Again Phase III following sub-clause is added after sub-clause (i):
- ii) *Printing and Distribution of newspapers (including home delivery) is allowed. It shall be with the knowledge of receiver and for the delivery of newspaper, personnel shall wear mask and use hand sanitizer and maintain social distancing. (With effect from 7th June 2020).*
5. In Clause 7, following sub-clause is added after sub-clause (f).
- g. *The offices/staff of Educational institutions (Universities/ Colleges/ Schools) can operate only for the purpose of non-teaching purposes including development of e-content, evaluation of answer sheets and declaration of results*
6. In Clause 9, sub-clause (ii) will read as:
- ii. However, interstate and inter district movement of persons shall continue to be regulated. ***However the inter-district movement of persons within the area of Municipal Corporations under the MMR (Mumbai Metropolitan Region) shall be allowed without any restrictions.*** The movement of standard labor, migrant workers, pilgrims, tourist etc. will continue to be regulated as per SOPs issued.


(AJAY MEHTA)

CHIEF SECRETARY

GOVERNMENT OF MAHARASHTRA

Copy to:

1. Principal Secretary to Hon'ble Governor of Maharashtra, Mumbai.
2. Hon'ble Chairman, Maharashtra Legislative Council.
3. Hon'ble Speaker, Maharashtra Legislative Assembly.
4. Principal Secretary to Hon'ble Chief Minister, Government of Maharashtra.

5. Principal Secretary to Hon'ble Chief Minister, Government of Maharashtra,
6. Secretary to Hon'ble Deputy Chief Minister, Government of Maharashtra,
7. Private Secretary to Leader of Opposition, Legislative Council / Assembly,
8. Private Secretaries of All Hon'ble Minister/Minister of State, Mantralaya,
9. All Additional Chief Secretaries/Principal Secretaries/Secretaries of Government of Maharashtra,
10. Director General of Police, Maharashtra State, Mumbai,
11. Principal Secretary, Public Health Department, Mantralaya,
12. Secretary, Medical Education, Mantralaya,
13. All Divisional Commissioners in the State,
14. All Commissioners of Police in the State,
15. All Commissioners of Municipal Corporations in the State,
16. All District Collectors,
17. All Chief Executive Officers, Zilla Parishad,
18. All District Superintendents of Police in the State.

No. S.11011/12/2020-EHS
Government of India
Ministry of Health and Family Welfare
Department of Health and Family Welfare
(EHS Section)

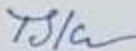
NirmanBhawan, New Delhi
Dated, the 3rd June, 2020

Office Memorandum

Subject- Reimbursement of OPD medicines to CS (MA) beneficiaries: Special
Sanction in view of COVID-19- Regarding.

In continuation of earlier O.M. of even number dated 1st April, 2020 and 5th
May, 2020, the undersigned is directed to convey extension of earlier time line till
31.05.2020 for a further period of two months upto 31.07.2020, on the same terms
and conditions as mentioned in the aforementioned O.M. dated 1st April, 2020.

This issues with the concurrence of IFD vide CD No.463 dated
03.06.2020.


(Bimal Kumar)
Deputy Secretary to the Govt. of India

To

1. All Ministries/Departments, Government of India
2. Secretary, National Council of JCM
3. All Divisions/Sections of MoHFW
4. Office Order file

Copy to:

1. PS to Hon'ble HFM
2. PS to Hon'bleMOS

S.11011/12/2020-EHS
Ministry of Health & Family Welfare
(EHS Section)

Dated 5th May, 2020
Nirman Bhawan, New Delhi

Office Memorandum

Subject: Reimbursement of OPD medicines to CS (MA) beneficiaries: Special
Sanction in view of COVID-19- reg.

In continuation of our earlier O.M. of even number dated 1st April, 2020, the undersigned is directed to convey extension of earlier time line till 30.04.2020 for a further period of one month upto 31.05.2020, on same terms and conditions as mentioned in the aforementioned O.M. dated 1st April, 2020.

This issues with the concurrence of IFD vide CD No.207 dated 4.05.2020.


(Bimal Kumar)

Deputy Secretary to the Govt. of India

To

1. All Ministries/Departments, Government of India
2. Secretary, National Council of JCM
3. All Divisions/Sections of MoHFW
4. Office Order file

Copy to:

1. PS to Hon'ble HFM
2. PS to Hon'ble MOS
3. PPS to Secy. HFW
4. NIC - for uploading the above O.M. on the website of the Ministry.

S-11011/12/2020-EHS
Ministry of Health and family Welfare
EHS Section

Dated 01st April, 2020
Nirman Bhawan, New Delhi


Office Memorandum

Subject : Reimbursement of OPD medicines to CS (MA) beneficiaries : Special Sanction in view of COVID-19 -reg.

In view of the Corona Virus Disease (COVID-19) pandemic, all out efforts are being made by the Government to contain the impact by instituting measures at community as well as Individual level.

2. Guidelines for maintaining social distancing between individuals have already been issued by the Government. In the spirit of above guidelines, the undersigned is directed to state that CS (MA) beneficiaries getting medicines for chronic diseases may purchase medicines from the local pharmacy till 30.04.2020, based on the prescription of Authorized Medical Attendant, already held by the beneficiaries.

3. The Medical claim for reimbursement shall be submitted by the beneficiary to the concerned Ministry/Department/Organization for further processing.


[Bimal Kumar]
Deputy Secretary to the Government of India
011 2306 2677

To:

1. All Ministries/Department, Government of India
2. Secretary, National Council of JCM
3. All Divisions/sections of MoHFW
4. Office Order file
5. NIC, MoHFW for uploading on the website

Copy for information to :

- i. PS to Hon'ble HFM
- ii. PS to Hon'ble MoS (AKC)
- iii. PPS to Secretary (HFW)

क्र. न्यायीक२०२०/प्र.क्र. ५८/आरोग्य ५
सार्वजनिक आरोग्य विभाग
गोकुळदास तेजपाल रुग्णालय आवार
कॉम्प्लेक्स बिल्डिंग, नविन मंत्रालय,
मुंबई-४०० ००९.
दिनांक- ३० मे, २०२०

प्रति,

जिल्हाधिकारी	(सर्व)
महानगर पालिका आयुक्त	(सर्व)
उप संचालक आरोग्य सेवा, प्रभारी मंडळ	(सर्व)
जिल्हा आरोग्य अधिकारी, जिल्हा परिषद.....	(सर्व)
जिल्हा शल्य चिकित्सक, जिल्हा रुग्णालय.....	(सर्व)
वैद्यकीय आरोग्य अधिकारी, महानगरपालिका.....	(सर्व)
कार्यकारी आरोग्य अधिकारी, बृहन्मुंबई महानगरपालिका	

विषय : कोव्हीड १९ साथ उद्रेक कालावधीमध्ये कार्यालयांबाबत मार्गदर्शक सूचना . . .

संदर्भ : केंद्रशासना कडून प्राप्त झालेल्या मार्गदर्शक सूचना दिनांक १८.०५.२०२०

राज्यामध्ये राज्य / केंद्र सरकारच्या मार्गदर्शक सूचनांनुसार सार्वजनिक कार्यालये टप्प्या-टप्प्याने कार्यरत होत आहेत. नजीकच्या कालावधीमध्ये या कार्यालयांमधील कर्मचा-यांची आणि अभ्यागतांची संख्या वाढेल. कार्यालयामध्ये वर्दळ वाढल्यामुळे कोवीड-१९ चा प्रसार होऊ नये यासाठी खालील प्रमाणे मार्गदर्शक सूचना देण्यात येत आहेत.

सर्वसाधारण सूचना :-

- कार्यालयात प्रवेश करणाऱ्या सर्व कर्मचाऱ्यांचे व अभ्यागतांचे तापमान दररोज थर्मल स्कॅनर/इन्फ्रारेड थर्मामीटर ने तपासावे. सदरच्या थर्मल स्कॅनर / इन्फ्रारेड थर्मामीटर मध्ये योग्य तापमानाची नोंद होत आहे किंवा नाही, याची रोज खात्री करावी.
- हवा खेळती राहण्याकरिता कार्यालयातील सर्व खिडक्या उघड्या ठेवाव्यात.
- कार्यालयातील सर्व कर्मचाऱ्यांनी किमान ३ पदरी कापडाचा मास्क (ट्रिपल लेयर मास्क / सर्जिकल मास्क) संपूर्ण कार्यालयीन वेळेमध्ये वापरावा.

- कार्यालयातील सर्व अधिकारी व कर्मचाऱ्यांनी जंतुसंसर्ग टाळण्यासाठी आपल्या नाकाला, डोळ्यांना तसेच तोंडाला वारंवार हात लावणे टाळावे.
- जर खोकला / सर्दी असेल तर टिशू पेपरचा किंवा रुमालाचा वापर करावा. रुमाल स्वच्छ व धुतलेला असावा. रुमाल दररोज धुवून स्वच्छ करावा. शिंकतांना व खोकतांना रुमालाचा वापर अवश्य करावा. टिशू पेपरचा वापर झाल्यानंतर त्वरित बंद कचरा पेटीत टाकावा व हात स्वच्छ धुवून घ्यावेत.
- कार्यालयात दोन कर्मचाऱ्यांमध्ये अंतर किमान ३ फूट असावे. आवश्यक असल्यास बैठक व्यवस्थेची फेररचना करावी.
- कार्यालयात प्रवेश करणाऱ्या सर्व अभ्यागतांनी सदैव मास्क घालणे अनिवार्य आहे.
- कार्यालयाच्या प्रवेशद्वाराजवळच सॅनिटायझरची तसेच प्रत्येक स्वच्छतागृहात साबण / हँडवॉशची व्यवस्था करावी.
- सर्वांनी आपले हात कमीतकमी २० सेकंदाकरिता साबणाने स्वच्छ धुवावेत. प्रत्येक दोन तासांनी तसेच स्वच्छतागृहाचा वापर केल्यानंतर साबणाने हात स्वच्छ धुवावे.
- वारंवार वापरण्यात येणाऱ्या वस्तू उदा. लिफ्ट मधील बटन, बेल, टेबल, खुर्च्या व इतर कार्यालयातील उपकरणे २% सोडियम हायपोक्लोराइट सोल्युशनने दिवसातून तीन वेळा स्वच्छ पुसून घ्यावी.
- कार्यालयातील सर्व कम्प्युटर, प्रिंटर, स्कॅनर इ. दिवसातून दोन वेळा स्वच्छ पुसून घ्यावेत. या वस्तुंचे निर्जंतुकीकरण ७०% अल्कोहोल असलेले सॅनिटायझरने करण्यात यावे.
- कार्यालय साबण व पाण्याने नियमितपणे धुवून घ्यावे. हे करताना सफाई कामगाराने Gloves, रबर बूट व ट्रिपल लेयर मास्क चा वापर करावा व काम झाल्यास त्वरित सर्व काढून त्वरित जैव वैद्यकीय कचरा (Bio-Medical Waste) च्या नियमानुसार विल्हेवाट लावावी व हात स्वच्छ धुवून घ्यावेत.
- कोव्हीड चा संसर्ग रोखण्याबाबतच्या मार्गदर्शक सूचना दर्शनीय स्थळांवर लावाव्या.

कर्मचारी / अधिकारी यांच्याकरिता सर्वसाधारण सूचना:

- एकाच वाहनामधून अनेक अधिकारी/ कर्मचारी यांनी प्रवास करू नये.
- e-office चा जास्तीत जास्त वापर करावा व फाईल्स ई-मेल द्वारे पाठवाव्या.
- कमीत कमी अभ्यागतांना कार्यालयात प्रवेश द्यावा. कार्यालयात येणाऱ्या सर्व अभ्यागतांचे तापमान थर्मल स्कॅनर ने तपासण्याबाबत सूचना निर्गमित कराव्यात.

- सदर काळामध्ये कार्यालयीन बैठकांसाठी अधिकारी / कर्मचाऱ्यांना प्रत्यक्ष बोलवू नये. त्याऐवजी व्हिडीओ कॉन्फरन्सचा वापर करावा. कार्यालयात अधिकारी/कर्मचारी यांनी एकत्र बसणे, डबा खाणे किंवा एका ठिकाणी जमा होणे टाळावे व त्याकरिता सदर पत्रानुसार त्वरीत आदेश निर्गमित करावेत.
- एकच काम अनेक व्यक्तींनी करणे आवश्यक असल्यास २-३ व्यक्तींचे लहान गट करावेत यामुळे कर्मचाऱ्यांस जंतुसंसर्ग झाला तरी फक्त त्यांच्या गटाचे अलगीकरण होईल.

कार्यालयातील अधिकारी / कर्मचारी यांना कोव्हीड संसर्ग झाल्यास :-

- कोणत्याही अधिकारी किंवा कर्मचाऱ्यांस ताप १००.४ डिग्री फॅरेनहाईट पेक्षा जास्त ताप / खोकला / दम लागत असल्यास तात्काळ रुग्णालयात भरती करावे.
- कोव्हीड अहवाल पॉझिटिव्ह असल्यास संबंधित अधिकारी/कर्मचारी यांना पुढील १४ दिवस कार्यालयात येऊ देऊ नये. अलगीकरणाबाबत आरोग्य विभागाच्या मार्गदर्शक सूचनांनुसार कार्यवाही करावी.
- कर्मचाऱ्यांचा अहवाल Positive आल्यास Contact tracing करून High risk व Low risk contact ची यादी करावी.
- अहवाल Positive आलेल्या कर्मचाऱ्यांशी ३ फूटांपेक्षा कमी अंतर ठेऊन १५ मिनिटांपेक्षा जास्त संपर्क आलेल्या सर्व कर्मचारी / अधिकाऱ्यांचे हाय रिस्क असे वर्गीकरण करावे.
- कार्यालयाच्या हॉल / खोली मधील इतर व्यक्ती, कार्यालयीन कामासाठी ३ फूटांपेक्षा जास्त अंतरावरून संपर्कात आलेल्या व्यक्तींचे लो रिस्क असे वर्गीकरण करावे.
- हाय रिस्क वर्गीकरण केलेल्या कर्मचाऱ्यांना Institutional Quarantine मध्ये दाखल करावे. याबाबत पुढील कार्यवाही आरोग्य विभागाद्वारे निर्गमित मार्गदर्शक सूचनांनुसार करावे.
- लो रिस्क वर्गीकरण केलेल्या कर्मचाऱ्यांनी, जर मास्कचा वापर केला असेल व अन्य मार्गदर्शक सूचनांचे पालन केले असेल तर त्यांनी नियमितपणे कार्यालयीन कामकाज करावे व जर संबंधितांनी मास्कचा वापर केलेला नसेल तर त्यांना पुढील १४ दिवस त्यांच्या घरी Quarantine करावे व त्यांना घरून शासकीय कामकाज करण्याच्या सूचना द्याव्यात. अशा कर्मचाऱ्यांना ताप / खोकला / थकवा / धाप लागणे इ. लक्षणे आढळल्यास त्वरीत दवाखान्यातील अलगीकरण (Quarantine) कक्षात दाखल करण्यात यावे.
- जर कार्यालयात कोव्हीड पॉझिटिव्ह कर्मचारी / अधिकारी आढळले तर सदर व्यक्तीची दिनचर्या व काम करीत असलेले क्षेत्र पाहून, सदर इमारत किंवा त्या इमारतीचा ती विंग किंवा तो मजला, मार्गदर्शक सूचनांनुसार निर्जंतुक करावेत. निर्जंतुकीकरणानंतर कार्यालयाचे काम पुनः सुरु करावे.

• सदर निर्जंतुकीकरण करताना खालील मार्गदर्शक सूचनांचा अवलंब करावा.

१. निर्जंतुकीकरण करण्यासाठी फरशी पुसताना तीन बादल्यांचा उपयोग करावा (three bucket system). एका बादलीमध्ये पाणी व डिटर्जन्ट, दुसऱ्यामध्ये स्वच्छ पाणी आणि तिसऱ्या बादलीमध्ये निर्जंतुकीकरण करण्याकरिता १% सोडीयम हायपोक्लोराईटचे द्रावण घ्यावे.
२. फरशी प्रथम डिटर्जन्ट असलेल्या पाण्याने स्वच्छ करावी.
३. पुसलेले कापड दुसऱ्या बादलीमधील असलेल्या पाण्याने स्वच्छ करून घ्यावे आणि ते कापड तिसऱ्या बादलीत असलेल्या १% हायपोक्लोराईटच्या द्रावणामध्ये बुडवून त्याने पुन्हा एकदा फरशी पुसून घ्यावी.
४. फरशी पुसताना एकाच दिशेने (Unidirectional Method) आतून बाहेरील बाजू पुसण्यात यावी.
५. दरवाजा, खिडक्या, लिफ्ट, इ. सोडीयम हायपोक्लोराईटचे १% ने पुसून घ्याव्यात.
६. कॉम्प्युटर, प्रिंटर, कि-बोर्ड, माऊस, स्कॅनर, इ. इलेक्ट्रॉनिक वस्तु ७०% अल्कोहोल असलेले सॅनिटायझरने पुसून घ्याव्यात.
७. कार्यालयीन शौचालये दिवसातून तीन वेळा सोडीयम हायपोक्लोराईट १% किंवा Detergent चा वापर करून स्वच्छ ठेवावीत.
८. जर एकाच वेळी ५ किंवा त्यापेक्षा जास्त रुग्ण आढळून आले तर, हाड्रोजन पॅरोक्साईड (H_2O_2) चा वापर करून सदरचे भागात Fogging करून, २४ तासानंतर इमारतीचा वापर सुरु करण्यात यावा.

सदर पत्रानुसार आपल्या स्तरावर त्वरीत कार्यवाही करण्यात यावी.

प्रदीप व्यास
20-5-2020
(डॉ प्रदीप व्यास)

प्रधान सचिव, महाराष्ट्र शासन

प्रत

आयुक्त तथा अभियान संचालक, रा.आ.अ., मुंबई -१

संचालक आरोग्य सेवा, मुंबई / पुणे.

GOVERNMENT OF MAHARASHTRA

No.- Corona-2020/CR No.58/Aa-5
Public Health Department
G T Hospital Complex Building
10th Floor, Mantralaya, Mumbai-1
Date : 30.05.2020

To,
District Collector (All)
Municipal Commissioner (All)

Dear All

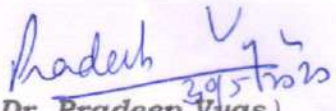
Around 6pm on 29.05.2020, we had approximately 33,124 active COVID-19 cases of which roughly 22,402 were asymptomatic i.e. roughly 67% of total active cases.

When 3 tier structure of COVID-19 care facilities was envisaged, it was expected that Covid Care Corner would take care of presymptomatic / asymptomatic patients and Dedicated Covid Health Centers would take care of mildly / moderately symptomatic cases with requirement of oxygen and only few would need admission to Dedicated Covid Hospitals.

Please see the enclosed sheet, though incomplete but shows that facility app is not being used at all places and status of patients is not being updated plus number of patients in Dedicated covid Hospitals as percentage of total active covid cases is much higher than expected.

This issue was discussed in Video Conference held few days back. It puts unnecessary pressure on hospitals, exposes health care workers to the risks of infection and leads to avoidable crowding in Dedicated Covid Hospitals. Hence, it is requested to follow guidelines of Government of India about admission in various categories of Covid health Care facilities. For ready reference the guidelines of Government of India dated 07.04.2020, which were circulated vide Circular dated 09.04.2020 are again enclosed.

Encl : As above


(**Dr. Pradeep Vyas**)
Principal Secretary,
Public Health Department

Copy to -

1. Secretary, Medical Education Department.
2. Commissioner Health cum Mission Director, NHM, Mumbai
3. Director Health Services, Pune / Mumbai
4. All Circle Deputy Director
5. All Civil Surgeon
6. All Distric Health Officer.

Facility Adoption Status Report on 28/5/2020

District	Actual Active Cases as per State report on 27/5/2020	All Facilities			Dedicated Covid Hospital (DCH)			Dedicated Covid Health Centre (DCHC)			Covid Care Centre (DCCC)			Total Active Patient as per Facility App	Difference in Active Patient Data Entry	Remarks
		Total Facilities	No. of Login Created	Total Facilities	Total Active Patients	No. of Login Created	Total Facilities	Total Active Patients	No. of Login Created	Total Facilities	Total Active Patients	No. of Login Created	Total Active Patients			
AHMEDNAGAR	34	51	49	4	4	18	22	22	0	25	23	0	18	16		
AKOLA	263	23	23	3	3	205	6	6	0	14	14	9	214	49		
AMRAVATI	90	25	24	4	4	81	4	3	0	17	17	0	81	9		
AURANGABAD	485	68	68	2	2	73	20	20	58	46	46	126	257	228		
BEEED	37	68	35	4	4	18	26	10	0	38	21	13	31	6		
BHANDARA	18	17	17	1	1	18	4	4	0	12	12	0	18	0		
BULDHANA	22	44	44	10	10	15	9	9	0	25	25	0	15	7		
CHANDRAPUR	20	32	32	4	4	13	8	8	0	20	20	1	14	6		
DHULE	57	14	14	1	1	32	5	5	8	8	8	0	40	17		
GADCHIROLI	26	19	19	2	2	27	4	4	0	13	13	0	27	-1		
GONDIA	47	17	17	2	2	2	3	3	0	12	12	45	47	0		
HINGOLI	41	23	23	2	2	0	3	3	0	18	18	0	0	41		
JALGAON	236	146	145	22	21	6	37	37	9	87	87	83	98	138		
JALNA	56	29	29	3	3	49	6	6	1	20	20	0	50	6		
KOLHAPUR	327	51	51	2	2	51	8	8	1	41	41	154	206	121		
LATUR	49	34	34	5	5	37	6	6	0	23	23	6	43	6		
MUMBAI		533	86	41	35	1	25	20	0	467	31	0	1	24506		
MUMBAI SUBURBAN	24507	205	0	3	0	0	1	0	0	201	0	0				
NAGPUR	141	47	44	4	3	139	2	0	0	41	41	0	139	2		
NANDED	31	37	36	10	9	4	7	7	0	20	20	6	10	21		
NANDURBAR	9	17	17	1	1	0	6	6	0	10	10	0	0	9		
NASHIK	210	104	93	10	8	42	18	18	19	76	67	1	62	148		
OSMANABAD	36	30	30	3	3	13	13	13	8	14	14	4	25	11		
PARBHANI	23	33	31	9	9	0	8	8	0	16	14	0	0	23		
PUNE	3237	113	103	27	26	31	34	34	311	52	43	0	342	2895		
RAIGAD	382	87	87	2	2	89	32	32	25	53	53	1	115	267		
RATNAGIRI	118	18	18	3	3	61	3	3	16	12	12	30	107	11		
SANGLI	47	89	89	4	4	42	36	36	0	49	49	1	43	4		
SATARA	260	67	58	21	20	122	18	16	3	28	22	5	130	130		
SINDHUDURG	12	28	28	1	1	1	6	6	9	21	21	0	10	2		
SOLAPUR	340	61	58	9	9	10	16	15	9	36	34	124	143	197		
THANE	5408	146	70	46	25	8	37	23	0	63	22	11	19	5389		
WARDHA	9	15	14	2	1	1	4	4	7	9	9	0	8	1		
WASHIM	3	10	10	1	1	5	2	2	0	7	7	0	5	-2		
YAVATMAL	23	36	36	1	1	14	6	6	0	29	29	0	14	9		
PALGHAR	481	35	32	7	5	18	7	6	3	21	21	0	21	460		
Total	37085	2372	1564	276	236	1246	452	409	487	1644	919	620	2353	34732		

कोविड-१९ विषाणूच्या बाधीत / संशयीत रुग्णांच्या
यथोचित व्यवस्थापनेकरीता मार्गदर्शक सूचना

महाराष्ट्र शासन
सार्वजनिक आरोग्य विभाग

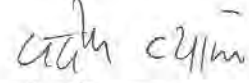
गोकुळदास तेजपाल रुग्णालय कंपाऊंड, कॉम्प्लेक्स बिल्डिंग, १० वा मजला,
नवीन मंत्रालय, मुंबई -४०० ००१
शासन परिपत्रक क्र. कोरोना-२०२०/प्र क्र ५८/ आरोग्य ५
दिनांक ०९ एप्रिल, २०२०.

केंद्र शासनाच्या आरोग्य व कुटुंब कल्याण मंत्रालयाने कोविड-१९ विषाणूच्या संशयीत / बाधीत रुग्णांच्या यथोचित व्यवस्थापनेकरीता मार्गदर्शक सूचना निर्गमित केल्या आहेत. या मार्गदर्शक सूचना या परिपत्रकासोबत जोडण्यात येत आहेत. त्या अनुषंगाने मा.मुख्य सचिव यांच्या निर्देशान्वये महाराष्ट्र राज्यातील सर्व जिल्हाधिकारी व सर्व महानगरपालिका आयुक्त यांना पुढीलप्रमाणे निर्देश देण्यात येत आहे.

- १) या परिपत्रका समवेत जोडलेल्या केंद्र शासनाच्या मार्गदर्शक सूचनांनुसार कोविड-१९ रुग्ण व्यवस्थापनाबाबत आवश्यक ती कार्यवाही करून तंतोतंत अंमलबजावणी करण्यात यावी. या सूचनांचे पालन व अंमलबजावणी करण्याची सर्वस्वी जबाबादारी व्यक्तीशः संबंधित जिल्हाधिकारी व महानगरपालिका आयुक्त यांची राहिल.
- २) प्रस्तुत मार्गदर्शक सूचनांमध्ये नमूद केल्याप्रमाणे कोविड केंअर सेंटर, डेडीकेटेड कोविड हेल्थ सेंटर, डेडीकेटेड कोविड हॉस्पिटल या तीन प्रकारात व्यवस्था तयार करावयाची आहे. सदर व्यवस्था करण्याच्या अनुषंगाने जिल्हा निहाय व महानगरपालिका निहाय या सेंटर / हेल्थ सेंटर / हॉस्पिटल यांची नावे, पत्ता व दुरध्वनी क्रमांकासह माहिती दि.१०.०४.२०२० रोजी दुपारी २.०० वाजेपर्यंत शासनास सादर करण्याची दक्षात घेण्यात यावी. सदर व्यवस्था करतांना कोविड व्यतिरिक्त इतर वैद्यकीय सेवा जसे बाहय रुग्ण सेवा, प्रसुती गृह, नवजात शिशू दक्षता कक्ष, ब्लड बँक, केमोथेरपी इत्यादी रुग्णसेवा बाधीत होणार नाही अथवा या आरोग्य सेवा सुरळीतपणे चालू ठेवण्यासाठी पर्यायी व्यवस्था करावी. यानंतर कोविड उपचारासाठी राखीव व्यवस्था (कोविड केंअर सेंटर, डेडीकेटेड कोविड हेल्थ सेंटर, डेडीकेटेड कोविड हॉस्पिटल) व इतर आरोग्य सेवेसाठी निश्चित केलेल्या ठिकाणाबाबत याबाबत जनसामान्यांना माहिती होण्यासाठी पुरेशी प्रसिध्दी करण्यात यावी.

- ३) केंद्र शासनाच्या प्रस्तुत मार्गदर्शक सूचनांची तांतोतंत अंमलबजावणी करण्यात काही त्रुटी राहिल्यास अथवा हलगर्जीपणा झाल्यास त्याला संबंधित जिल्हाधिकारी व महानगरपालिका आयुक्त यांना व्यक्तीशः जबाबदार धरून त्यांच्यावर आवश्यकतेनुसार शिस्तभंगात्मक कारवाई करण्यात येईल याची नोंद घ्यावी.

महाराष्ट्राचे राज्यपाल यांच्या आदेशानुसार व नावाने.



(डॉ. प्रदीप व्यास)

प्रधान सचिव, सार्वजनिक आरोग्य विभाग

- १) मा. राज्यपाल यांचे प्रधान सचिव
- २) मा. मुख्यमंत्री यांचे प्रधान सचिव
- ३) मा. उपमुख्यमंत्री यांचे प्रधान सचिव
- ४) मा. मंत्री (आरोग्य), मंत्रालय, मुंबई
- ५) मा. राज्यमंत्री (आरोग्य) मंत्रालय, मुंबई
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- १०) आयुक्त, महानगरपालिका (सर्व)
- ११) जिल्हाधिकारी (सर्व)
- १२) मा. मुख्य सचिव यांचे उप सचिव
- १३) संचालक, आरोग्य सेवा, आरोग्य सेवा संचालनालय, मुंबई / पुणे
- १४) सह संचालक, आरोग्य सेवा (सर्व)
- १५) जिल्हा शल्यचिकित्सक (सर्व)
- १६) प्रधान सचिव, सार्वजनिक आरोग्य विभाग यांचे स्विय सहायक
- १७) निवड नस्ती-आरोग्य ५

Guidance document on appropriate management of suspect/confirmed cases of COVID-19

1. Introduction: Since its first detection in China, Coronavirus Disease 2019 (COVID-19) has now spread to over 210 countries/territories, with reports of local transmission happening across the world. As per WHO (as of 7th April, 2020), there has been a total of 12,14,466 confirmed cases and 67,767 deaths due to COVID-19 worldwide.

In India, as on 7th April, 2020, 4421 confirmed cases and 114 deaths reported from 31 States/UTs.

2. Purpose of this document

A series of measures have been taken by both the Central and State Governments to break the chain of transmission. One among these is to isolate all suspect and confirmed cases of COVID-19. However, as the number of cases increases, it would be important to appropriately prepare the health systems and use the existing resources judiciously. Available data in India suggests that nearly 70% of cases affected with COVID-19 either exhibit mild or very mild symptoms. Such cases may not require admission to COVID-19 blocks/ dedicated COVID-19 hospitals.

It is important to put in place mechanisms for triaging and decisions making for identification of the appropriate COVID dedicated facility for providing care to COVID-19 patients. The purpose of this document is to put in place such SOPs to ensure optimal utilization of available resources and thereby providing appropriate care to all the COVID-19 patients. This will ensure that available hospital beds capacity is used only for moderate to severe cases of COVID-19. The SOPs specified hereafter also specify the different types of facilities to be set up for various categories of Covid-19 cases.

Guiding principles

All the selected facilities must be dedicated for COVID management. Three types of COVID dedicated facilities are proposed in this document. All 3 types of COVID Dedicated facilities will have separate ear marked areas for suspect and confirmed cases. Suspect and confirmed cases should not be allowed to mix under any circumstances.

All suspect cases (irrespective of severity of their disease) will be tested for COVID-19. Further management of these cases will depend on their (i) clinical status and (ii) result of COVID-19 testing.

All three types of facilities will be linked to the Surveillance team (IDSP)

All these facilities will follow strict infection prevention and control practices

3. Types of COVID Dedicated Facilities: There are three types of COVID Dedicated Facilities –

(1) COVID Care Center (CCC):

- 1.1.** The COVID Care Centers shall offer care only for cases that have been clinically assigned as **mild or very mild cases or COVID suspect cases.**
- 1.2. The COVID Care Centers are makeshift facilities. These may be set up in hostels, hotels, schools, stadiums, lodges etc., both public and private. If need be, existing quarantine facilities could also be converted into COVID Care Centers. Functional hospitals like CHCs, etc, which may be handling regular, non-COVID cases should be designated as COVID Care Centers as a last resort. This is important as essential non COVID Medical services like those for pregnant women, newborns etc, are to be maintained.
- 1.3. Wherever a COVID Care Center is designated for admitting both the confirmed and the suspected cases, these facilities **must have separate areas for suspected and confirmed cases with preferably separate entry and exit. Suspect and confirmed cases must not be allowed to mix under any circumstances.**
- 1.4. As far as possible, wherever suspect cases are admitted in the COVID Care Center, preferably individual rooms should be assigned for such cases.
- 1.5. Every Dedicated COVID Care Centre must necessarily be mapped to one or more Dedicated COVID Health Centres and at least one Dedicated COVID Hospital for referral purpose (details

given below).

- 1.6. Every Dedicated COVID Care Centre must also have a dedicated Basic Life Support Ambulance (BLSA) equipped with sufficient oxygen support on 24x7 basis, for ensuring safe transport of a case to Dedicated higher facilities if the symptoms progress from mild to moderate or severe.
- 1.7. The human resource to man these Care Centre facilities may also be drawn from AYUSH doctors. Training protocols developed by AIIMS is uploaded on MoHFW website. Ministry of AYUSH has also carried out training sessions. The State AYUSH Secretary/ Director should be involved in this deployment. State wise details of trained AYUSH doctors has been shared with the States. Their work can be guided by an Allopathic doctor.

(2) Dedicated COVID Health Centre (DCHC):

- 2.1. The Dedicated COVID Health Centre are hospitals that shall offer care for all cases that have been **clinically assigned as moderate**.
- 2.2. These should either be a full hospital or a separate block in a hospital with preferably separate entry\exit/zoning.
- 2.3. Private hospitals may also be designated as COVID Dedicated Health Centres.
- 2.4. Wherever a Dedicated COVID Health Center is designated for admitting both the confirmed and the suspect cases with moderate symptoms, these hospitals **must have separate areas for suspect and confirmed cases. Suspect and confirmed cases must not be allowed to mix under any circumstances**.
- 2.5. These hospitals would have beds with assured Oxygen support.
- 2.6. Every Dedicated COVID Health Centre must necessarily be mapped to one or more Dedicated COVID Hospitals.
- 2.7. Every DCHC must also have a dedicated Basic Life Support Ambulance (BLSA) equipped with sufficient oxygen support for ensuring safe transport of a case to a Dedicated COVID Hospital if the symptoms progress from moderate to severe.

(3) Dedicated COVID Hospital (DCH):

- 3.1. The Dedicated COVID Hospitals are hospitals that shall offer comprehensive care primarily for those who have been **clinically assigned as severe**.
- 3.2. The Dedicated COVID Hospitals should either be a full hospital or a separate block in a hospital with preferably separate entry\exit.

- 3.3. Private hospitals may also be designated as COVID Dedicated Hospitals.
- 3.4. These hospitals would have fully equipped ICUs, Ventilators and beds with assured Oxygen support.
- 3.5. These hospitals **will have separate areas for suspect and confirmed cases. Suspect and confirmed cases should not be allowed to mix under any circumstances.**
- 3.6. The Dedicated COVID Hospitals would also be referral centers for the Dedicated COVID Health Centers and the COVID Care Centers.

All these facilities will follow strict infection prevention and control practices.

4. Management of COVID cases

4.1. Assessment of patients:

In addition to patients arriving directly through helpline/ referral to above categories of COVID dedicated facilities, in field settings during containment operations, the supervisory medical officer to assess for severity of the case detected and refer to appropriate facility.

States\UTs may identify hospitals with dedicated and separate space and set up Fever Clinics in such hospitals. The Fever Clinics may also be set up in CHCs, in rural areas subject to availability of sufficient space to minimize the risk of cross infections. In urban areas, the civil\general hospitals, Urban CHCs and Municipal Hospitals may also be designated as Fever Clinics. These could be set up preferably near the main entrance for triage and referral to appropriate COVID Dedicated Facility. Wherever space allows, a temporary make shift arrangement outside the facility may be arranged for this triaging.

The medical officer at the fever clinics could identify suspect cases and refer to COVID Care Centre, Dedicated COVID Health Centre or Dedicated COVID Hospital, depending on the clinical severity.

4.2 Categorization of patients

Patients may be categorized into three groups and managed in the respective COVID hospitals – Dedicated COVID Care Centre, dedicated COVID Health Centre and dedicated COVID

Hospitals.

Group 1: Suspect and confirmed cases clinically assigned as mild and very mild

Group 2: Suspect and confirmed cases clinically assigned as moderate

Group 3: Suspect and confirmed cases clinically assigned as severe

Group 1: Suspect and confirmed cases clinically assigned as mild and very mild (COVID Care Centres)

- **Clinical criteria:** Cases presenting with fever and/or upper respiratory tract illness (Influenza Like Illness, ILI).
- These patients will be accommodated in COVID Care Centers.
- The patients would be tested for COVID-19 and till such time their results are available they will remain in the “suspect cases” section of the COVID Care Center preferably in an individual room.
- Those who test positive, will be moved into the “confirmed cases” section of the COVID Care Center.
- If test results are negative, patient will be given symptomatic treatment and be discharged with advice to follow prescribed medications and preventive health measures as per prescribed protocols.
- If any patient admitted to the COVID Care Center qualifies the clinical criteria for moderate or severe case, such patient will be shifted to a Dedicated COVID Health Centre or a Dedicated COVID Hospital.
- Apart from medical care the other essential services like food, sanitation, counseling etc. at the COVID Care Centers will be provided by local administration. Guidelines for quarantine facilities (available on MoHFW website) may be used for this purpose.

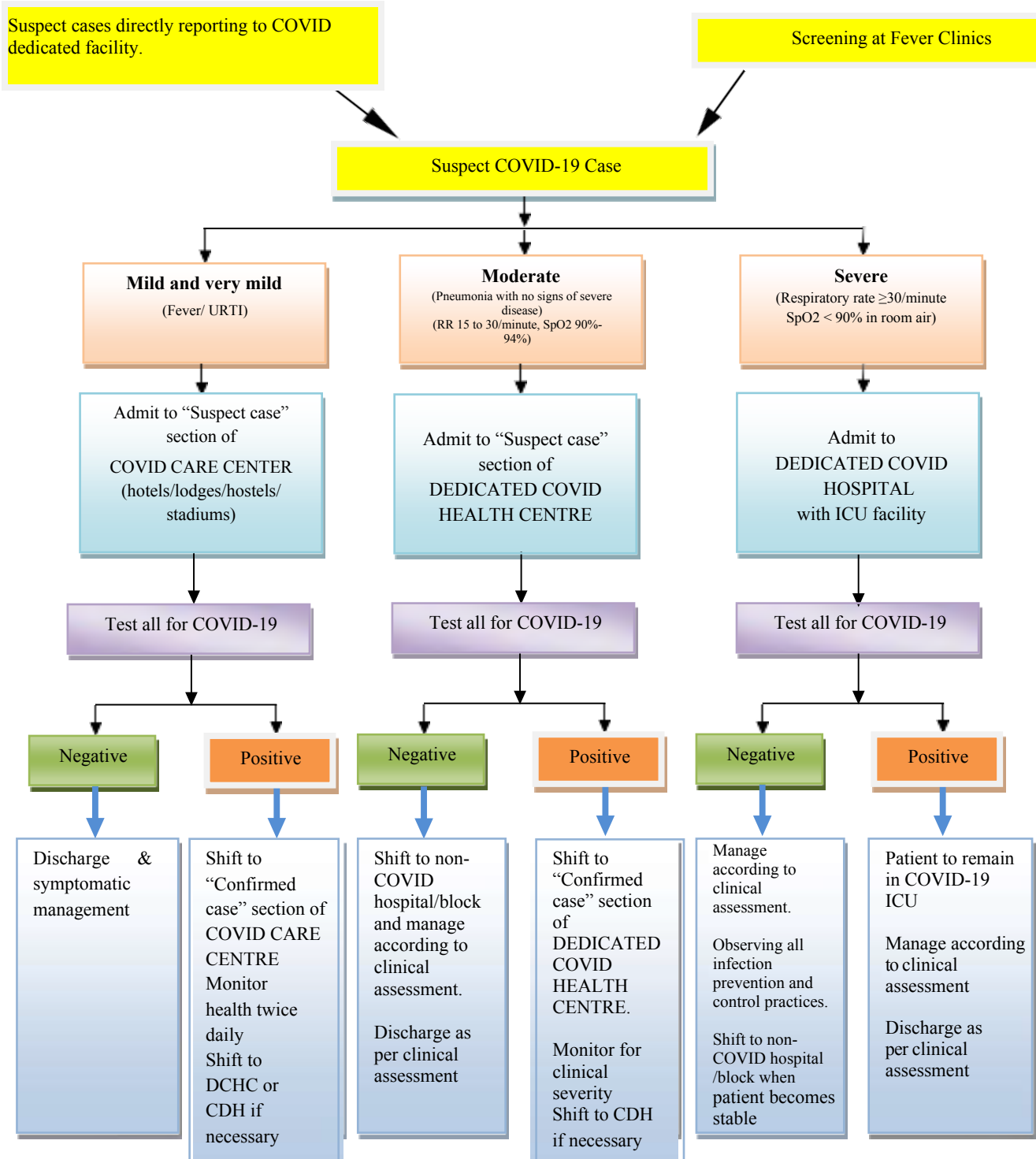
Group 2: Suspect and confirmed cases clinically assigned as moderate (Dedicated COVID Health Centres)

- **Clinical criteria:** Pneumonia with no signs of severe disease (Respiratory Rate 15 to 30/minute, SpO₂ 90%-94%).
- Such cases will not be referred to COVID Care Centers but instead will be admitted to Dedicated COVID Health centres.
- It will be manned by allopathic doctors and cases will be monitored on above mentioned clinical parameters for assessing severity as per treatment protocol (available on MoHFW website).
- They will be kept in “suspect cases” section of Dedicated COVID Health Centres, till such time as their results are not available preferably in an individual room.
- Those testing positive shall be shifted to “confirmed cases” section of Dedicated COVID Health Centre.
- Any patient, for whom the test results are negative, will be shifted to a non-COVID hospital and will be managed according to clinical assessment. Discharge as per clinical assessment.
- If any patient admitted to the Dedicated COVID Health Center qualifies the clinical criteria for severe case, such patient will be shifted to a Dedicated COVID Hospital.

Group 3: Suspect and confirmed cases clinically assigned as severe (Dedicated COVID Hospital)

- **Clinical criteria:** Severe Pneumonia (with respiratory rate ≥ 30 /minute and/or SpO₂ < 90% in room air) or ARDS or Septic shock
- Such cases will be directly admitted to a Dedicated COVID Hospital’s ICU till such time as test results are obtained.
- If test results are positive, such patient will remain in COVID-19 ICU and receive treatment as per standard treatment protocol. Patients testing negative will be managed with adequate infection prevention and control practices.

Algorithm for isolation of suspect/confirmed cases of COVID-19



महाराष्ट्र राज्यात “Mission begin again” या अंतर्गत M.M.R. कार्यक्षेत्रातील बृहन्मुंबई महानगरपालिकेसह सर्व महानगरपालिका, तसेच पुणे, सोलापूर, औरंगाबाद, मालेगाव, नाशिक, धुळे, जळगाव, अकोला, अमरावती आणि नागपूर या महानगरपालिका कार्यक्षेत्रामध्ये राज्य शासकीय कार्यालयातील अधिकारी/ कर्मचारी यांच्या उपस्थितीबाबत.

महाराष्ट्र शासन

सामान्य प्रशासन विभाग

शासन निर्णय क्रमांक : समय २०२०/प्र.क्र.३५/१८(र.वका.)

मादाम कामा रोड, हुतात्मा राजगुरु चौक,

मंत्रालय (विस्तार), मुंबई ४०००३२

दिनांक : ५ जून, २०२०

वाचा:- :

१. शासन निर्णय, सामान्य प्रशासन विभाग, क्रमांक : समय-२०२० / प्र. क्र. ३५ / १८(र.वका.), दिनांक ४ मे, २०२०,
२. शासन आदेश, आपत्ती व्यवस्थापन व मदत व पुनर्वसन, क्रमांक : डीएमयू २०२०/सीआर ९२/डीआयएसएम-१, दिनांक ३१ मे, २०२०,
३. शासन परिपत्रक, सामान्य प्रशासन विभाग, क्रमांक : संकीर्ण १०२०२० / प्र. क्र. १ / सचिव (व्यय), दिनांक ५ जून, २०२०.

शासन निर्णय:-

कोरोना विषाणूंचा (COVID-१९) प्रसार राज्य शासकीय कार्यालयांमध्ये होऊ नये, तसेच शासकीय कार्यालयातील अधिकारी/कर्मचारी यांना त्यांचा संसर्ग होऊ नये म्हणून विविध प्रतिबंधात्मक उपाययोजना राबविण्याच्या दृष्टीने या विभागाच्या संदर्भ क्र. १ येथील शासन निर्णयान्वये सूचना निर्गमित करण्यात आलेल्या आहेत.

२. उक्त संदर्भ क्र. १ येथील दि.४.५.२०२० रोजीच्या शासन निर्णयातील परिच्छेद क्र. २ (अ) येथील तरतूदीअन्वये मुंबई महानगर प्रादेशिक विकास क्षेत्र (M.M.R.) तसेच पुणे महानगर पालिका (P.M.C.), मालेगाव महानगर पालिका तसेच पिंपरी-चिंचवड महानगर पालिका (P.C.M.C.) यांच्या कार्यक्षेत्रातील शासकीय कार्यालयांतील एकूण उपस्थिती ५ टक्क्यांपर्यंत ठेवण्यात आलेली आहे.

आता, आपत्ती व्यवस्थापन, मदत व पुनर्वसन विभाग, मंत्रालय यांच्या उक्त संदर्भ क्र. २ येथील दि. ३१ मे, २०२० च्या आदेशान्वये राज्यातील लॉकडाऊनचा कालावधी दि.३० जून, २०२० पर्यंत वाढविण्यात आला असून राज्यात “Mission begin again” या अंतर्गत फेज I, II, III अन्वये यापूर्वी घालण्यात आलेल्या विविध निर्बंधामध्ये सवलती देण्यात आल्या आहेत. त्यानुसार या आदेशामधील परिच्छेद क्र.६(iv) येथे नमूद केलेल्या मार्गदर्शक सूचनेनुसार आदेशाच्या Annexure(II) येथील मुद्दा क्र.(viii) मधील तरतूदीत केलेल्या वाढीच्या अनुषंगाने पुढीलप्रमाणे सुधारित आदेश देण्यात येत आहेत:-

(अ) मुंबई महानगर प्रादेशिक विकास क्षेत्र (M.M.R.) या कार्यक्षेत्रातील बृहन्मुंबई महानगरपालिकेसह सर्व महानगरपालिका तसेच पुणे, सोलापूर, औरंगाबाद, मालेगाव, नाशिक, धुळे, जळगाव, अकोला, अमरावती आणि नागपूर महानगरपालिका, या कार्यक्षेत्रातील सर्व राज्य शासकीय कार्यालयामधील उपस्थिती (उक्त दि.३१.५.२०२० च्या आदेशातील परिच्छेद क्र. ६(iv) येथे नमूद केलेल्या अत्यावश्यक सेवा वगळून), दि. ३ जून, २०२० पासून १५ टक्के किंवा कमीत कमी १५ कर्मचारी यापैकी जे जास्त असेल इतकी ठेवण्यात यावी.

ब) याअनुषंगाने रोटेशन पध्दतीने कार्यालयीन उपस्थिती निश्चित करण्यासाठी प्रत्येक मंत्रालयीन सचिव/संबंधित कार्यालयप्रमुख यांनी आवश्यक ती उपाययोजना करावी. त्याचप्रमाणे वित्त विभागाच्या संदर्भ क्रमांक ३ येथील दिनांक ५ जून, २०२० च्या परिपत्रकातील सूचनांचेसुद्धा काटेकोरपणे पालन करण्यात यावे.

क) उर्वरित संपूर्ण राज्यातील शासकीय कार्यालयातील उपस्थिती ही आपत्ती व्यवस्थापन, मदत व पुनर्वसन विभाग, मंत्रालय यांच्या उक्त संदर्भ क्र. २ येथील दि. ३१ मे, २०२० रोजीच्या आदेशाप्रमाणे राहिल.

३. त्याचप्रमाणे सर्व राज्य शासकीय अधिकारी व कर्मचारी (बाह्य यंत्रणेद्वारे नियुक्त अधिकारी व कर्मचारी यांचेसह) यांनी शासकीय कार्यालयामध्ये कोरोना विषाणूंचा प्रसार रोखण्याच्या दृष्टीने या विभागाच्या उक्त संदर्भ क्र. १ येथील दि. ४.५.२०२० व आपत्ती व्यवस्थापन, मदत व पुनर्वसन विभाग यांच्या उक्त संदर्भ क्र. २ येथील दि.३१ मे, २०२० रोजीच्या आदेशातील Annexure I येथे नमूद “कोवीड-१९ च्या व्यवस्थापनाबाबत राष्ट्रीय

मार्गदर्शक सूचना” (National directives for Covid-१९ Management) या मथळ्याखाली नमूद सर्व सूचना तसेच सार्वजनिक आरोग्य विभागाने वेळोवेळी प्रसिध्द केलेल्या आदेशातील सर्व मार्गदर्शक सूचनांचे काटेकोरपणे पालन करावे.

४. उपरोक्त सूचना पुढील आदेशापर्यन्त लागू राहतील.

५. सदर शासन निर्णय महाराष्ट्र शासनाच्या www.maharashtra.gov.in या संकेतस्थळावर उपलब्ध करण्यात आला असून त्याचा संगणक संकेतांक क्र.२०२००६०५१४०३२६१२०७ असा आहे. हे आदेश डिजीटल स्वाक्षरीने साक्षांकित करुन काढण्यात येत आहेत.

महाराष्ट्राचे राज्यपाल यांच्या आदेशानुसार व नांवाने,

**Anshu
Sinha**

Digitally signed by Anshu Sinha
DN: c=IN, o=Government Of Maharashtra,
ou=General Administration Department,
postalCode=400032, st=Maharashtra,
2.5.4.20=3a7504068b244e7eb0277456
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Date: 2020.06.05 15:17:13 +05'30'

(अन्शु सिन्हा)

सचिव (प्र.सु.व.र.व.का)

प्रत :

१. मा.राज्यपाल यांचे सचिव (५ प्रती),
२. मा.सभापती, महाराष्ट्र विधानपरिषद, महाराष्ट्र विधानमंडळ सचिवालय, मुंबई
३. मा.अध्यक्ष, महाराष्ट्र विधानसभा, महाराष्ट्र विधानमंडळ सचिवालय, मुंबई
४. मा.विरोधी पक्षनेता, विधानपरिषद/विधानसभा, महाराष्ट्र विधानमंडळ सचिवालय, मुंबई.
५. सर्व सन्माननीय विधानसभा, विधानपरिषद व संसद सदस्य,
६. मा. मुख्यमंत्र्यांचे प्रधान सचिव(५ प्रती), मंत्रालय, मुंबई ४०००३२.
७. मा.उपमुख्यमंत्र्यांचे सचिव, मंत्रालय, मुंबई ४०००३२.
८. सर्व मा.मंत्री / मा. राज्यमंत्री यांचे खाजगी सचिव, मंत्रालय, मुंबई ४०००३२.
९. मा.मुख्य सचिव यांचे वरिष्ठ स्वीय सहायक, मंत्रालय, मुंबई ४०००३२.
१०. मा.महाअधिवक्ता, महाराष्ट्र राज्य,
११. सर्व अपर मुख्य सचिव / प्रधान सचिव / सचिव, मंत्रालय, मुंबई ४०००३२.
१२. प्रबंधक, उच्च न्यायालय, अपील शाखा, मुंबई
१३. प्रबंधक, उच्च न्यायालय, मूल शाखा, मुंबई
१४. प्रबंधक, लोकायुक्त व उपलोकायुक्त यांचे कार्यालय,

१५. सचिव, राज्य निवडणूक आयोग, मुंबई,
१६. सचिव, महाराष्ट्र लोकसेवा आयोग, मुंबई,
१७. प्रधान सचिव, विधानमंडळ सचिवालय, विधान भवन, मुंबई,
१८. मुख्य माहिती आयुक्त, राज्य माहिती आयोग, मुंबई,
१९. राज्य मुख्य सेवा हक्क आयुक्त, राज्य सेवा हक्क आयोग, मुंबई,
२०. सर्व विभागीय आयुक्त,
२१. आयुक्त, सर्व महानगर पालिका,
२२. व्यवस्थापकीय संचालक, BEST महामंडळ, मुंबई
२३. व्यवस्थापकीय संचालक, महाराष्ट्र राज्य परिवहन महामंडळ,(MSRTC), मुंबई
२४. सर्व जिल्हाधिकारी,
२५. सर्व जिल्हा परिषदांचे मुख्य कार्यकारी अधिकारी,
२६. सर्व मंत्रालयीन विभागांच्या अधिपत्याखालील सर्व विभागप्रमुख / प्रादेशिक प्रमुख / कार्यालय प्रमुख,
२७. महासंचालक, माहिती व जनसंपर्क महासंचालनालय, मुंबई (५ प्रती),
२८. भारतीय जनता पार्टी, महाराष्ट्र प्रदेश, सी.डी.ओ.बॅरेक नं.१, योगक्षेम समोर, वसंतराव भागवत चौक, नरिमन पॉईंट, मुंबई ४०००२०.
२९. इंडियन नॅशनल काँग्रेस, महाराष्ट्र प्रदेश काँग्रेस(आय) समिती, टिळक भवन, काकासाहेब गाडगीळ मार्ग, दादर, मुंबई-४०००२५.
३०. नॅशनलीस्ट काँग्रेस पार्टी, ठाकरसी हाऊस, जे.एन.हेरेडीया मार्ग, बेलार्ड इस्टेट, मुंबई ४०००३८.
३१. शिवसेना, शिवसेना भवन, गडकरी चौक, दादर, मुंबई-४०००२८.
३२. बहुजन समाज पार्टी, प्रदेश सचिव, महाराष्ट्र राज्य, बी.एस.जी.भवन, प्लॉट नं. ८३-अ, कलेक्टर कॉलनी, चेंबूर, मुंबई-४०००१४.
३३. भारतीय कम्युनिस्ट पार्टी, महाराष्ट्र कमिटी, ३१४, राजभवन, एस.व्ही.पटेल रोड, मुंबई ४००००४.
३४. भारतीय कम्युनिस्ट(मार्क्सवादी) पार्टी, महाराष्ट्र कमिटी, जनशक्ती हॉल, ग्लोब मिल पॅलेस, वरळी, मुंबई ४०००१३.
३५. महाराष्ट्र नवनिर्माण सेवा, राजगड, मातोश्री टॉवर, शिवाजी पार्क, दादर, मुंबई ४०००२८.
३६. सामान्य प्रशासन विभागातील सर्व कार्यासने, मंत्रालय, मुंबई ४०००३२
३७. निवड नस्ती (का.१८), सामान्य प्रशासन विभाग, मंत्रालय, मुंबई ४०००३२.

मर्यादित उपस्थितीच्या काळात शासकीय
कार्यालयातील कर्मचाऱ्यांच्या
उपस्थिती सुनिश्चित करणे व वेतन
आहरित करण्याबाबत सूचना

महाराष्ट्र शासन
वित्त विभाग,
मंत्रालय, मुंबई-४०००३२
शासन परिपत्रक क्र. संकीर्ण १०२०२०/ प्र. क्र. ०१ / सचिव (व्यय)
दिनांक : ५ जून, २०२०
परिपत्रक-

कोव्हिड-१९ चा प्रादुर्भाव रोखण्यासाठी जारी केलेल्या लॉकडाऊन काळात राज्यशासकीय कर्मचाऱ्यांची कार्यालयीन उपस्थिती मर्यादित ठेवण्याबाबत वेळोवेळी शासनाकडून सूचना निर्गमित करण्यात आल्या आहेत. त्यानुसार मर्यादित संख्येत अधिकारी व कर्मचारी यांच्या उपस्थितीत मंत्रालयीन विभाग व क्षेत्रीय कार्यालयातील कामकाज सुरु आहे. तथापि, असे निदर्शनास आले आहे की, विभागातील काही अधिकारी/कर्मचारी लॉकडाऊन कालावधी दरम्यान पूर्व परवानगी शिवाय गैरहजर आहेत तसेच मुख्यालय सोडून अन्य गावी गेले आहेत त्यामुळे कार्यालयात उपस्थित राहणाऱ्या कर्मचाऱ्यांवर अतिरिक्त कामाचा अनाटायी ताण येत आहे.


शासकीय कर्मचाऱ्यांनी शासकीय कामाप्रती सर्वतोपरी निष्ठा ठेवणे अनिवार्य आहे तसेच कार्यालयातील कामाचे कर्मचारी निहाय समन्यायी वाटप होणेही आवश्यक आहे. त्या अनुषंगाने खालीलप्रमाणे सूचना देण्यात येत आहेत.

१. प्रत्येक विभागानी आपले अधिनस्त सर्व कर्मचारी/ अधिकारी बाबत रोस्टर तयार करावे ज्यामध्ये प्रत्येक कर्मचारी / अधिकारी आठवड्यात किमान एक दिवस कार्यालयात हजर राहतील. पूर्वमंजूर अर्जित व तत्सम तसेच वैद्यकीय कारणास्तव रजेवर असलेल्या कर्मचाऱ्यांव्यतिरिक्त सर्व कर्मचाऱ्यांपैकी प्रत्येक कर्मचाऱ्याला आठवड्यातून किमान एक दिवस कार्यालयात हजर राहणे अनिवार्य राहिल. सदर कर्मचाऱ्याने उपस्थित रहावयाच्या दिनांकाबाबत विभागप्रमुख, आस्थापनाशाखा यांनी आदेश काढावेत.
२. सर्व अधिकारी / कर्मचारी यांना त्यांना नेमून दिलेल्या उपस्थिती च्या दिनांकास कार्यालयात उपस्थित राहणे अनिवार्य आहे. लॉकडाऊन च्या कालावधीत जे अधिकारी / कर्मचारी यांनी विनापरवानगी

मुख्यालय सोडले आहे त्यांच्या विरुद्ध म.ना.से.(वर्तणूक)नियम १९७९ अंतर्गत शिस्तभंगाची कारवाई करण्याबाबत सर्व प्रशासकीय विभाग यांनी कार्यवाही करावी.

३. निर्देशित दिनांकांना सदर कर्मचारी अनुपस्थित राहिल्यास सदर कर्मचार्याची त्या आठवड्याची अनुपस्थिती देय व अनुज्ञेय अर्जित वा यथास्थिती विनावेतन रजा म्हणून नियमित करण्यात यावी.
४. आठवड्यात एकापेक्षा अधिक दिवशी कर्मचार्यास हजर राहण्याबाबत आदेशित करण्यात आले असेल तर त्यापैकी जे दिवस सदर कर्मचारी उपस्थित असेल ते वगळून त्या आठवड्यातील अन्य दिवसांची अनुपस्थिती देय व अनुज्ञेय अर्जित वा यथास्थिती विनावेतन रजा म्हणून नियमित करण्यात यावी. .
५. आहरण व संवितरण अधिकारी यांनी कर्मचार्यांची उपस्थिती विचारात घेऊनच वेतन देयके आहरित करावीत व देयकासोबत "शासन परिपत्रक क्र. संकीर्ण १०२०२० / प्र.क्र. ०१ / सचिव (व्यय), दिनांक ५ जून, २०२० मधील सूचना विचारात घेऊन केवळ उपस्थिती कालावधीचेच वेतन आहरित करण्यात आले आहे याची मी खात्री केली आहे" असे प्रमाणपत्र जोडावे त्याआधारे कोषागारांनी वेतन देयके पारीत करावीत.
६. सदर आदेश दि. ०८ जून, २०२० पासून आंमलात येतील. तसेच ते सर्व शासकीय कार्यालये व शासनाच्या अधिपत्याखालील महामंडळे, आस्थापना यांना लागू राहतील.

महाराष्ट्राचे राज्यपाल यांचे आदेशानुसार व नावाने.


(मनोज सौनिक) 5/6/2020
अपर मुख्य सचिव (वित्त)

प्रत माहितीसाठी

मा. मुख्य सचिव, महाराष्ट्र शासन, मंत्रालय, मुंबई-३२

प्रत माहिती व आवश्यक त्या कार्यवाहीसाठी,

अ.मु.स./प्र.स./सचिव, सर्व मंत्रालयीन विभाग,

त्यांना विनंती करण्यात येते की, सदर सूचना त्यांच्या अधिपत्याखालील क्षेत्रीय अधिकाऱ्यांच्या निदर्शनास आणून त्यांचे काटेकोर पालन करण्याबाबत सूचना दयाव्यात.

संचालक, लेखा व कोषागारे संचालनालय, मुंबई यांनी सदर सूचना सर्व कोषागारे तथा अधिदान व लेखाधिकारी यांच्या निदर्शनास आणाव्यात.

महाराष्ट्र राज्यात कोरोना विषाणू प्रसारावरील प्रतिबंधात्मक उपाय म्हणून लागू करण्यात आलेल्या लॉक डाऊनच्या अनुषंगाने राज्यात शासकीय कामकाजासाठी ईमेल तसेच व्हॉट्सअॅपचा वापर ग्राह्य धरण्याबाबत.

महाराष्ट्र शासन

सामान्य प्रशासन विभाग

शासन परिपत्रक क्रमांक : समय २०२०/प्र.क्र.३५/१८(र.व का.)

मादाम कामा रोड, हुतात्मा राजगुरु चौक,

मंत्रालय (विस्तार), मुंबई ४०००३२

दिनांक : ५ जून, २०२०

वाचा:- :

१. शासन निर्णय, सामान्य प्रशासन विभाग, क्रमांक : समय-२०२० / प्र. क्र. ३५ / १८ (र.व का.), दिनांक १८ एप्रिल, २०२०,
२. शासन निर्णय, सामान्य प्रशासन विभाग, क्रमांक : समय-२०२० / प्र. क्र. ३५ / १८ (र.व का.), दिनांक २२ एप्रिल, २०२०,
३. केंद्रशासनाच्या गृह मंत्रालयाची अधिसूचना क्र. ४०-३/२०२०-डीएम-आय-(ए) दि. १ मे, २०२०,
४. शासन अधिसूचना, आपत्ती व्यवस्थापन व मदत व पुनर्वसन, क्रमांक : डीएमयू २०२० / सी आर ९२ / डीआयएसएम-१, दिनांक २ मे, २०२०.
५. शासन निर्णय, सामान्य प्रशासन विभाग, क्रमांक : समय-२०२० / प्र. क्र. ३५ / १८ (र.व का.), दिनांक ४ मे, २०२०,

शासन परिपत्रक :-

कोरोना विषाणूंचा (COVID-१९) प्रसार राज्य शासकीय कार्यालयांमध्ये होऊ नये, तसेच राज्यातील अधिकारी / कर्मचारी यांना त्यांचा संसर्ग होऊ नये म्हणून विविध प्रतिबंधात्मक उपाय योजना राबविण्याच्या दृष्टीने या विभागाच्या संदर्भ क्रमांक १, २ व ५ येथील शासन निर्णयान्वये विविध सूचना निर्गमित करण्यात आलेल्या आहेत.

२. लॉकडाऊनच्या कालावधीत राज्य शासकीय कार्यालयातील कर्मचाऱ्यांची उपस्थिती नियंत्रित करण्यात येत आहे. तसेच भविष्यातही अशा प्रकारची परिस्थिती लक्षात घेता शासकीय अधिकारी / कर्मचारी यांनी त्यांचे घरातच राहूनही कार्यालयीन आवश्यकतेनुसार व तातडीनुसार शासकीय कामकाजाचा निपटारा करणेसाठी उपाययोजना करणे आवश्यक आहे. यासाठी शासकीय ईमेल (जसे एनआयसी मेल, इ.), त्यांच्या नेहमीच्या वापरातील अन्य ईमेल तसेच व्हॉट्सअॅपचा वापर शासकीय कामकाजासाठी तसेच संबंधितांना सूचना / आदेश देण्यासाठी करणे ग्राह्य धरण्यात येईल.

३. सबब सर्व राज्य शासकीय अधिकारी / कर्मचारी यांना खालीलप्रमाणे सूचना देण्यात येत आहेत :-

- अ) प्रत्येक अधिकारी / कर्मचारी यांनी, त्यांचे शासकीय ई-मेल आयडी / त्यांच्या नेहमीच्या वापरातील अन्य ई-मेल आयडी तसेच एस.एम.एस / व्हॉट्सअॅपची सुविधा असलेला मोबाईल क्रमांक, त्यांचे कार्यालय प्रमुखांस उपलब्ध करून द्यावा.
- ब) शासकीय कामकाजासाठी शासकीय ई-मेल आयडी / त्यांच्या नेहमीच्या वापरातील अन्य ईमेल आयडी तसेच व्हॉट्सअॅपचा वापर करून त्यांच्या कामाचा जास्तीत जास्त निपटारा करावा.
- क) प्रस्ताव ई-मेलद्वारे फॉरवर्ड केल्यानंतर त्याबाबतची सूचना लगेचच संबंधितांस एस.एम.एस (SMS)/ व्हॉट्सअॅपरून (Whatsapp) देण्याबाबत दक्षता घेण्यात यावी.
- ड) उक्त पद्धतीने वरिष्ठांकडून प्राप्त सूचनेनुसार ईमेलद्वारे अंतिम मान्यतेसाठी सादर केलेला प्रस्ताव (फॉरवर्ड केलेला प्रस्ताव) हा, तो सादर करणारे व अंतिम मान्यता देणारे या दोन्ही स्तरामधील अधिकाऱ्यांनी पाहिला, तपासला व मान्य केला आहे, असे गृहित धरण्यात येईल.

प्रस्ताव तयार करणाऱ्या अधिकारी / कर्मचारी यांनी प्रस्ताव ई-मेलद्वारे अंतिमतः फॉरवर्ड करण्यापूर्वी तो सर्व संबंधित अधिकाऱ्यांच्या निदर्शनास आणून फॉरवर्ड करावा व त्याची प्रत (C.C. मध्ये) सर्व संबंधित अधिकाऱ्यांना चिन्हांकित करावी.

४. तरी सर्व मंत्रालयीन अपर मुख्य सचिव / प्रधान सचिव / सचिव तसेच मंत्रालयाच्या नियंत्रणाखालील सर्व विभाग प्रमुख तसेच कार्यालय प्रमुख यांना विनंती करण्यात येते की, त्यांनी सादर सूचना त्यांचे नियंत्रणाखालील अधिकारी / कर्मचारी यांचे निदर्शनास आणाव्यात.

५. उक्त सूचना पुढील आदेशापर्यंत लागू राहतील.

६. सादर शासन परिपत्रक महाराष्ट्र शासनाच्या www.maharashtra.gov.in या संकेतस्थळावर उपलब्ध करण्यात आला असून त्याचा संगणक संकेतांक क्र. २०२००६०५१४०३१९१९०७ असा आहे. हे आदेश डिजीटल स्वाक्षरीने साक्षांकित करून काढण्यात येत आहेत.

महाराष्ट्राचे राज्यपाल यांच्या आदेशानुसार व नांवाने,

Rajesh Bhaskar
Gaikwad

Digitally signed by Rajesh Bhaskar Gaikwad
DN: c=IN, o=Government of Maharashtra,
ou=General Administration Department,
postalCode=400032, st=Maharashtra,
2.5.4.420=861378a9e0c0f16d9e43370b71fa3ec97
48524d0e443758a6d502119a,
serialNumber=266171c96e63633217d12b6d51c
5480e19a7a6d692a8f19e4c392a71, cn=Rajesh
Bhaskar Gaikwad
Date: 2020.06.05 13:20:02 +05'30'

(रा. भा. गायकवाड)
कार्यासन अधिकारी

प्रत :

१. मा.राज्यपाल यांचे सचिव (५ प्रती),

२. मा.सभापती, महाराष्ट्र विधानपरिषद, महाराष्ट्र विधानमंडळ सचिवालय, मुंबई
३. मा.अध्यक्ष, महाराष्ट्र विधानसभा, महाराष्ट्र विधानमंडळ सचिवालय, मुंबई
४. मा.विरोधी पक्षनेता, विधानपरिषद/विधानसभा, महाराष्ट्र विधानमंडळ सचिवालय, मुंबई.
५. सर्व सन्माननीय विधानसभा, विधानपरिषद व संसद सदस्य,
६. मा. मुख्यमंत्र्यांचे प्रधान सचिव(५ प्रती), मंत्रालय, मुंबई ४०००३२.
७. मा.उपमुख्यमंत्र्यांचे सचिव, मंत्रालय, मुंबई ४०००३२.
८. सर्व मा.मंत्री / मा. राज्य मंत्री यांचे खाजगी सचिव, मंत्रालय, मुंबई ४०००३२.
९. मा.मुख्य सचिव यांचे वरिष्ठ स्वीय सहायक, मंत्रालय, मुंबई ४०००३२.
- १०.मा.महाअधिवक्ता, महाराष्ट्र राज्य ,
- ११.सर्व अपर मुख्य सचिव / प्रधान सचिव / सचिव, मंत्रालय, मुंबई ४०००३२.
- १२.प्रबंधक, उच्च न्यायालय, अपील शाखा, मुंबई
- १३.प्रबंधक, उच्च न्यायालय, मूल शाखा, मुंबई
- १४.प्रबंधक, लोकायुक्त व उपलोकायुक्त यांचे कार्यालय,
- १५.सचिव, राज्य निवडणूक आयोग, मुंबई,
- १६.सचिव, महाराष्ट्र लोकसेवा आयोग, मुंबई,
- १७.प्रधान सचिव, विधानमंडळ सचिवालय, विधान भवन, मुंबई,
१८. मुख्य माहिती आयुक्त, राज्य माहिती आयोग, मुंबई,
- १९.राज्य मुख्य सेवा हक्क आयुक्त, राज्य सेवा हक्क आयोग, मुंबई,
- २०.सर्व विभागीय आयुक्त,
- २१.आयुक्त, सर्व महानगर पालिका,
- २२.व्यवस्थापकीय संचालक, BEST महामंडळ, मुंबई
- २३.व्यवस्थापकीय संचालक, महाराष्ट्र राज्य मार्ग परिवहन महामंडळ, (MSRTC), मुंबई
- २४.सर्व जिल्हाधिकारी,
- २५.सर्व जिल्हा परिषदांचे मुख्य कार्यकारी अधिकारी,
- २६.सर्व मंत्रालयीन विभागांच्या अधिपत्याखालील सर्व विभाग प्रमुख / प्रादेशिक प्रमुख / कार्यालय प्रमुख,
- २७.महासंचालक, माहिती व जनसंपर्क महासंचालनालय, मुंबई (५ प्रती),
२८. भारतीय जनता पार्टी, महाराष्ट्र प्रदेश, सी.डी.ओ.बॅरेक नं.१, योगक्षेम समोर, वसंतराव भागवत चौक, नरिमन पॉईंट, मुंबई ४०००२०.
- २९.इंडियन नॅशनल काँग्रेस, महाराष्ट्र प्रदेश काँग्रेस(आय) समिती, टिळक भवन, काकासाहेब गाडगीळ मार्ग, दादर, मुंबई-४०००२५.
- ३०.नॅशनलीस्ट काँग्रेस पार्टी, ठाकरसी हाऊस, जे.एन.हेरेडीया मार्ग, बेलार्ड इस्टेट, मुंबई ४०००३८.

- ३१.शिवसेना, शिवसेना भवन, गडकरी चौक, दादर, मुंबई-४०००२८.
- ३२.बहुजन समाज पार्टी, प्रदेश सचिव, महाराष्ट्र राज्य , बी.एस.जी.भवन,
प्लॉट नं. ८३-अ, कलेक्टर कॉलनी, चेंबूर, मुंबई-४०००१४.
- ३३.भारतीय कम्युनिस्ट पार्टी, महाराष्ट्र कमिटी, ३१४, राजभवन, एस.व्ही.पटेल रोड,
मुंबई ४००००४.
- ३४.भारतीय कम्युनिस्ट(मार्क्सवादी) पार्टी, महाराष्ट्र कमिटी, जनशक्ती हॉल, ग्लोब
मिल पॅलेस, वरळी, मुंबई ४०००१३.
- ३५.महाराष्ट्र नवनिर्माण सेवा, राजगड, मातोश्री टॉवर, शिवाजी पार्क, दादर,
मुंबई ४०००२८.
- ३६.सामान्य प्रशासन विभागातील सर्व कार्यासने, मंत्रालय, मुंबई ४०००३२
- ३७.निवड नस्ती (का.१८), सामान्य प्रशासन विभाग, मंत्रालय, मुंबई४०००३२.

महाराष्ट्र शासन

क्रमांक कोरोना २०२०/प्र.क्र. ५८/आरोग्य ५
सार्वजनिक आरोग्य विभाग
गोकुलदास तेजपाल रुग्णालय आवार
कॉम्प्लेक्स बिल्डिंग, नविन मंत्रालय,
मुंबई-४०० ००९
दिनांक:- ०५ जून २०२०

प्रति,

उपसंचालक आरोग्य सेवा, परिमंडळे(सर्व)
जिल्हा आरोग्य अधिकारी, जिल्हा परिषद.....(सर्व)
जिल्हा शल्य चिकित्सक, सामान्य रुग्णालय.....(सर्व)
वैद्यकीय आरोग्य अधिकारी, महानगरपालिका (सर्व)
कार्यकारी आरोग्य अधिकारी, बृहन्मुंबई महानगरपालिका.

विषय : लक्षण नसलेल्या कोविड -१९ रुग्णांसाठी सुधारित डिस्चार्ज पॉलिसी (Addendum)

संदर्भ : १) केंद्र शासनाकडून प्राप्त ई-मेल दिनांक २ जून २०२०
२) दिनांक ०९/०५/२०२० रोजीचे समविषयांचे परिपत्रक
३) केंद्र शासनाच्या मार्गदर्शक सूचना दिनांक ८/०५/२०२०

उपरोक्त संदर्भीय विषयांवये आपणास सूचित करण्यात येते कि सौम्य, अति सौम्य व लक्षण नसलेल्या रुग्णांकरिताच्या डिस्चार्ज संबंधीच्या मार्गदर्शक सूचना यापूर्वी संदर्भ क्र.२ अन्वये देण्यात आलेल्या होत्या. त्यामध्ये लक्षण नसलेल्या रुग्णांच्या डिस्चार्ज करिता केंद्र शासनाकडे मार्गदर्शन मागविण्यात आले होते. संदर्भ क्र. १ नुसार लक्षण नसलेल्या रुग्णांच्या डिस्चार्ज करिता पुढीलप्रमाणे सूचना देण्यात येत आहे:-

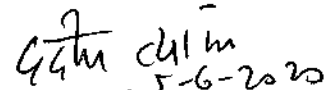
१) लक्षण नसलेले रुग्ण:

जर रुग्णाला आरोग्य संस्थामध्ये दाखल असताना लक्षणे दिसून आली नाही तर दाखल झाल्यापासून १० दिवसानंतर डिस्चार्ज देण्यात यावा. जरी तपासणीसाठी नमुना आरोग्य संस्था मध्ये दाखल होण्याअगोदर घेतला असेल तरी सुद्धा रुग्णाला दाखल झाल्यापासून १० दिवसानंतर डिस्चार्ज देण्यात यावा.

२) सौम्य, मध्यम लक्षण असलेले व गंभीर रुग्ण:

सौम्य, मध्यम लक्षण असलेले व गंभीर असलेल्या रुग्णांकरिता डिस्चार्जच्या मार्गदर्शक सूचना या संदर्भ क्र.३ च्या नुसार असतील.

<https://www.mohfw.gov.in/pdf/ReviseddischargePolicyforCOVID19.pdf>


(डॉ. प्रदीप व्यास)

प्रधान सचिव, महाराष्ट्र शासन

सहपत्र : संदर्भीय परिपत्रक क्र. १, २ व ३

प्रत सविनय सादर:

१) आयुक्त, आरोग्य सेवा तथा अभियान संचालक, आरोग्य भवन, मुंबई
२) संचालक, आरोग्य सेवा, मुंबई/पुणे



Dr. Archana Patil <dhepune1@gmail.com>

Draft letter about discharge policy

Sanket Vasant kulkarni Deputy Director <sanket.kulkarni@gov.in>

2 June 2020 at 19:59

To: dhepune1@gmail.com

Cc: NPO IDSP <idsp-npo@nic.in>

Dear madam,

Greetings!

As discussed in the technical committee within the division, it is hereby informed the following:

1. For asymptomatic cases - the cases may be discharged after 10 days of hospitalisation if no symptoms presents during the period of hospital stay. If the samples have been taken before hospitalisation, then also the person needs to be discharged after 10 days of hospitalisation.
2. For other cases like mild, moderate or severe it will be as per the MoHfw revised discharge policy.

Thanks and Regards, Dr Sanket V Kulkarni Deputy Director, Integrated Disease Surveillance Programme, National Centre for Disease Control, Delhi 110054 Mob: +91-7836026688 (Before printing this message, think about your ecological responsibility. Do you really need to print this email?)
Disclaimer: This message may contain confidential information and is intended only for the individual(s) named. If you are not the named addressee you should not disseminate, distribute or copy this e-mail. Please notify the sender immediately by e-mail if you have received this e-mail by mistake and delete this e-mail from your system. E-mail transmission cannot be guaranteed to be secure or error-free as information could be intercepted, corrupted, lost, destroyed, arrive late or incomplete, or contain viruses. The sender therefore does not accept liability for any errors or omissions in the contents of this message, which arise as a result of e-mail transmission.

[Quoted text hidden]

महाराष्ट्र शासन

अत्यंत तातडीचे

क्रमांक कोरोना २०२०/प्र.क्र. ५८/आरोग्य ५
सार्वजनिक आरोग्य विभाग
गोकुळदास तेजपाल रुग्णालय आवार
कॉम्प्लेक्स बिल्डिंग, नविन मंत्रालय,
मुंबई-४०० ००९
दिनांक- ०९.०५.२०२०

प्रति,

जिल्हाधिकारी(सर्व)
आयुक्त महानगरपालिका(सर्व)
कार्यकारी आरोग्य अधिकारी, बृहन्मुंबई महानगरपालिका.
उपसंचालक आरोग्य सेवा, परिमंडळे(सर्व)
जिल्हा शल्य चिकित्सक, सामान्य रुग्णालय.....(सर्व)
जिल्हा आरोग्य अधिकारी, जिल्हा परिषद.....(सर्व)
वैद्यकिय आरोग्य अधिकारी , महानगरपालिका (सर्व)

विषय:- कोवीड १९ रुग्णांसाठी सुधारीत डिस्चार्ज पॉलिसी

संदर्भ:- केंद्र शासनाच्या मार्गदर्शक सूचना दिनांक ८/५/२०२०

केंद्र शासनाच्या मार्गदर्शक सूचनांनुसार कोवीड १९ रुग्णांसाठी निश्चित केलेल्या त्रिस्तरीय संस्थात्मक रचनेनुसार या रुग्णांसाठी सुधारीत डिस्चार्ज पॉलिसी तयार करण्यात आली आहे. ही पॉलिसी रुग्णांच्या लक्षणांच्या स्थितीवर अवलंबून आहे.

(<https://www.mohfw.gov.in/pdf/finalGuidanceonMangaementofCovidcasesversion२.pdf>)

या सुधारीत धोरणानुसार पुढीलप्रमाणे मार्गदर्शक सूचना निर्गमित करण्यात येत आहेत.

१) सौम्य, अति सौम्य व लक्षणे नसलेले रुग्ण :-

- सौम्य, अति सौम्य व लक्षणे नसलेल्या ज्या रुग्णांना आरोग्य संस्थांमध्ये दाखल करण्यात आले असेल त्यांची दररोज दोन वेळा शरीराच्या तापमानासाठी आणि पल्स ऑक्सीमिटरद्वारे SpO2 तपासणी करण्यात यावी.
- रुग्णाला लक्षणे सुरु झाल्यापासून ७ व्या, ८ व्या व ९ व्या दिवशी ताप नसल्यास १०व्या दिवशी तपासणी करुन डिस्चार्ज देण्यात यावा.
- या रुग्णांना डिस्चार्ज करीत असतांना कोवीड विषाणुसाठी प्रयोगशाळा तपासणीची आवश्यकता नाही.

- डिस्चार्जवेळी रुग्णांना घरी विलगीकरण (Home Isolation) पुढील ७ दिवसासाठी करणे आवश्यक असल्याच्या सूचना देण्यात याव्यात.
- या रुग्णांना डिस्चार्ज झाल्यानंतर त्यांच्या हातावर ७ दिवसांचा स्टॅम्प लावण्यात यावा.
- या रुग्णांमध्ये दाखल असताना डिस्चार्ज करण्यापूर्वी ऑक्सीजनचे प्रमाण ९५ टक्के पेक्षा कमी आढळून आल्यास रुग्णांना Dedicated COVID Health Centre ला संदर्भीत करण्यात यावे.
- या रुग्णांना त्यांच्यामध्ये पुन्हा ताप,खोकला, श्वास घेण्यास त्रास अशी लक्षणे आढळून आल्यास जवळचे कोवीड केअर सेन्टर अथवा राज्याच्या १०४ टोल फ्री क्रमांक हेल्पलाईनवर अथवा नियंत्रण कक्ष ०२०-२६१२७३९४ येथे संपर्क करण्याबाबत कळविण्यात यावे.
- या रुग्णांचा १४ व्या दिवशी आरोग्य कर्मचा-यांनी दूरध्वनीद्वारे पाठपुरावा करावा व लक्षणे नसल्याची खात्री करावी व तशी नोंद करावी.

२) मध्यम लक्षणे असलेले रुग्ण :-

जे रुग्ण Dedicated COVID Health Centre (Oxygen beds)मध्ये दाखल करण्यात आलेले आहेत त्यांचे डिस्चार्जसाठी खालीलप्रमाणे कार्यवाही करावी.

(अ) ज्या रुग्णांना ३ दिवस लक्षणे नाहीत आणि त्यांचे रुम एअरवर ऑक्सीजन सॅचुरेशनचे प्रमाण त्यापुढील चार दिवसांसाठी ९५ टक्के पेक्षा जास्त आहे अशा रुग्णांसाठी खालील मार्गदर्शक सूचना:

- मध्यम लक्षणे असलेल्या रुग्णांची शरिराच्या तपमानासाठी तसेच ऑक्सीजन सॅच्युरेशनसाठी तपासणी करावी.
- ज्या रुग्णांमध्ये ३ दिवसांमध्ये ताप कमी झाला आहे आणि पुढील ४ दिवस त्यांचे रुम एअरवर ऑक्सीजन सॅच्युरेशन प्रमाण ९५ टक्केपेक्षा जास्त असेल त्यांना लक्षणे सुरु झाल्यापासून १० दिवस पूर्ण झाल्यानंतर डिस्चार्ज करण्यात यावे.

डिस्चार्ज करताना पुढील बाबींची खात्री करण्यात यावी:-

- अ) तापासाठीची कोणतीही औषधे न घेता रुग्णाला ताप नसणे
- ब) श्वास घेण्यासाठी त्रास न होणे
- क) ऑक्सीजनचा पुरवठा करण्याची आवश्यकता नसणे

- या रुग्णांना डिस्चार्ज करताना प्रयोगशाळा तपासणीची आवश्यकता राहणार नाही.
- डिस्चार्जवेळी रुग्णांना घरी विलगीकरण (Home Isolation) पुढील ७ दिवसासाठी करणे आवश्यक असल्याच्या सूचना देण्यात याव्यात.
- डिस्चार्जच्या वेळी या रुग्णांना त्यांच्यामध्ये पुन्हा ताप,खोकला, श्वास घेण्यास त्रास अशी लक्षणे आढळून आल्यास कोवीड केअर सेन्टर अथवा राज्याच्या १०४ टोल फ्री क्रमांक हेल्पलाईनवर अथवा नियंत्रण कक्ष ०२० - २६१२७३९४ येथे संपर्क करण्याबाबत कळविण्यात यावे.

ब) ज्या रुग्णांमध्ये ताप ३ दिवसामध्ये कमी झाला नाही आणि ज्यांना ऑक्सीजनचा पुरवठा वरून करण्याची आवश्यकता आहे अशा रुग्णांमध्ये त्यांची लक्षणे नाहीशी झाल्यानंतर आणि वरून ऑक्सीजन न लागता ऑक्सीजनचे प्रमाण ९५ टक्के किंवा त्यापेक्षा जास्त ३ दिवस असेल तर डिस्चार्ज करावे.

३) गंभीर रुग्ण तसेच रोग प्रतिकार शक्ती कमी असलेले रुग्ण (इम्युनो कॉम्प्रमाईज/ एचआयव्ही रुग्ण / ट्रान्सप्लान्ट झालेले रुग्ण / कॅन्सरचे रुग्ण) :-

अशा रुग्णांना डिस्चार्ज करित असतांना मार्गदर्शक सूचना पुढीलप्रमाणे

- रुग्णांमध्ये कोणतीही लक्षणे आढळून न येणे
- RT-PCR पध्दतीने लक्षणे नसलेल्या रुग्णांचा एक नमुना निगेटीव्ह येणे आवश्यक आहे.
- रुग्णाची RT-PCR तपासणी लक्षणे कमी झाल्यानंतर करण्यात यावी.

सर्व रुग्णांना डिस्चार्ज करताना लक्षणे आढळून आल्यापासून डिस्चार्ज करण्यापर्यंतचा कालावधी किमान १० दिवस आहे याची खात्री करण्यात यावी.

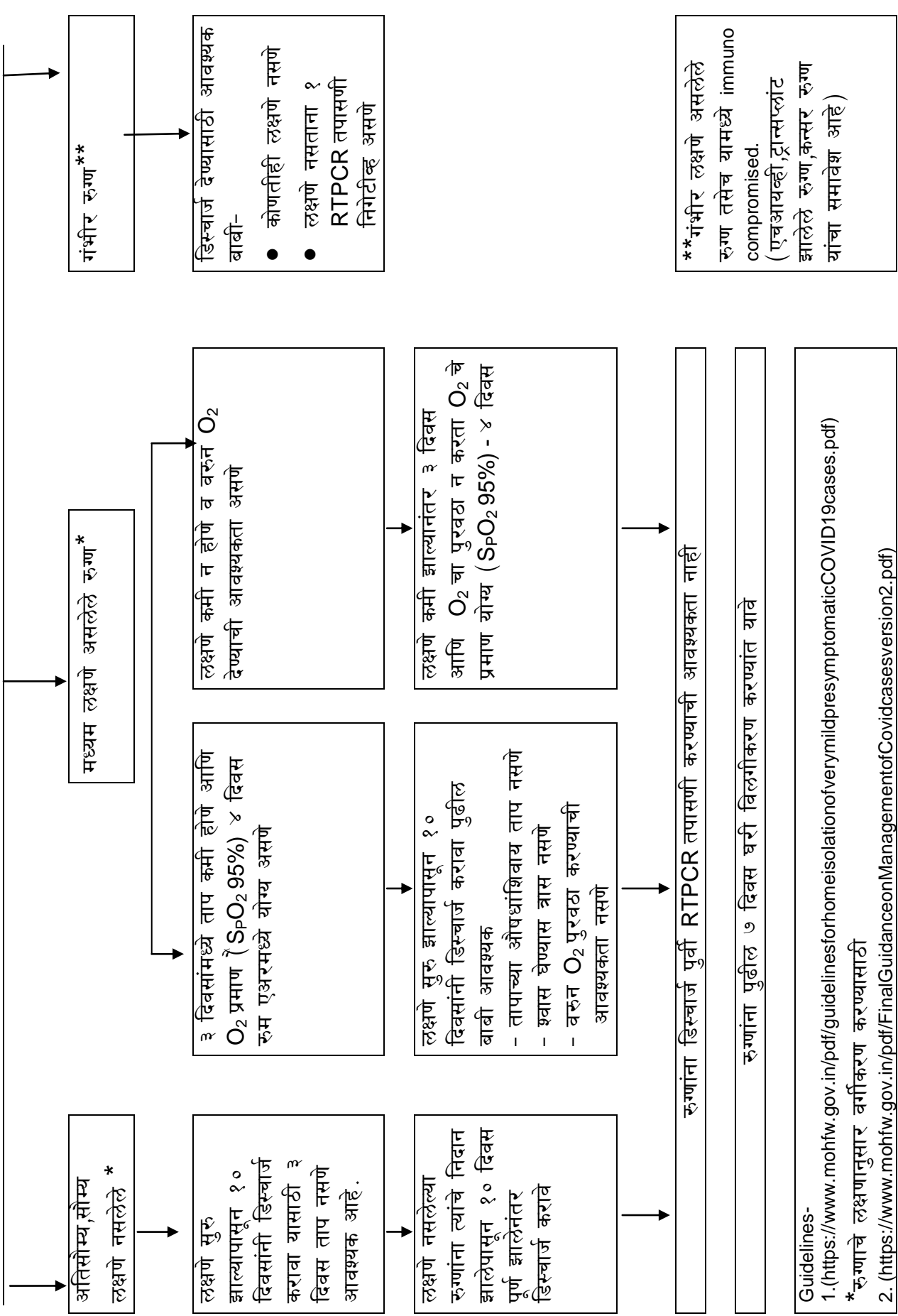
सोबत केंद्रशासनाच्या मार्गदर्शक सूचना दिलेल्या आहेत.

प्रदीप व्यास
९-५-२०२०
(डॉ. प्रदीप व्यास)

प्रधान सचिव, महाराष्ट्र शासन

प्रत मा. मुख्यमंत्री यांचे प्रधान सचिव
प्रत मा. उपमुख्यमंत्री यांचे सचिव
प्रत मा. मंत्री आरोग्य यांचे खाजगी सचिव
प्रत मा. मुख्य सचिव यांचे उपसचिव
प्रत आयुक्त, आरोग्य सेवा, मुंबई
प्रत संचालक, आरोग्य सेवा मुंबई / पुणे

सुधारित डिस्चार्ज पॉलिसी
(कोविड-१९ रुग्ण)



Guidelines-

1. (<https://www.mohfw.gov.in/pdf/guidelinesforhomeisolationofverymildpresymptomaticCOVID19cases.pdf>)

*रुग्णांचे लक्षणानुसार वर्गीकरण करण्यासाठी

2. (<https://www.mohfw.gov.in/pdf/FinalGuidanceonManagementofCovidcasesversion2.pdf>)

Revised Discharge Policy for COVID-19

The revised discharge policy is aligned with the guidelines on the 3 tier COVID facilities and the categorization of the patients based on clinical severity (Available at:

<https://www.mohfw.gov.in/pdf/FinalGuidanceonMangaementofCovidcasesversion2.pdf>)

1. Mild/very mild/pre-symptomatic cases

Mild/very mild/pre-symptomatic cases admitted to a COVID Care Facility will undergo regular temperature and pulse oximetry monitoring. The patient can be discharged after 10 days of symptom onset and no fever for 3 days. There will be no need for testing prior to discharge.

At the time of discharge, the patient will be advised to follow the home isolation for further 7 days as per guidelines available at

<https://www.mohfw.gov.in/pdf/GuidelinesforHomeIsolationofverymildpresymptomaticCOVID19cases.pdf>.

At any point of time, prior to discharge from CCC, if the oxygen saturation dips below 95%, patient is moved to Dedicated COVID Health Centre (DCHC).

After discharge from the facility, if he/she again develops symptoms of fever, cough or breathing difficulty he will contact the COVID Care Centre or State helpline or 1075. His/her health will again be followed up through tele-conference on 14th day.

2. Moderate cases admitted to Dedicated COVID Health Centre (Oxygen beds)

2.1. Patients whose symptoms resolve within 3 days and maintains saturation above 95% for the next 4 days

Cases clinically classified as “moderate cases” will undergo monitoring of body temperature and oxygen saturation. If the fever resolve within 3 days and the patient maintains saturation above 95% for the next 4 days (without oxygen support), such patient will be discharged after 10 days of symptom onset in case of:

- Absence of fever without antipyretics
- Resolution of breathlessness
- No oxygen requirement

There will be no need for testing prior to discharge.

At the time of discharge, the patient will be advised to follow the home isolation for 7 days as per guidelines available at

<https://www.mohfw.gov.in/pdf/GuidelinesforHomeIsolationofverymildpresymptomaticCOVID19cases.pdf>).

2.2. Patient on Oxygenation whose fever does not resolve within 3 days and demand of oxygen therapy continues

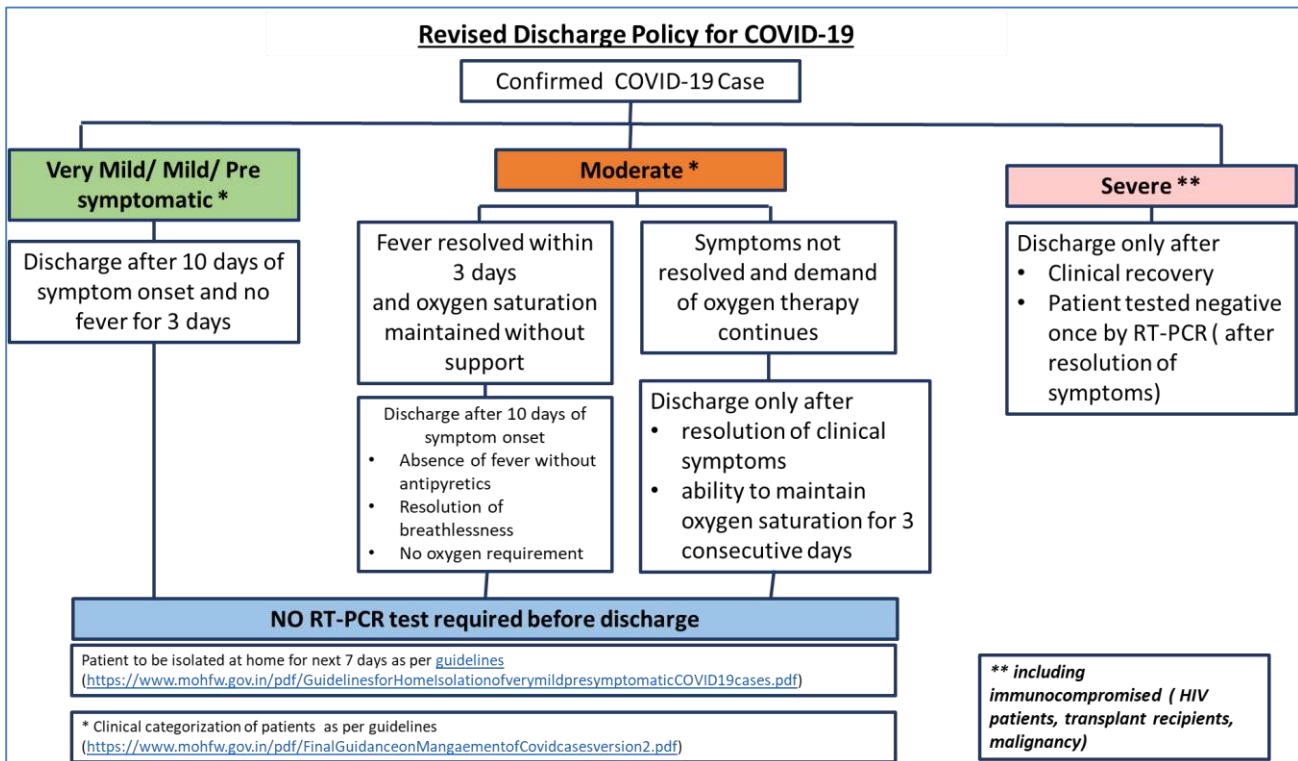
Such patients will be discharged only after

- resolution of clinical symptoms
- ability to maintain oxygen saturation for 3 consecutive days

3. Severe Cases including immunocompromised (HIV patients, transplant recipients, malignancy)

Discharge criteria for severe cases will be based on

- Clinical recovery
- Patient tested negative once by RT-PCR (after resolution of symptoms)



महाराष्ट्र शासन

क्र. कोरोना-२०२०/प्र.क्र. ५८/आरोग्य ५
सार्वजनिक आरोग्य विभाग,
गो. ते. रुग्णालय आवार इमातर,
नविन मंत्रालय, मुंबई-४०० ००९.
दिनांक- ०६.०६.२०२०

प्रति,

जिल्हाधिकारी	(सर्व)
आयुक्त, महानगरपालिका	(सर्व)
जिल्हा शल्य चिकित्सक	(सर्व)
जिल्हा आरोग्य अधिकारी	(सर्व)

विषय: कोवीड-१९ चाचणी पॉझिटीव्ह आलेल्या अति सौम्य किंवा लक्षणे नसलेल्या (Asymptomatic) व्यक्तींसाठी घरी करावयाच्या विलगीकरणाविषयी मार्गदर्शक सूचना

१) उद्देश/व्याप्ती -

भारत सरकारच्या ७ एप्रिल २०२० रोजीच्या संदर्भान्वये कोवीड-१९ संशयित/पॉझिटीव्ह असलेल्या रुग्णांसाठीच्या योग्य व्यवस्थापनासाठी मार्गदर्शक सूचना यापुर्वी निर्गमित झाल्या असून, त्यानुसार सर्व संशयित (ज्यांचे प्रयोगशाळा तपासणी अहवाल प्रतिकेत आहेत), व पॉझिटीव्ह रुग्णांना रुग्णालयामध्ये विलगीकरणासह योग्य व्यवस्थापनाद्वारे आजाराचे संक्रमण खंडीत करण्याविषयी सुचित केले आहे.

प्रचलित मार्गदर्शक सुचनेनुसार, प्रतिबंधित कालावधीमध्ये रुग्णांना वैद्यकियदृष्ट्या लक्षणानुसार लक्षण नसलेले/सौम्य वा अतिसौम्य लक्षणे, मध्यम तीव्र लक्षणे व तीव्र लक्षणांमध्ये वर्गीकृत करावयाचे असून, त्यानुसार रुग्णांना अनुक्रमे अ) कोवीड केअर सेंटर (CCC) ब) डेडिकेटेड कोवीड हेल्थ सेंटर (DCHC) व क) डेडिकेटेड कोवीड हॉस्पिटल (DCH) येथे दाखल करावयाचे आहे. तथापि, अति सौम्य किंवा लक्षणे नसलेल्या कोवीड पॉझिटीव्ह रुग्णांना जर त्यांचे घरामध्ये योग्य प्रकारे सुविधा उपलब्ध असतील तर त्यांचे संमतीनुसार घरी विलगीकरणाचा पर्याय (Home Isolation) उपलब्ध करून देता येईल. याकरीता खालील प्रमाणे मार्गदर्शक सूचना निर्गमित करण्यात येत आहेत.

२) गृह विलगीकरणासाठीची पात्रता -

- उपचार करण्याच्या वैद्यकिय अधिकाऱ्यांनी रुग्णास अति सौम्य किंवा लक्षणे नसल्याबदल वैद्यकियदृष्ट्या प्रमाणित केलेले असावे .
- संबधित रुग्णांच्या घरी त्यांच्या विलगीकरणासाठी तसेच कुटुंबातील व्यक्तीकरीता अलगीकरणासाठी (Home Quarantine) योग्य सोई-सुविधा उपलब्ध असाव्यात .
- घरी दिवस-रात्र (24×7) काळजी घेणारी व्यक्ती उपलब्ध असावी . संबधित काळजीवाहू व्यक्ती व उपचार देणारे रुग्णालय यांच्यामध्ये संपर्क व्यवस्था (दुरध्वनी/मोबाईल) उपलब्ध असणे अनिवार्य आहे .
- वैद्यकिय अधिकाऱ्यांच्या सल्ल्यानुसार काळजीवाहू व्यक्ती व सर्व निकट संपर्कातील व्यक्तींनी प्रोटोकॉलनुसार हायड्रॉक्सी क्लोरोक्विनची मात्रा घ्यावी .
- मोबाईलवर "आरोग्य सेतू" ॲप डाऊनलोड करावे व ते सतत ॲक्टिव्ह (Bluetooth/Wi-fi द्वारे) असेल याविषयी दक्ष रहावे . (Link- <https://www.mygov.in/aarogya-setu-app/>)
- रुग्णांनी स्वतःची काळजी घेणे व नियमितपणे प्रकृतीबाबत पाठपुराव्याविषयी जिल्हा सर्वेक्षण अधिकारी/सर्वेक्षण पथकास माहिती देणे अनिवार्य आहे .
- रुग्णांने स्वतःचे गृह विलगीकरण करण्याविषयी प्रतिज्ञापत्र (परिशिष्ट-१) भरुन द्यावे व सर्व मार्गदर्शक सुचनांचे पालन करावे . प्रतिज्ञापत्र दिल्यानंतर सदरील व्यक्तिस गृह विलगीकरणासाठी पात्र ठरविण्यात येईल .
- निकट सहवासितांना घरी करावायाच्या अलगीकरणासाठी (Home Quarantine) सविस्तर मार्गदर्शक सुचना खालील संकेतस्थळावर उपलब्ध आहेत . (Link- <https://www.mohfw.gov.in/>) . काळजीवाहू व्यक्ती व रुग्णांसाठीच्या सुचना या परिशिष्ट क्र. २ मध्ये दिलेल्या आहेत .

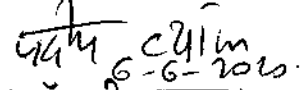
३) वैद्यकिय मदत कधी घ्यावी ?

रुग्णांने स्वतः व काळजीवाहू व्यक्तींनी त्यांच्या आरोग्यावर लक्ष ठेवावे. खालीलपैकी कोणतेही गंभीर लक्षणे/चिन्हे आढळून आल्यास त्वरीत वैद्यकिय मदत घ्यावी.

- धाप लागणे/श्वासोच्छ्वासास अडथळा निर्माण होणे.
- छातीमध्ये सतत दुखणे/विदना होणे.
- संभ्रमावस्था/शुध्द हरपणे.
- ओठ/चेहरा निळसर पडणे
- उपचार करणाऱ्या वैद्यकिय अधिकाऱ्यांची सल्ल्यानुसार, संदर्भ सेवेची गरज पडणे.

४) गृह विलगीकरण कधीपर्यंत करावे ?

गृह विलगीकरण खाली ठेवलेल्या व्यक्तीला लक्षणे सुरु झाल्यानंतर १७ दिवसानंतर किंवा रुग्णाला लक्षणे नसेल (asymptomatic) तर चाचणीसाठी नमुना (sample) ज्या दिवसी घेतलेला असेल तेथून १७ दिवसानंतर आणि मागील १० दिवसांपासून ताप येत नसेल तर गृह विलगीकरणातून व्यक्तिस मुक्त करावे. गृह विलगीकरणाचा काळ संपल्यानंतर परत कोवीड-१९ साठी चाचणी करण्याची आवश्यकता नाही.


6-6-2020.
(डॉ प्रदीप व्यास)

प्रधान सचिव, महाराष्ट्र शासन

प्रत

सचिव, वैद्यकीय शिक्षण व औ.द्र. विभाग, मंत्रालय, मुंबई
आयुक्त तथा अभियान संचालक, रा.आ.अ., मुंबई -१
संचालक आरोग्य सेवा, मुंबई/ पुणे.
उप संचालक आरोग्य सेवा (सर्व मंडळ)

प्रतिज्ञापत्र
गृहविलगीकरण

माझे नांव असून, मी

..... येथील रहिवाशी आहे.

माझे कोवीड-१९ आजाराचे पॉझिटीव्ह निदान झाले असून, या प्रतिज्ञापत्राद्वारे स्वेच्छेने विहित कालावधीसाठी पुर्ण वेळ काटेकोरपणे गृह विलगीकरण करून घेईन. या कालावधीत मी स्वतःची आणि माझ्या निकट संपर्कातील व्यक्तींच्या आरोग्यांवर लक्ष ठेवेन. जर माझ्यामध्ये आजाराची गंभीर लक्षणे / चिन्हे आढळून आली अथवा माझ्या संपर्कातील व्यक्तींमध्ये कोवीड-१९ आजाराची कोणतीही लक्षणे आढळून आली तर, त्वरित नियुक्त केलेल्या सर्व्हेक्षण पथक / नियंत्रण कक्षाशी संपर्क करेन.

गृह विलगीकरण करताना मला कोणती काळजी घ्यावी लागेल, याबद्दल आरोग्य विभागाकडून सविस्तरपणे सांगितले गेले आहे.

गृह विलगीकरणाच्या मार्गदर्शक सुचनांचे पालन न केल्यास मी विहित कायदानुसार कारवाईस पात्र असेन.

स्वाक्षरी -

दिनांक -

संपर्क क्रमांक -

रुग्णांची काळजी घेणाऱ्या व्यक्तीसाठी सुचना -

- मास्क (मुखवटा) - आजारी व्यक्तीच्या रुममध्ये, काळजी घेणाऱ्या व्यक्तीने ३ पदरी मास्क वापरणे गरजेचे आहे. वापर करत असताना मास्कच्या पुढील भागास स्पर्श करू नये. जर मास्क ओला किंवा घामामुळे खराब झाल्यास, ताबडतोब बदलणे. मास्कची वापरानंतर योग्य प्रकारे विल्हेवाट लावून हात सॅनिटायझरने स्वच्छ करावेत.
- त्याने/तिने स्वतःच्या चेहरा, नाक किंवा तोंडास स्पर्श करणे टाळावे.
- आजारी व्यक्ती किंवा त्याच्या सभोवतालच्या वस्तूशी संपर्क आल्यानंतर काळजी घेणाऱ्या व्यक्तीने स्वतःच्या हाताची स्वच्छता साबण व पाण्याने करावी.
- हाताची स्वच्छता - अन्न शिजवण्यापूर्वी व शिजल्यानंतर, जेवणापूर्वी व जेवणानंतर तसेच शौचालयाचा वापर झाल्यानंतर व जेव्हा जेव्हा हात अस्वच्छ होतील तेव्हा साबण व पाण्याने कमीत कमी ४० सेकंद हात स्वच्छ करावेत. जर हात कोरडे असतील तर अल्कोहोल मिश्रित आधारीत सॅनिटायझरचा वापर करून हात स्वच्छ करावेत.
- साबण व पाण्याने हात स्वच्छ केल्यानंतर ते टिश्यू पेपरने कोरडे करावेत, टिश्यू पेपर उपलब्ध नसल्यास, स्वच्छ टॉवेलचा वापर करावा व टॉवेल ओला झाल्यास बदलावा.
- रुग्णांशी संपर्क - रुग्णांच्या शारीरिक स्रावाशी मुख्यतः थुंकी किंवा श्वसन मार्गातून उत्पन्न होणाऱ्या स्रावांशी थेट संपर्क टाळावा.
- रुग्णाच्या संपर्कात आलेल्या सभोवतालच्या वस्तूशी (उदा- रुग्ण घेत असलेले सिगारेट, वापरत असलेली भांडी, पेय जल, टॉवेलस व आंथरुण) यांचा थेट संपर्क टाळावा.
- रुग्णाला त्याच्याच खोलीत अन्न पुरवणे आवश्यक आहे.

- रुग्णांनी वापरलेली भांडी, डिश व टॉवेल्स हे सर्व साबण/डिटर्जंट आणि पाण्याने स्वच्छ करावेत. भांडी, डिश, टॉवेल्स स्वच्छ केल्यानंतर पुन्हा वापरले जाऊ शकतात. हातमोजे काढल्यानंतर किंवा वापरलेल्या वस्तू हाताळलेनंतर हात स्वच्छ धुवावेत.
- तीन पदरी मेडिकल मास्क व डिस्पोजेबल ग्लोव्हजचा वापर - साफसफाई करताना किंवा रुग्णांनी वापरलेल्या पृष्ठभागाची किंवा त्यांच्या कपड्यांची स्वच्छता करताना ट्रिपल लेअर मास्कचा वापर करावा. हातमोजे घालण्यापूर्वी किंवा काढलेनंतर हाताची स्वच्छता करावी.
- काळजी घेणाऱ्या व्यक्तींनी रुग्ण वेळेवर औषधोपचार घेत असल्याची खात्री करावी.
- रुग्णाच्या संपर्कात आलेले सर्व व्यक्ती व रुग्णाची काळजी घेणाऱ्या व्यक्तींनी त्यांच्या आरोग्याचे स्वपरीक्षण करावे. दररोज तापमान व कोवीड-१९ आजाराची लक्षणे (उदा- ताप, खोकला व श्वासोच्छवासास त्रास) आढळल्यास तात्काळ सदरील वैद्यकिय अधिकाऱ्यांना संपर्क साधावा.

रुग्णांसाठी सुचना -

- रुग्णांनी नियमित ट्रिपल लेयर मेडिकल मास्कचा वापर करावा. ८ तासांच्या वापरानंतर किंवा त्याअगोदरच ओला झाला असेल तर मास्क काढून टाकावा.
- मास्कची १% सोडीयम हायपोक्लोराईटच्या साहाय्याने निर्जुतुकीकरण केल्यानंतरच विल्हेवाट लावावी.
- रुग्णांनी त्याला नेमून दिलेल्या खोलीमध्येच राहणे बंधनकारक असून रुग्णांनी घरातील इतर व्यक्ती विशेषतः जेष्ठ नागरीक, उच्च रक्तदाब, हृदयविकार व किडनी विकार असलेल्या व्यक्तीपासून दूर रहावे.
- रुग्णांनी पुरेशी झोप व जास्तीत जास्त द्रव पदार्थांचे सेवन करावे. जेणेकरून शरीरातील पाण्याचे प्रमाण संतुलित राहिल.

- रुग्णांनी उघडयावर खोकू अथवा थुंकु नये .
- रुग्णांनी आपल्या हाताची स्वच्छता साबण व पाण्याने कमीत कमी ४० सेकंद किंवा अल्कोहोल मिश्रित सॅनिटायझरने करावी .
- रुग्णांनी स्वतःच्या वस्तूचा संपर्क इतर व्यक्तीशीं येणार नाही याची काळजी घ्यावी .
- रुग्णांचे रुममधील टाईल्स (पृष्ठभाग) व वारंवार स्पर्श होणाऱ्या (उदा-टेबल टॉप्स, डोअर नॉब्स, हॅण्डल इ.) १% सोडीअम हायपोक्लोराईट द्रावणाने स्वच्छ करावे .
- डॉक्टरांनी दिलेल्या सुचना व औषधोपचाराचे रुग्णांनी तंतोतंत पालन करावे .
- रुग्णांनी स्वतःच्या आरोग्याचे स्वपरीक्षण दररोज तापमानाचे नोंद घेऊन करावे व कोवीड-१९ आजाराची कोणतीही लक्षणे आढळल्यास त्याची माहिती संबधित आरोग्य यंत्रणेला द्यावी .



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प्रधान सचिव
Dr. Pradeep Vyas, I.A.S.
Principal Secretary



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नविन मंत्रालय, मुंबई- ४०० ००१
दुरध्वनी : कार्यालय - ०२२-२२६१७३८८ फॅक्स : २२६१७९९९
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प.क्र.कोविड-२०२०/प्र.क्र.१८/आ-१
दिनांक: ९ जून, २०२०

प्रति,

जिल्हाधिकारी..... (सर्व)
आयुक्त, महानगरपालिका (सर्व)
उप संचालक आरोग्य सेवा, प्रभारी मंडळ (सर्व)
जिल्हा शल्यचिकित्सक, जिल्हा रुग्णालय... (सर्व)
जिल्हा आरोग्य अधिकारी, जिल्हा परिषद ... (सर्व)

विषय: कोविड-१९ रुग्णालयामध्ये रुग्णासेवा बळकट करण्यासाठी
मार्गदर्शक सूचना.

संदर्भ: या कार्यालयाचे पत्र क्र. संआसे/कोविड-१९नियंत्रण कक्ष/कक्ष-५८/
१०० खाटा-विलगीकरण व अतिदक्षता अपेक्षित मनुष्यबळ/७१४८-
२२४/२०२०, दि.७/४/२०२०.

कोविड-१९ चे मृत्यू प्रमाण कमी करण्यासाठी कोविड-१९ रुग्णांना त्वरित आणि प्रभावी उपचार मिळण्यासाठी डॉक्टर, नर्सस व पॅरामेडिकल कर्मचारी यांच्यामध्ये योग्य समन्वय साधून रुग्णालयामध्ये भरती असलेल्या कोविड-१९ रुग्णांना अविरत स्वास्थ्य सेवा पुरवणे आवश्यक आहे. यासाठी राज्य स्तरावरून खालील मार्गदर्शक सूचना देण्यात येत आहेत:-

(अ) रुग्ण सेवा देणे:-

- १) दिनांक ७/४/२०२० रोजी दिलेल्या मार्गदर्शक सूचनानुसार कोविड-१९ वॉर्डमध्ये दिलेल्या निकषानुसार आवश्यक डॉक्टर, नर्सस व इतर कर्मचाऱ्यांची नियुक्ती करण्यात यावी. नियुक्ती करताना रुग्णसंख्या विचारात घेण्यात यावी.
- २) उपलब्ध डॉक्टर्स, नर्सस आणि अन्य पॅरामेडिकल स्टाफसाठी ड्युटी रोस्टर तयार करावे व ते सर्व संबंधितांच्या निदर्शनास आणावे.

- ३) एक शिफ्ट साधारणपणे ८ तासांची असावी .एका शिफ्टमध्ये उपलब्ध डॉक्टर्स, नर्सस आणि इतर कर्मचारी यांची दोन गटांमध्ये विभागणी करून, प्रत्येक गटाला ४ तास वॉर्डमध्ये आणि ४ तास वॉर्डबाहेरील अनुषंगिक कामे अशी विभागणी करावी.
- ४) ज्या गटाची वॉर्डमध्ये ड्युटी लावली गेली आहे त्यांनी PPE किट परिधान करून ४ तास वॉर्डच्या आत राहून रुग्णांची नियमित तपासणी आणि उपचार करावे व उर्वरित ४ तासांमध्ये बाहेर राहून रुग्णांच्या नोंदी पूर्ण करणे आणि नोंदीची तपासणी करून अहवाल तयार करणे इत्यादी कामे करावीत. या दरम्यान दुसरा गट PPE किट परिधान करून वॉर्डमध्ये राहून रुग्णसेवा देईल.
- ५) SPO2 आणि शरीर तापमानाची नोंद या दोन अत्यंत महत्वाच्या नोंदी आहेत. प्रत्येक रुग्णांसाठी सदरील नोंदी खालील तक्त्याप्रमाणे करण्यात याव्यात:-

	शरीराचे तापमान तपासणे	SPO2 तपासणे
ICU वॉर्ड मधील रुग्ण	सतत निरिक्षणाखाली ठेवणे	सतत निरिक्षणाखाली ठेवणे
ऑक्सिजन वर असलेले रुग्ण	प्रत्येक २ तासांनी	प्रत्येक २ तासांनी
लक्षणे असलेले आयसोलेशन वॉर्ड मधील रुग्ण	प्रत्येक ४ तासांनी	प्रत्येक ४ तासांनी
लक्षणे नसलेले आयसोलेशन वॉर्ड मधील रुग्ण	प्रत्येक ८ तासांनी	प्रत्येक ८ तासांनी

- ६) शरीराचे तापमान ३८.०C (१००.०४ oF) पेक्षा जास्त असल्यास रुग्णाची विशेष काळजी घ्यावी. ऑक्सिजन पूर्ण क्षमतेने देऊनही SPO2 ९४% पेक्षा कमी होत असल्यास ALS Ambulance ने रुग्णास त्वरित ICU सेवा उपलब्ध असलेल्या रुग्णालयास संदर्भित करावे.
- ७) कोविड-१९ पोर्टल मधील सर्व नोंदी सुनिश्चित करण्यासाठी तसेच फॅसिलिटी अॅपमध्ये नियमितपणे माहिती भरण्यासाठी रुग्णालयामधील उपलब्ध फार्मसी अधिकारी/ लिपिक/कार्यक्रम/सहायक DEO यांना जबाबदारी द्यावी. यासाठी एक किंवा दोन व्यक्ती निश्चित कराव्यात. लिपिक उपलब्ध नसल्यास जवळील आरोग्य केंद्रावरील लिपिक/कार्यक्रम/सहायक DEO यांना यासाठी जबाबदारी द्यावी
- ८) रुग्णालयामध्ये खाटांच्या संख्येनुरूप ५ दिवस पुरेल इतका O2 चा साठा उपलब्ध असावा.
- ९) कोविड रुग्णालयांमध्ये १ अॅम्ब्युलन्स सतत उपलब्ध असावी.
- १०) कोविड रुग्णांवर उपचार करण्यासाठी आवश्यक सर्व औषधी आणि Consumables चा पुढील ३ महिने इतका साठा उपलब्ध असावा.

- (ब) **रुग्णालयातील डॉक्टर्स, नर्सस व इतर कर्मचाऱ्यांच्या जबाबदाऱ्या:-**
रुग्णालय स्तरावरील अधिकारी आणि कोविड वॉर्ड मध्ये नियुक्त डॉक्टर, पॅरामेडिकल स्टाफ आणि अन्य कर्मचारी यांच्या जबाबदाऱ्या खालीलप्रमाणे असतील:-
- १) **रुग्णालय प्रभारी वैद्यकीय अधिकारी/अधिक्षक**
कोविड रुग्णालयामध्ये कार्यक्षमपणे सेवा देण्यासाठी रुग्णालयाची जबाबदारी सक्षम वैद्यकीय अधिकाऱ्यास देण्यात यावी. रुग्णालय प्रभारी वैद्यकीय अधिकारी यांच्या जबाबदाऱ्या खालीलप्रमाणे असतील:-
 - i) कोविड वॉर्डमध्ये रुग्णसेवेसाठी आवश्यक डॉक्टर्स यांची नियुक्ती करणे आणि त्यांचे ड्युटी रोस्टर तयार करणे.
 - ii) रुग्णालयातील डॉक्टर्स, पॅरामेडिकल स्टाफ आणि इतर कर्मचारी यांची दैनंदिन उपस्थिती तपासणे तसेच त्यांच्याद्वारे दिल्या गेलेल्या सेवांचे पर्यवेक्षण करणे.
 - iii) रुग्णालयामध्ये औषधे, Consumables, उपकरणे व अन्य साधन सामुग्री यांची उपलब्धता सतत राहिल याची दक्षता घेणे.
 - iv) रुग्णालयातील सर्व नोंदी वेळोवेळी भरल्या जात आहेत याची खात्री करणे.
 - v) रुग्णालयाचे दैनंदिन परीक्षण करून नियमित स्वच्छता व निर्जुतुकीकरण करून घेणे.
 - vi) रुग्णालयाचे वेळोवेळी पर्यवेक्षण करून कोविड रुग्णांना प्रोटोकॉलनुसार आरोग्यसेवा उपलब्ध करून देण्यासाठी आवश्यक उपाययोजना करणे.
 - vii) रुग्णालयातील विविध विभागांमध्ये समन्वय प्रस्थापित करणे.
 - viii) कोविड फॅसिलिटी अॅपमध्ये दररोज माहिती update केल्याची खात्री करणे.
 - ix) जिल्हा व राज्य स्तरावरून निर्देशित केल्याप्रमाणे आवश्यक अहवाल सादर करणे.
 - २) **ड्युटी मेडिकल ऑफीसर**
ड्युटी रोस्टर प्रमाणे वॉर्डमध्ये वैद्यकीय अधिकाऱ्यांची उपस्थिती पुर्णवेळ असणे अत्यंत आवश्यक आहे. वैद्यकीय अधिकाऱ्यांच्या खालीलप्रमाणे जबाबदाऱ्या असतील:-
 - i) राज्य व जिल्हा स्तरावरून निर्देशित मानक प्रोटोकॉल नुसार रुग्णांची नियमित तपासणी करणे आणि आवश्यक औषधोपचार करणे. रुग्णाची तपासणी, लक्षण, औषधोपचार यांची केसपेपरवर नियमित नोंदणी करणे.
 - ii) दिल्या गेलेल्या प्रोटोकॉल नुसार रुग्णांना औषधोपचार देणे.
 - iii) भरती रुग्णांच्या आरोग्यविषयक स्थितीची नोंद आणि दररोज वरिष्ठांना अहवाल सादर करणे
 - ३) **वॉर्ड सिस्टर/प्रभारी सिस्टर**
कोविड वार्डसाठी स्वतंत्र प्रभारी सिस्टरची नियुक्ती करावी, त्याच्याद्वारे खालील जबाबदाऱ्या पार पाडल्या जातील:-

- i) मार्गदर्शक सुचनांनुसार तसेच उपलब्ध नर्सिंग स्टाफच्या संख्येनुसार नियोजन करावे.
- ii) वॉर्डमध्ये नर्सिंग आणि इतर कर्मचाऱ्यांचे ड्युटी रोस्टर बनवणे आणि वॉर्ड मध्ये २४ तास नर्सिंग स्टाफची उपलब्धता सुनिश्चित करणे.
- iii) प्रत्येक नर्सिंग स्टाफकडून त्यांच्याद्वारे केलेल्या कार्याचा अहवाल घेणे आणि सुधारणेसाठी सूचना करणे.
- iv) दररोज किमान १ वेळा प्रत्यक्ष वॉर्ड/ICU मध्ये जाऊन वॉर्डमध्ये दिल्या जाणाऱ्या रुग्णसेवेचे पर्यवेक्षण करणे आणि गंभीर आजारी रुग्णांची विशेष काळजी घेणे.
- v) नर्सिंग स्टाफ वॉर्डमध्ये उपस्थित राहून PPE चा वापर करून रुग्णसेवा देत असल्याची खात्री करणे.
- vi) वॉर्ड मधील नर्सिंग आणि इतर पॅरामेडिकल कर्मचाऱ्यांची उपस्थिती तपासून वरिष्ठ स्तरावर नियमित अहवाल सादर करणे.
- vii) रोगाचे निदान आणि उपचार संबंधित सर्व नोंदी केल्या असल्याची खात्री करणे.
- viii) रुग्णांसाठी आहार व्यवस्थेची देखरेख करणे.
- ix) वॉर्डमध्ये आवश्यक औषधे, Consumables, लिनन इत्यादीचा पुरवठा आणि पुरेसा साठा सतत राहिल याची दक्षता घेणे.
- x) वॉर्डमधील स्वच्छता व निर्जंतुकीकरण याचे नियमित पर्यवेक्षण करणे आणि सुचना देणे.
- xi) दररोज रुग्णांची गणना करून गंभीर रुग्णांविषयी वरिष्ठांना अहवाल सादर करणे.

४) स्टाफ नर्स

- i) रुग्णांसाठी बेड तयार करणे आणि स्वच्छ लिनन व्यवस्था करणे.
- ii) रुग्णांच्या तपासणी व उपचारासाठी वैद्यकीय अधिकाऱ्यांना मदत करणे तसेच क्लिनिकल तपासणी प्रक्रियेत मदत करणे.
- iii) प्रत्येक रुग्णाचे दिलेल्या प्रोटोकॉलनुसार PR, RR, SPO2 तपासणे.
- iv) डॉक्टरांनी दिल्या गेलेल्या क्लिनिकल सुचनांप्रमाणे रुग्णसेवा देणे.
- v) रुग्णांसाठी आहाराचे नियोजन करणे.
- v) रोस्टर नुसार ड्युटी शिफ्टच्या सुरुवातीला रुग्णांचा ताबा घेणे आणि शिफ्ट संपल्यानंतर रुग्णांचा ताबा देणे.
- vi) वॉर्डमधील सफाई कर्मचाऱ्यांचे पर्यवेक्षण करणे आणि नियमितपणे स्वच्छता व निर्जंतुकीकरण करून घेणे.
- vii) वॉर्ड मधील लिनन आणि उपकरणांची योग्य देखभाल करणे आणि उपकरण नादुरुस्त असल्यास वरिष्ठांना सूचित करून तात्काळ दुरुस्ती करून घेणे.
- viii) औषधे, लिनन आणि Consumables इत्यादींचा साठा वेळोवेळी तपासणे आणि वेळेत इन्डेंट बनवणे.

- ix) आपत्कालीन औषधे आणि जीवन संरक्षक उपकरणांची रोज तपासणी करुन उपलब्धता सुनिश्चित करणे.
- x) स्टॉक रजिस्टरची देखभाल करणे.
- xi) फॅसिलिटी अॅपमध्ये भरण्यासाठी आवश्यक माहिती फार्मसी ऑफिसरला/DEO ला उपलब्ध करुन देणे.

५) **फार्मसी ऑफिसर**

- i) कोविड रुग्णांना विनाविलंब सेवा पुरवण्यासाठी आवश्यक सर्व औषधे, Consumables उपकरणे, ऑक्सिजन इत्यादींचा पुरेसा साठा रुग्णालयांमध्ये उपलब्ध करुन ठेवणे आणि वॉर्डमधील मागणीनुसार पुरवठा करणे (Logistic Management)
- ii) स्टॉक रजिस्टरची देखभाल करणे.
- iii) कोविड फॅसिलिटी अॅपमध्ये दररोज सर्व रुग्णांची व इतर माहिती अॅपमध्ये भरणे.
- iv) फॅसिलिटी अॅपचा रोजचा अहवाल रुग्णालय प्रभारी यांना दिवसाच्या शेवटी सादर करणे.

६) **लिपिक /कार्यक्रम सहाय्यक/ DEO**

- i) वॉर्ड मधील नोंदी ठेवण्यासाठी व अहवाल तयार करण्यासाठी नर्सिंग कर्मचाऱ्यांना मदत करणे.
- ii) अॅप मध्ये नियमित स्वरुपात माहिती प्रविष्ट करणे व त्यासाठी फार्मसी ऑफिसर सोबत समन्वय साधणे.
- iii) वरिष्ठांनी वेळोवेळी दिलेल्या निर्देशानुसार आवश्यक अहवाल बनवणे.

वरील निर्देशांचे काटेकोरपणे पालन करण्यासाठी जिल्हा स्तरावरील अधिकाऱ्यांची नियुक्ती करावी. यांच्याद्वारे रुग्णालयाचे परीक्षण करुन वेळोवेळी अहवाल जिल्हा आणि राज्य स्तरावर सादर करावा.

(क) **(रुग्णालयाशी संबंधित सर्वांना लागू "हे करा":-**

- i) PPE Kit घालूनच डॉक्टर्स व इतर पॅरामेडिकल यांनी कोव्हीड वॉर्डमध्ये प्रवेश करावा.
- ii) PPE घालण्यासाठी तसेच काढण्यासाठी योग्य पध्दतीचा वापर करावा. यासाठी <https://www.youtube.com/watch?v=8PSBOZUelTc> (AIIMS Telemedicine Channel) या लिंकचा उपयोग करावा.
- iii) वापरलेले गॉगल्स, Face shield, Splash proof Apron, Plastic coverall, Nitrile gloves इ. लाल रंगाच्या पिशवीमध्ये टाकावे.
- iv) वापरलेले मास्क (Triple Layer mask, N95 Mask etc.), हेड कव्हर/कॅप, शू कव्हर, डिस्पोजेबल लिनन गाऊन, नॉन प्लॅस्टिक किंवा सेमी प्लॅस्टिक कव्हरऑल यांना पिवळ्या रंगाच्या पिशवीमध्ये टाकावे. यासाठी खालील लिंकचा उपयोग करावा. https://cpcb.nic.in/uploads/Projects/Bio-Medical-Waste/COVID_19_video_2.mp4

- v) Goggles चा पुनर्वापर करावयाचा असल्यास खालील बाबी कराव्यात:-
- प्रत्येक वेळी वापरानंतर गॉगल्स नव्याने तयार केलेल्या १% Sodium Hypochlorite solution मध्ये १० मिनिटे ठेऊन निर्जंतुक करावे. त्यानंतर गॉगल्स आतून/बाहेरून पाण्याने स्वच्छ धुवावेत. हवेत किंवा स्वच्छ पृष्ठभागावर ठेऊन कोरडे करावे.
 - त्यानंतर पेपर बॅगमध्ये/स्वच्छ ठिकाणी ठेवावेत.
 - प्रत्येक कर्मचाऱ्याकरिता एक वेगळा गॉगल असावा.
 - एक गॉगल या प्रकारे निर्जंतुक करून पाच वेळा वापरता येऊ शकतात.

(ड) (रुग्णालयाशी संबंधित सर्वांना लागू) "हे करू नका":-

- i) वापरलेले PPE किट, मास्क इतरत्र टाकू नये.
- ii) कोविड वॉर्ड/आयसीयु ड्युटी असलेल्या डॉक्टर, नर्स आणि इतर कर्मचाऱ्यांनी वारंवार आतबाहेर करू नये.
- iii) कोविड वॉर्ड/आयसीयु मध्ये प्रवेश करताना आणि बाहेर पडताना डॉक्टर, नर्स आणि इतर कर्मचाऱ्यांवर सोडियम हायपोक्लोराईट द्रावण/सॅनीटायझर चा शिडकाव करू नये.
- iv) कोविड वॉर्ड /आयसीयु मध्ये रुग्णांच्या नातेवाईकांना प्रवेश देऊ नये.

Pradeep Vyasa
(डॉ. प्रदीप व्यास) १-6-2020

प्रधान सचिव, महाराष्ट्र शासन

प्रत रवाना:

१. आयुक्त आरोग्य सेवा तथा अभियान संचालक, राआअ, मुंबई.
२. संचालक आरोग्य सेवा, पुणे
३. संचालक आरोग्य सेवा, मुंबई

GOVERNMENT OF MAHARASHTRA

IMPORTANT

No.- Corona-2020/CR No.58/Aa-5
Public Health Department
G T Hospital Complex Building
10th Floor, Mantralaya, Mumbai-1
psec.pubhealth@maharashtra.gov.in
Date : 11.06.2020

To,

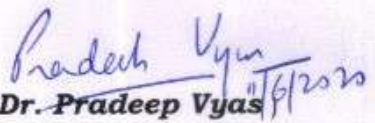
The District Collector, (All)
The Commissioner, Municipal Corporation, (All)

In the State of Maharashtra we started screening and testing for Covid-19 cases since the month of January-2020 and first Covid positive case was detected in Maharashtra State on 9th of March, 2020. Initially, testing facilities were limited and only 2 labs were doing testing and as of now more than 90 laboratories are doing RtPCR Tests for Covid-19.

Initially, Laboratories used to inform the results of swab over email or phone to IDSP Cell of Public Health Department, followed by hard copy of results. Sometimes, such reports were also directly sent to concerned District Collectors and Municipal Commissioners. Subsequently, Ministry of Health, Government of India started Covid-19 portal, which underwent several improvements and versions. Later, Government of India provided direct access to ICMR portal (cvanalytics) in which all ICMR approved Laboratories are entering results almost on real time basis.

Now it is necessary to know exact load of active cases so as to better plan and utilize the health infrastructure and hence a detailed data reconciliation exercise has been undertaken and line listing till midnight of 6th June, 2020 (intervening night of 6th and 7th June) has been generated after data cleaning and shared with all District and Municipal Corporation on 10th of June, 2020.

Now, Chief Secretary has directed that, this data reconciliation be completed at the earliest and by 5PM on 15th of June, 2020 each District and Municipal Corporation should inform Number of Case Discharged, Number of Covid deaths, Active Cases, Status of Active Case (Symptomatic, Critical, Asymptomatic, etc.) out of the line list generated till midnight of 6th June, 2020 as referred above. Any data mismatch brought to notice subsequently would be viewed very seriously.


(**Dr. Pradeep Vyas**)

Principal Secretary,
Public Health Department

Copy to -

1. Chief Secretary, Government of Maharashtra.
2. Commissioner Health cum Mission Director, NHM, Mumbai
3. Director Health Services, Pune / Mumbai

महाराष्ट्र शासन

क्र. कोरोना-२०२०/प्र.क्र. ५८/आरोग्य ५
सार्वजनिक आरोग्य विभाग,
गो. ते. रुग्णालय आवार इमारत,
नविन मंत्रालय, मुंबई-४००००९.
दिनांक - १२.०६.२०२०

प्रति,

जिल्हाधिकारी	(सर्व)
आयुक्त, महानगरपालिका	(सर्व)
जिल्हा शल्य चिकित्सक	(सर्व)
जिल्हा आरोग्य अधिकारी	(सर्व)

विषय: ग्रामीण कार्यक्षेत्रासाठी कोविड १९ प्रतिबंध व नियंत्रण उपाययोजना

कोविड-१९ आजाराची साथ राज्यामध्ये सुरु आहे. या साथीच्या रुग्णांचे प्रमाण दिवसेंदिवस वाढत आहे. राज्यामध्ये सद्यःस्थितीत कोविड-१९ रुग्णांचे प्रमाण शहरी भागामध्ये प्रामुख्याने आढळून येत आहे. परंतु मूळ ग्रामीण भागातील रहिवाशी शहरामधून परत आल्यामुळे तसेच लॉकडाऊन शिथिल झाल्यामुळे ग्रामीण भागातून विविध कारणांसाठी लोकांची शहरात ये / जा सुरु झाल्यामुळे कोविड-१९ रुग्णांची संख्या ग्रामीण भागात वाढण्याची शक्यता आहे. या दृष्टीने ग्रामीण भागातील यंत्रणा सतर्क असणे आवश्यक आहे.

प्राथमिक आरोग्य केंद्र स्तर आणि ग्रामीण रुग्णालय स्तरावर कोविड १९ प्रतिबंध आणि नियंत्रणाच्या अनुषंगाने पुढील मार्गदर्शक सूचना निर्गमित करण्यात येत आहेत.

(१) **प्राथमिक आरोग्य केंद्र स्तरावर कोविड १९ संदर्भातील तयारी :**

प्रा आ केंद्र स्तरावर कोविड १९ प्रतिबंध आणि नियंत्रण संदर्भात पुढील प्रमाणे तयारी करण्यात यावी -

- प्रा आ केंद्र स्तरावर गाव निहाय कोविड १९ बाधित रुग्णांची माहिती आणि बिंदू नकाशा
- प्रा आ केंद्र स्तरावर गावनिहाय स्थलांतरित समूहांची माहिती
- औषध आणि साधनसामुग्री साठा आणि मागणी
- सर्व कर्मचा-यांचे प्रशिक्षण नियोजन
- तालुका आणि प्रा आ केंद्रांतर्गत खाजगी डॉक्टरांची यादी , प्रशिक्षण आणि समन्वयाचे नियोजन



(२) बाहय रुग्ण तपासणी:

- (१) प्रत्येक तालुक्यामध्ये फ्ल्यू/ फिवर क्लिनिक सुरु करण्यात यावे. हे क्लिनिक साधारणपणे तालुक्यातील CCC च्या ठिकाणी अथवा निश्चित केलेल्या ठिकाणी असावे.
- (२) बाहयरुग्ण तपासणी - प्राथमिक आरोग्य केंद्र व ग्रामीण रुग्णालया मधील बाहय रुग्ण विभागामध्ये येणा-या तापाच्या प्रत्येक रुग्णाचा ताप Infrared thermometer ने मोजावा तसेच SpO2 तपासावे. त्यानंतर खालील दिलेल्या तक्त्यानुसार कार्यवाही करावी.

वर्गवारी	लक्षणे	इतर माहिती	करावयाची कार्यवाही
अ	सौम्य ताप ((३८°C किंवा 100.4°F पेक्षा कमी), सर्दी, खोकला, घशात खवखव	राज्य किंवा राज्याबाहेरून आलेले स्थलांतरित	कोविड केअर सेंटरला पाठवावे. प्रयोगशाळा चाचणी करावी.
		स्थानिक रुग्ण / बाधित रुग्णाचा संपर्क नाही	घरगुती अलगीकरण करावे. नेहमीचे औषधोपचार द्यावेत. स्थानिक कर्मचा-यामार्फत दैनंदिन माहिती घ्यावी.
ब	ताप (३८°C पेक्षा जास्त किंवा 100.4° F पेक्षा जास्त), सर्दी, खोकला, घशात खवखव परंतु SpO2 - 94% पेक्षा जास्त.	राज्य किंवा राज्याबाहेरून आलेले स्थलांतरित	कोविड केअर सेंटरला पाठवावे. प्रयोगशाळा चाचणी करावी.
		स्थानिक रुग्ण / बाधित रुग्णाचा संपर्क नाही	घरगुती अलगीकरण करावे. ऑसेलटॅमीवीर आणि नेहमीचे औषधोपचार द्यावेत. स्थानिक कर्मचा-यामार्फत दैनंदिन माहिती घ्यावी. (रुग्णास इतर जोखमीचे आजार असल्यास आणि वय ४० हून अधिक असल्यास कोविड हेल्थ सेंटरला पाठवावे.)
क	ताप (३८°C पेक्षा जास्त किंवा 100.4° F पेक्षा जास्त), सर्दी, खोकला, श्वास घ्यायला त्रास , छातीत दुखणे	राज्य किंवा राज्याबाहेरून आलेले स्थलांतरित	कोविड हॉस्पिटलला पाठवावे. प्रयोगशाळा चाचणी करावी. प्रोटोकॉलनुसार उपचार करण्यात यावेत.
		स्थानिक रुग्ण / बाधित रुग्णाचा संपर्क नाही	

* बाधित रुग्णाच्या संपर्कातील व्यक्तींबाबत कॉन्टॅक्ट ट्रेसिंग सूचनांनुसार योग्य ती कार्यवाही करावी.

SpO2 - 90% पेक्षा खाली असणा-या व्यक्ती इतर कोणतीही लक्षणे नसली तरीही त्वरीत कोवीड रुग्णालयात संदर्भित करावे.

संशयीत कोवीड 19 रुग्णांना 108 रुग्णवाहिकेद्वारे संदर्भित करावे.

याबरोबरच SARI चे रुग्ण आढळून आल्यास त्यांना त्वरीत लक्षणानुसार DCH च्या ठिकाणी संदर्भित करावे. SARI ची लक्षणे पुढील प्रमाणे:

१. वय १५ वर्षांपेक्षा जास्त
२. तापाचे लक्षण किंवा इतिहास
३. कोणतेही एक श्वसनाचे लक्षण (खोकला, श्वसनाचा त्रास)
४. रुग्णालयात दाखल करण्याची गरज

वैद्यकीय अधिका-यांसाठी स्वसंरक्षण -

वैद्यकीय अधिका-यांनी रुग्णतपासणी करताना N95 Mask चा वापर व फेस शिल्ड वापरावे. तसेच यापूर्वी दिलेल्या मार्गदर्शक सूचनांनुसार (मा. प्रधान सचिव, सार्वजनिक आरोग्य विभाग, मुंबई यांचे पत्र क्र. न्यायिक 2020 / प्र.क्र.58/आ-5, दिनांक 23/4/2020) Tab. HCQ सुरु कराव्यात.

(३) पायाभूत सुविधा आणि तयारी:

कोविड १९ संशयित तसेच बाधित रुग्णांसाठी प्रत्येक तालुक्यामध्ये पुढील सुविधा उपलब्ध करण्यात याव्यात.

- प्रत्येक तालुका स्तरावर किमान एक कोविड निगा केंद्र (कोविड केअर सेंटर) कार्यरत असणे आवश्यक आहे. CCC ही तालुक्यातील शाळा, होस्टेल, वापरात नसलेल्या शासकीय इमारतीमध्ये असावी.
- तालुक्याची भौगोलिक परिस्थिती तसेच रुग्णांची संख्या लक्षात घेऊन आवश्यकतेनुसार तालुक्यातील जास्त लोकसंख्या असणा-या गावांमध्ये देखील एक कोविड निगा केंद्र (कोविड केअर सेंटर) निश्चित करण्यात यावे.
- ज्या जिल्ह्यामध्ये कोविड रुग्ण अत्यल्प आहे तिथे स्थानिक निकड, भौगोलिक परिस्थिती आणि लोकसंख्या लक्षात घेऊन २ किंवा ३ तालुक्यात एक असे कोविड निगा केंद्र सुरु करावे.
- कोविड निगा केंद्र (कोविड केअर सेंटर) सुरु करण्यासाठी आपल्या विभागातील खाजगी रुग्णालयांचे तसेच ग्रामीण भागातील वैद्यकीय महाविद्यालयांचे देखील सहकार्य घ्यावे. ग्रामीण भागात अनेक ठिकाणी होमिओपॅथी अथवा आयुर्वेदिक वैद्यकीय महाविद्यालयांची रुग्णालये आहेत त्यांच्याशी समन्वय साधावा. प्रत्येक CCC च्या ठिकाणी आयुष डॉक्टर, एनएम round the clock उपलब्ध असाव्यात. तसेच याठिकाणी Infrared thermometer, Pulse Oxymeter आणि ऑक्सीजन उपलब्ध असावे. याबाबतच्या मार्गदर्शक सूचना यापूर्वीच शासन पत्र दिनांक २४/४/२०२० नुसार देण्यात आल्या आहेत.

- याबरोबरच HWC, PHC व ग्रामीण रुग्णालय याठिकाणी प्रत्येकी अनुक्रमे १, ३ व ५ Pulse Oxymeter व Infrared Thermometer तसेच ऑक्सीजन सिलेंडर उपलब्ध करून द्यावेत. ज्या संस्थांमध्ये यांची उपलब्धता नाही त्या ठिकाणी रुग्ण कल्याण समितीच्या निधीमधून विहित पध्दतीचा अवलंब करून Pulse Oxymeter, Infrared thermometer आणि ऑक्सीजन सिलेंडर उपलब्ध करून घ्यावे.

(४) अतिजोखमीच्या व्यक्तींचे विशेष सर्वेक्षण :

कोविड १९ संदर्भात अति जोखमीच्या व्यक्तींच्या सर्वेक्षणातून प्राधान्याने आरोग्य सेवा आवश्यक असणारे लाभार्थी वेळेत ओळखणे शक्य होणार आहे. या करिता खालील समूह गटांचे विशेष सर्वेक्षण करून त्यांचे साप्ताहिक संनियंत्रण करण्यात यावे:

- असंसर्गजन्य आजाराचे रुग्ण (मधुमेह, उच्च रक्तदाब इ.)
- नियमित डाएलिसिसवर असणारे रुग्ण
- श्वसनसंस्थेचे जुनाट आजार (COPD), कर्करोग, आत्यंतिक स्थूलत्व असणा-या तसेच इतर अतिजोखमीचे आजार असणा-या व्यक्ती
- क्षय रोगी तसेच एच आय व्ही बाधित व्यक्ती
- ६० वर्षांवरील आणि अतिजोखमीचे आजार असणा-या व्यक्ती
- कामासाठी या भागात स्थलांतरित झालेले समूह

या अतिजोखमीच्या व्यक्तींची तपासणी सुरुवातीला वैद्यकीय अधिका-यांकडून करून घेण्यात यावी. त्या नंतर स्थानिक आरोग्य कर्मचा-याने त्यांचे साप्ताहिक मॉनिटरिंग करावे.

या सर्व अतिजोखमीच्या व्यक्तींची यादी प्रत्येक गावनिहाय उपलब्ध असावी व त्यांचा नियमित पाठपुरावा आशा/अंगणवाडी सेविका/एएनएम तसेच आरोग्य सेवा (पु) यांनी करावा.

मधुमेह व उच्च रक्तदाब असलेल्या रुग्णांना ३ महिने पुरेल एवढी औषधे देण्यात यावीत.

(५) आजारी व्यक्तींना वेळीच औषधोपचार

एएनएम / एमपीडब्लू यांनी दैनंदिन घरभेटीचे वेळी प्रत्येक घरामध्ये तापाचे रुग्णांची चौकशी करावी. तापाचा रुग्ण असल्यास प्रवास, स्थलांतर, कोविड पॉझिटीव्ह व्यक्तीशी संपर्क याबाबत खात्री करावी व त्यानुसार रुग्णास संदर्भित करावे. आशांनी त्यांच्या कार्यक्षेत्रात दररोज 1 वेळा ताप, खोकला, घसा खवखवणे, दम लागणे अशा व्यक्तीबाबत चौकशी करावी. अशी व्यक्ती आढळल्यास त्यांना त्वरीत CCC येथील Fever Clinic ला संदर्भित करावे.

(६) संदर्भ सेवा नियोजन:

प्रा.आ.केंद्र /उपकेंद्र/ गावपातळीवरील कोविड-१९ रुग्णांना संदर्भित करणेसाठी संदर्भसेवा आराखडा (Referral Plan) तयार करणेत यावा.

- वैद्यकीय अधिकारी यांनी रुग्णांचे वरील तक्त्यानुसार वर्गीकरण करावे.
- वर्गीकरणानुसार रुग्णांना कोविड केअर सेंटर (CCG), डेडिकेटेड कोविड हेल्थ सेंटर (DCHC) व डेडिकेटेड कोविड हॉस्पिटल (DCH) येथे संदर्भित करणे.
- संदर्भित करणेपूर्वी वैद्यकीय अधिकारी यांनी संबंधित सेंटरला पूर्व कल्पना द्यावी.
- संदर्भित करताना प्रा.आ.केंद्राच्या रुग्णवाहीकेचा वापर करावा व शासनाचे निर्देशानुसार रुग्णांना संदर्भित करावे व वाहनांचे निर्जुतकीकरण मार्गदर्शक सूचनांनुसार करावे.
- खाजगी रुग्णवाहिकांशी समन्वय साधून त्यांनाही संदर्भ सेवा नियोजनात सहभागी करावे.

(७) आरोग्य शिक्षण व लोकसहभाग:

- प्रा.आ.केंद्र / उपकेंद्र / गावपातळीवर दर्शनी भागामध्ये कोविड-१९ संदर्भात बॅनर /पोस्टर लावणेत यावेत.
- आशा/ आरोग्य कर्मचारी यांचेमार्फत या आजाराबाबत सर्व लोकांना माहिती देणेत यावी.
- आवश्यकतेनुसार सोशल मिडीयाचा वापर करणेत यावा. सरपंच, पंचायत राज व्यवस्थेतील पदाधिकारी यांच्यासाठी छोटे, सुलभ सोशल मिडिया मेसेजेस तयार करण्यात यावेत.
- कोविड १९ संदर्भात लोकांच्या मनात भेदभावाची भावना असू नये तसेच जनतेने संशयित अथवा बाधित रुग्णाला अथवा त्याच्या कुटुंबाला वाळीत टाकू नये, या करता लोकप्रबोधन करणे.
- कोविड १९ उपचारासाठी महात्मा फुले जन आरोग्य योजनेमार्फत जनतेला ज्या सुविधा पुरविण्यात येत आहेत याबाबत विविध माध्यमांद्वारे जनतेचे प्रबोधन करावे.

(८) रुग्ण कल्याण समिती बैठक:

प्रा.आ.केंद्र तसेच ग्रामीण रुग्णालयाच्या रुग्ण कल्याण समितीची बैठक आयोजित करणेत यावी. सदर बैठकीमध्ये खालील मुद्यावर चर्चा /निर्णय घेणेत यावेत.

- प्रा.आ.केंद्र अंतर्गत तसेच तालुक्यातील रुग्णांची सद्यःस्थिती
- CCC /Quarantine सुविधा आवश्यकतेनुसार निश्चित करणे.
- कंटेनमेंट झोन बाबत आढावा, आढळून येणारे SARI/ILI रुग्ण
- औषधेसाठा /साधनसामुग्री उपलब्धता.

- रुग्णवाहिकेची (Ambulance) उपलब्धता व अतिरिक्त आवश्यकता.
- संदर्भ सेवा नियोजन - तालुक्यातील कोणत्या प्रा. आ. केंद्रातील संशयित रुग्ण कोणत्या केंद्राकडे संदर्भित करावयाचे याचे भौगोलिक परिस्थिती नुसार नियोजन आणि रुग्ण वाहिकांची सोय

(९) प्रशिक्षण आणि क्षमता संवर्धन:

कोविड १९ च्या अनुषंगाने वैद्यकीय अधिकारी, आरोग्य कर्मचारी, खाजगी डॉक्टर्स, अंगणवाडी सेविका, आशा, स्थानिक शिक्षक यांचे आवश्यकतेप्रमाणे प्रशिक्षण घेण्यात यावे. खाजगी डॉक्टरांचा आवश्यक तिथे सहभाग घेण्यात यावा. अशा प्रशिक्षणांमध्ये स्थानिक स्वयंसेवी संस्था, युवक मंडळे, राष्ट्रीय सेवा योजना आदींना सहभागी करून घ्यावे. यामुळे मनुष्यबळाच्या कमतरतेवर प्रभावीपणे मात करता येईल.

रुग्ण कल्याण समिती सदस्यांकरिता कोविड १९ संदर्भातील प्रबोधन आवश्यक आहे. तसेच त्यांच्यासाठी कोविड १९ विषयी माहितीपत्रक तयार करण्यात यावे. ज्या तालुक्यांमध्ये लोकाधारित आरोग्य सेवा देखरेख व नियोजन प्रकल्प सुरु आहे तिथे अशा प्रशिक्षणासाठी या प्रकल्पांमधील स्वयंसेवी संस्थांचे सहकार्य घ्यावे.

(१०) आंतरविभागीय समन्वय (Co-ordination):

प्रा.आ.केंद्र तसेच उपकेंद्र व गावपातळीवर शिक्षण, महिला व बालकल्याण, महसूल, ग्रामविकास यांचेशी समन्वय साधून शिक्षक, अंगणवाडी कार्यकर्ती, ग्रामसेवक, तलाठी यांचे सहकार्य खालील बाबींसाठी घेण्यात यावे.

- रुग्ण शोधणे, रुग्णांचा पाठपुरावा करणे
- निकटसहवासितांचा शोध
- औषधोपचारासाठी मदत घेणे
- संदर्भ सेवेसाठी मदत घेणे
- अलगीकरण कक्षातील सुविधा
- आरोग्य शिक्षण आणि जनतेचे प्रबोधन

(११) अबाधित नियमित आरोग्य सेवा :

यापूर्वी संचालक आरोग्य सेवा, पुणे यांचे पत्र दिनांक २८/५/२०२० नुसारी दिलेल्या सूचनांनुसार Non Covid services चे नियोजन करावे. Containment Zone, Buffer व इतर कार्यक्षेत्राच्या अनुषंगाने यापूर्वी दिलेल्या मार्गदर्शक सूचनांनुसार आरोग्य सेवा देण्यात याव्यात.

- प्रा.आ.केंद्र तसेच अंतर्गत सर्व नियमित आरोग्य सेवा सुरळीत चालू ठेवणेत यावेत.
- माता - बाल संगोपन विषयक सर्व राष्ट्रीय कार्यक्रम कोणतीही अडचण न येता सुरु राहतील, याची खात्री करावी.
- नियमित लसीकरण सत्रे सुरु ठेवावीत.
- इतर सर्व रोग नियंत्रण कार्यक्रम नेहमीप्रमाणे सुरु ठेवावेत.

तालुका आरोग्य अधिकारी, वैद्यकीय अधिक्षक, यांची जबाबदारी:-

प्रत्येक तालुक्यातील गावनिहाय रुग्ण, त्यांचे geographical mapping, CCC सुविधा, रुग्णवाहिकांची उपलब्धता, रुग्णांचे Contact tracing, Containment zones याबाबतचे नियोजन करावे. यासाठी तालुक्यातील रुग्णालयाच्या वैद्यकीय अधिक्षकांशी समन्वय साधावा. तालुक्यातील सर्व वैद्यकीय अधिकारी, कर्मचारी, आशा, अंगणवाडी कार्यकर्ती यांचे प्रशिक्षण आयोजित करावे.

Pradeep Vy -
(डॉ प्रदीप व्यास)
12/6/2020
प्रधान सचिव, महाराष्ट्र शासन

प्रत रवाना:

१. आयुक्त, आरोग्य सेवा तथा अभियान संचालक, राआअ, मुंबई.
२. संचालक आरोग्य सेवा, मुंबई / पुणे
३. उप संचालक, आरोग्य सेवा, आरोग्य मंडळ... (सर्व)

**Fixation of rate for conducting
RtPCR Covid-19 test in NABL &
ICMR approved private laboratories**

GOVERNMENT OF MAHARASHTRA

Public Health Department,
G.T. Hospital Compound, 10th Floor,
Mantralaya, Mumbai-400 001

No. Corona-2020/C.R.123/Arogya-5, Date: 13 June, 2020.

- Ref: 1) ICMR's D.O letter No. ECD/COVID-19/MISC/2020, dated 25.05.2020
2) Public Health Department, GOM, Government Resolution No. Corona-2020/C.R.123/Arogya-5, dated 02.06.2020

ORDER


The Covid-19 pandemic not only presents a public health Crisis but also imposes a great financial hardship on most of the vulnerable population. Presently in Maharashtra there are 53 Government laboratories which are mostly in the Medical colleges, State Government Hospitals and institutions and 43 private laboratories which are NABL accredited and approved by ICMR for testing the samples for Covid-19. As per ICMR circular issued on 17th March, 2020, RtPCR testing for Covid-19 was made available through private laboratories and upper limit of single test charge was capped at Rs 4500/-. Meanwhile RtPCR testing kits are now being manufactured in India and are readily available and hence ICMR vide letter dated 25th May, 2020 has communicated to States to negotiate and fix mutually agreeable price for RtPCR tests for Covid-19.

2. Hence vide Government resolution dated 2nd June, 2020 a committee was constituted to fix the rate for RtPCR test in the State of Maharashtra for Covid-19 to be done in the private laboratories. The committee discussed the issue with private laboratories and submitted its report to the Government. Based on the report State Government exercising the powers bestowed under the Epidemic Act, 1897 directs that no private laboratory should charge any amount more than indicated below for RtPCR test for Covid-19 in the State of Maharashtra.

Sr No.	Particulars	Rates per test (in Rs.)
1	Pickup of sample from collection site, Transportation and Reporting (including all charges)	2200/-
2	Collection of sample from patient's residence / Health care facility, Transportation & Reporting (including all charges)	2800/-

- i. All the testing protocols as laid down by ICMR and the Government of India from Time to Time shall be followed by the Private laboratories.
- ii. The Private Laboratories shall share the data pertaining to the results of these tests for Covid-19 with state Government and ICMR on a real time basis through ICMR portal (cvanalytics). Any violation of the same shall lead to suspension or cancellation of permission to carryout RtPCR Tests.
- iii. All the private NABL & ICMR approved Labs are instructed that, information of the patients should be maintained with utmost confidentiality. All the private Covid-19 testing labs must preserve the RtPCR machine generated data and graphs for future verification by the State Government. The labs are also instructed to display the rates in visible manner.
- iv. The management of approved private lab should appoint a Nodal Officer from their side and submit their details to the concerned Municipal Commissioner and/or district Collectors.
- v. Municipal Commissioner & District Collectors should develop mechanism to collect the samples of the eligible person as per the prevalent testing criteria and also should appoint a Nodal Officer for smooth operation
- vi. Concerned authorities (if applicable in case of certain Municipal Corporation/ Districts) shall expedite processing of the pending bills of private laboratories.
- vii. All the private NABL & ICMR approved labs, in the state are directed to follow the above guidelines scrupulously.
- viii. All the District collectors and Municipal commissioners in the state shall monitor the above labs closely, enforce the rates strictly by giving wide publicity on the issue of Covid-19 tests by the Private NABL & ICMR approved labs in the state.
- ix. The new revised rates would be effective from 14th June, 2020.

By Order and in the Name of the Governor of Maharashtra


Dr. Pradeep Vyas
Principal Secretary

Copy to:

Chief Secretary, Government of Maharashtra.
Additional Chief Secretary to Chief Minister, Government of Maharashtra.
Secretary to Dy. Chief Minister, Government of Maharashtra
Private Secretary to Health Minister, Government of Maharashtra
Secretary, Department of Medical Education and Drugs, Ministry, Mumbai
Commissioner, Health Services and Director, National Health Mission, Mumbai
District Collector (All)
Municipal Commissioner (All)
Chief Executive Officer, Zilla Parishad (All)
Director, Health Services, Mumbai and Pune

GOVERNMENT OF MAHARASHTRA

No.- Corona-2020/CR No.58/Aa-5

Public Health Department
G T Hospital Complex Building
10th Floor, Mantralaya, Mumbai-1
psec.pubhealth@maharashtra.gov.in

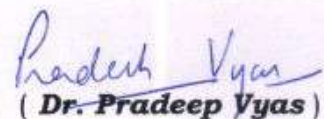
Date : 13.06.2020

To,
District Collector (All)
Municipal Commissioner (All)

Hon'ble Supreme Court of India took Suo Motu cognizance of treatment of Covid-19 patients and Dignified handling of Dead bodies in the hospitals on 12.06.2020 and has registered a Suo Motu Writ Petition (Civil) No. 7 of 2020 and an affidavit is required to be filed by Chief Secretary before the next date i.e. 17.06.2020.

Affidavit has to state the status of patients management, details of staff, infrastructure, etc. Hence all District Collectors and Municipal Commissioners are directed to update all details pertaining to infrastructure & facilities in the Covid-19 portal of Government of India latest by **14.06.2020**, so the details could be picked up from dashboard. Also all the District Collectors and Municipal Commissioners should update **Patient Outcome Dashboard** in Positive Case Management Module of Covid-19 portal by 14.06.2020, as otherwise it is not possible to arrive at correct number of deaths and Active Cases in the Districts / Municipal Corporations.

Incorrect and incomplete data spoils the image of State of Maharashtra and any failure to upload / update data by 14.06.2020 shall be viewed very seriously.


(**Dr. Pradeep Vyas**)

Principal Secretary,
Public Health Department

Copy to -

1. Chief Secretary, Government of Maharashtra.
2. Commissioner Health cum Mission Director, NHM, Mumbai
3. Director Health Services, Pune / Mumbai
4. All Circle Deputy Director



सत्यमेव जयते

प्रोफेसर (डा.) बलराम भार्गव, पदम श्री

एमडी, डीएम, एफआरसीपी (जी.), एफआरसीपी (ई.), एफएसीसी,
एफएएचए, एफएएमएस, एफएनएस, एफएएससी, एफ.एन.ए., डी.एस.सी.

सचिव, भारत सरकार

स्वास्थ्य अनुसंधान विभाग

स्वास्थ्य एवं परिवार कल्याण मंत्रालय एवं

महानिदेशक, आई सी एम आर

Prof. (Dr.) Balram Bhargava, Padma Shri

MD, DM, FRCP (Glasg.), FRCP (Edin.),
FACC, FAHA, FAMS, FNASc, FASc, FNA, DSc

Secretary to the Government of India

Department of Health Research

Ministry of Health & Family Welfare &

Director-General, ICMR

Subject: **National COVID-19 sero-survey**

Dear **Dr. Vyas**,

I thank you and officials from your administration for extending the support for completing the sero-survey to estimate the sero-prevalence SARS-CoV-2 infection in your state. We have completed the testing of sera samples collected from different districts. The result of IgG positivity by district is given below:

District	Number of samples tested	Number positive	Unweighted prevalence (%)
Bid	396	4	1.01
Parbhani	396	6	1.51
Nanded	393	5	1.27
Sangli	400	5	1.25
Ahmadnagar	404	5	1.23
Jalgaon	396	2	0.5

Testing of hotspot cities is still ongoing and we will share the results once testing is complete.

Thank you once again to you and officials from your administration for the support in the conduct of the sero-survey. We look forward to your continued support in the next round of sero-survey.

With regards,

Yours sincerely,

Balram Bhargava

(Balram Bhargava)

Dr. Pradeep Kumar Vyas

Principal Secretary,

Department of Health & Family Welfare,

Government of Maharashtra,

Mumbai – 400001, Maharashtra.

Copy to :

1. The Director, ICMR-National Institute of Virology, Pune
2. The Director, ICMR - National AIDS Research Institute, 73 'G' Block, MIDC, Bhosari, Pune 411026
3. The Director, ICMR-National Institute of Immunohaematology, Mumbai, Maharashtra
4. Dr SampadaBangar, Scientist D, National AIDS Research Institute
5. Dr AvinashDeoshatwar, ICMR-National Institute of Virology, Pune
6. Dr.Reetika Malik Yadav, Scientist B, ICMR National Institute of Immunohaematology (NIIH), Mumbai



भारत सरकार
स्वास्थ्य एवं परिवार कल्याण मंत्रालय
निर्माण भवन, नई दिल्ली - 110011
Government of India
Ministry of Health & Family Welfare
Nirman Bhavan, New Delhi - 110011

Rajesh Bhushan, IAS
Officer-on-Special Duty
Tel # 2306-3206 / 2306-3230
Email: osdh-mohfw@gov.in

D.O. No.7(23)/2020-NHM-I
13th June 2020

Dear Dr. Vyas,

Ministry of Health and Family Welfare (MoHFW) is facilitating the public health response of States/UTs to manage COVID-19 pandemic. In this context, it is critical to focus on key action areas and take required preventive actions. I request your kind attention to my previous letter in this regard dated 3rd June 2020.

The district-wise analysis for your State is enclosed. Indicators shown in red are the ones that require immediate action. For each such district, you must (a) identify the root-causes of the issues flagged, (b) implement the remedial actions and (c) continuously monitor improvement of these metrics.

Some of the key highlight and points are as under:

- 1) **Higher case fatality**, 7 out of 10 most affected districts have CFR higher than the State average. In these districts, there is a need to focus on efficient clinical management of the cases and early detection.
- 2) **Higher confirmation rate** in some districts compared to national average, indicating need for ramping up the testing in these districts.
- 3) **Top 5 districts** in terms of caseload contributes **87% of State's case load**, suggesting a localized infection, therefore, a need for aggressive containment strategy in these districts.
- 4) **6 districts** witnessed a **very high surge** in last 14 days i.e., Sindhudurg, Osmanabad, Parbhani, Jalna, Bhandara and Jalgaon (% increase in case load ranging from 63% – 85%).
- 5) Focus on infrastructure readiness, among the top 10 affected districts, **6 districts may witness shortage of beds** and ventilators by end of June 2020.
- 6) **Low adoption rate** and low % of updated records (~62%) on the **facility app**.

Additionally, MoHFW recommends undertaking the following practices for effective COVID management:

1. Analyzing the case growth and trends

- a) Regularly use State Analysis dashboard on COVID19 India Portal to take key decisions on:
 - Case monitoring
 - Testing
 - Health system preparedness

.....contd/-

- b) Use of data from Aarogya Setu Dashboard to predict and analyze caseload and containment zones

2. Health system preparedness

- a) Ensuring Centralized Management System in bigger cities to track bed occupancy and ensuring availability of adequate information in public domain regarding infrastructure availability (e.g. by means of an State dashboard or portal or App) and assigning senior officials as supervisors for large hospitals to ensure that there is no denial of services and prompt allocation of beds.
- b) Strengthen the helpline at the District / State level to provide up-to-date and real time information on all aspects of COVID19 management in the State including ambulance availability, Beds availability and ICU availability.
- c) Augment the capacity of Oxygen supported beds and ICU beds in the COVID Dedicated facilities including the temporary makeshift facilities.
- d) Specific treatment initiatives to ensure **lower fatality rate** e.g. prioritizing hospitalization for co-morbid / elderly patients, timely referrals on escalation of symptoms, improving clinical practices via Centers of Excellence, providing on-call specialist care, tele-ICU, etc.
- e) Increasing the fleet size of ambulances and centrally managing their deployment with a strong call center-based management and grievance redressal mechanism.
- f) Effective Triaging in the hospitals: Triaging in the identified health facilities should be done effectively so that no patient needs to wait inordinately in the triaging area.

3. Effective Clinical Management

- a) State should develop State specific clinical protocol for COVID19 management and should disseminate to all the COVID19 Hospitals.
- b) State should constitute a Group of Expert Doctors, which will provide necessary technical advice to the doctors and other health professionals managing the COVID19 cases in the State especially through Tele-ICU and Tele-Consultation mode.
- c) State can designate existing AIIMS or Medical College in the State as Centre for Excellence for providing the technical guidance on the COVID19 management and the Group of Expert Doctors constituted by the State can be positioned here to provide technical advice.

4. Aggressive surveillance and testing with adequacy and quality

- a) Ensure full utilization of testing capacity (both public and private) in the state with low turnaround time
- b) Aggressive household surveillance to ensure contact tracing
- c) Focus on the containment zones and surveillance operations are to be implemented fully so that the number of new cases in the Containment Zones should taper at the earliest.
- d) Focus on monitoring of co-morbid / immune-compromised and **early diagnosis** to prevent critical cases

.....contd/-

5. Ensuring data quality and regular update

- a) Regularly update data on COVID19 India Portal and Facility App
- b) Regularly update the containment zone wise details on COVID19 India Portal

6. Extensive IEC to spread awareness

- a) Focus on extensive IEC to promote specific preventive care measures – e.g., media campaigns encouraging co-morbid patients/ elderly to monitor their health and wellness, social distance, wearing of masks, no spitting in public places, etc.

I urge you to focus on these interventions for ensuring a complete end-to-end management of cases encompassing surveillance, testing, clinical management and referrals.

Regards .

Yours sincerely,



(Rajesh Bhushan)

Dr. Pradeep Kumar Vyas
Principal Secretary,
Health and Family Welfare
Govt. of Maharashtra
Mumbai

Copy to:

- Commissioner & Mission Director-NHM, Govt. of Maharashtra, Mumbai
- JS (Public Health) and JS RCH
- Sr.PPS to Secretary HFW / PPS to AS (H)/ PPS to AS&MD / PPS to JS(Policy)

Annexure

1. Maharashtra - District Wise COVID-19 case Analysis as on 10th June 2020

	Total Cases	Active Cases	Deaths	Case fatality rate (%)	Doubling rate	Tests per million	Confirmation %
India	273,869	141,477	7,945	2.90%	17.3	3,525	5.60%
Maharashtra	92,641	45,273	3,412	3.70%	20.8	4,215	16.60%
10 Most Affected Districts in State							
Mumbai	52,728	27,694	1,857	3.50%	25.4	9,838	26.80%
Thane	14,655	8,570	379	2.60%	15.9	5,210	23.30%
Pune	9,408	2,890	439	4.70%	21	9,028	10.10%
Palghar	1,784	1,095	45	2.50%	13.5	2,158	25.30%
Aurangabad	2,075	675	117	5.60%	16.8	3,334	15.40%
Solapur	1,423	659	110	7.70%	12.7	2,248	13.40%
Jalgaon	1,249	587	121	9.70%	9.3	2,188	12.30%
Nashik	1,633	445	81	5.00%	14.3	2,299	10.60%
Akola	874	358	37	4.20%	15.6	3,180	13.90%
Raigad	1,503	326	62	4.10%	19.1	3,012	17.30%

Assumption : *-Doubling rate is calculated on last 7 days trajectory as per the data fed by the States on the portal

2. Maharashtra - Infra Gap Analysis (Summary) from 12th June to 30th June (3 weeks) based on historical trend as on 12th June 2020

S. N o.	District	Cumulative cases	Projected Cases (30 th June)	Current Infrastructure				Required Infrastructure (by 30 th June)			
				Iso. Bed without O ₂	Iso. Bed with O ₂	ICU Bed	Ventilator	Iso. Bed without O ₂	Iso. Bed with O ₂	ICU Bed	Ventilator
1	Mumbai	54,146	81,701	79,123	14,188	1,423	747	19,428	2,286	1,143	571
2	Thane	15,614	32,000	26,078	4,066	883	315	11,929	1,403	702	351
3	Pune	9,884	16,739	17,140	2,743	929	400	4,827	568	284	142

S. N o.	District	Cumulative cases	Projected Cases (30 th June)	Current Infrastructure				Required Infrastructure (by 30 th June)			
				Iso. Bed without O ₂	Iso. Bed with O ₂	ICU Bed	Ventilator	Iso. Bed without O ₂	Iso. Bed with O ₂	ICU Bed	Ventilator
4	Palghar	1,888	4,639	3,616	1,597	182	85	2,027	238	119	60
5	Aurangabad	2,208	4,438	8,188	1,332	203	116	1,571	185	92	46
6	Solapur	1,518	3,052	9,730	844	436	131	1,055	124	62	31
7	Jalgaon	1,327	4,085	10,693	584	115	57	1,919	226	113	56
8	Raigad	1,675	3,240	12,970	474	206	81	1,105	130	65	32
9	Nashik	919	1,721	1,691	241	94	41	572	67	34	17
10	Akola	1,564	2,566	3,869	442	125	31	708	83	42	21

Assumptions for Infra Analysis

- Growth Rate in the last 7 days is considered for projections
- Average length of stay and ratio of hospitalization in isolation without oxygen, with oxygen and ICU bed is 85:10:5. Fatality is district specific unless states otherwise

प्रो. (डॉ.) राजीव गर्ग
स्वास्थ्य सेवा महानिदेशक
PROF. (DR.) RAJIV GARG
MD (Ophth.) AIIMS
Director General of Health Services



भारत सरकार
स्वास्थ्य एवं परिवार कल्याण मंत्रालय
स्वास्थ्य सेवा महानिदेशालय
निर्माण भवन, नई दिल्ली -110 108
Government of India
Ministry of Health & Family Welfare
Directorate General of Health Services
Nirman Bhawan, New Delhi- 110 108
Tel.: 23061063, 23061438 (O), 23061924 (F)
Email: dghs@nic.in

D.O. No. Z.28015/131/2020-EMR

दिनांक/Dated.....
14.06.2020

Dear Shri Dev,

Please refer to the issue raised regarding deaths of suspect covid patients and dead bodies not being handed over to the relatives pending confirmation of test report by the hospitals.

I would like to clarify that the dead bodies of such suspected COVID cases should be handed over to their relatives immediately and laboratory confirmation of COVID should not be awaited. These bodies can as a matter of abundant precaution be disposed as per the "Guidelines on dead body management" available on the website of Ministry of Health & Family Welfare dated 15/3/2020.

If such death cases test positive eventually, then the requisite action for contact listing, tracking etc, should be carried out subsequently.

Further necessary action may be taken as per the clarification given above.

Regards

Yours Sincerely,

(Dr. Rajiv Garg)

Shri Vijay Dev, IAS
Chief Secretary
Government of NCT of Delhi

Copy to:

1. Secretary (Health), MoHFW, Govt. of India
2. OSD (Health), MoHFW, Govt. of India
3. MS, Dr. RML Hospital, New Delhi
4. MS, Safdarjang Hospital, New Delhi
5. Director, LHMC & Hospital, New Delhi

	Total Cases	Active Cases	Deaths	Case fatality rate (%)	Doubling rate	Tests per million	Confirmation %
India	245,885	129,338	7,056	2.87%	16.01	3206.69	5.5%
Maharashtra	84,583	42,795	3,035	3.59%	19.63	3626.47	16.3%
10 Most Affected Districts in State							
Mumbai+ Mum. Suburban	48,835	26,524	1,638	3.35%	23.56	9301.20	26.3%
Thane	12,949	7,782	331	2.56%	15.77	4771.29	22.4%
Pune	8,707	2,785	406	4.66%	21.14	8311.90	10.2%
Palghar	1,531	885	40	2.61%	13.33	1896.80	24.7%
Aurangabad	1,867	586	92	4.93%	16.98	3132.38	14.7%
Solapur	1,283	561	102	7.95%	11.46	2101.32	12.9%
Jalgaon	1,010	477	110	10.89%	8.67	1776.62	12.3%
Raigad	1,369	441	59	4.31%	17.41	2800.43	17.0%
Nashik	1,450	370	76	5.24%	15.21	2144.07	10.1%
Akola	770	316	33	4.29%	16.82	2976.04	13.0%

1. Doubling rate calculated based on last 7 days trajectory
2. As per the data fed by states

Maharashtra- Projected Cases & Infra Gap Analysis

Infra Capacity Gap Analysis on Projected Cases from 8th June to 30th June (3 weeks) based on historical trend

As on 7th June

S. No.	State/ District	Cumulative cases	Projected Cases (30 th June)	Date of Infra Shortage				Infra Capacity Status (by 30 th June)			
				Iso. Bed without O ₂	Iso. Bed with O ₂	ICU Bed	Ventilator	Iso. Bed without O ₂	Iso. Bed with O ₂	ICU Bed	Ventilator
1	Mumbai	48,835	96,064	✓	✓	✓	21-Jun	49,440	10,532	189	-199
2	Thane	12,949	35,581	✓	✓	✓	25-Jun	11,737	2,537	81	-84
3	Pune	8,707	18,510	✓	✓	✓	✓	9,393	2,175	615	239
4	Palghar	1,531	5,069	✓	✓	29-Jun	30-Jun	496	966	-11	-2
5	Aurangabad	1,867	4,772	✓	✓	✓	✓	6,423	1,124	99	64
6	Solapur	1,283	5,160	✓	✓	✓	✓	7,301	543	294	60
7	Jalgaon	1,010	6,357	✓	27-Jun	28-Jun	29-Jun	7,605	-107	-39	-8
8	Raigad	1,369	3,424	✓	✓	✓	26-Jun	2,617	294	51	-6
9	Nashik	1,450	4,138	✓	✓	✓	✓	11,320	280	109	33
10	Akola	770	1,986	✓	✓	✓	✓	945	153	50	19

* State Growth Rate of 7 days considered

Growth Rate of 14 days considered

✓ Indicates Bed data not running out till 30th June

Assumptions: Growth rate in the last 7 days is considered for projections, ALOS is 14 days and ratio of hospitalization in Isolation bed without O₂, with O₂ and ICU Bed is 85:10:5. Fatality district specific

COVID-19

Public Health Response

**VC with States
11th June 2020**

- **6 states constitute more than 76% of active cases**
 - Maharashtra, Tamil Nadu, Delhi, Gujarat, Rajasthan, West Bengal
- **Case fatality rate has remained flat at 2.90% (vs. 2.96% 2 weeks ago)**
 - 82% of total deaths are from 5 states (Maharashtra, Delhi, Gujarat, West Bengal, Madhya Pradesh)
 - 65 districts have more than 5% fatality rate; 19 of these districts are in Madhya Pradesh, 11 districts in Gujarat, 10 districts in Maharashtra and 10 districts in Uttar Pradesh
- **Doubling rate for India has increased to 16.9 days (vs. 14.1 days 2 weeks ago)**
 - 3 states have doubling rate lower than 7 days: Chhattisgarh, Manipur, Goa (states with less than 100 cases have been excluded)
- **Increase in confirmation rate to 5.70% (from 4.87% 2 weeks ago) – indicates either spread of infection or less testing**
 - At the state-level, 3 states have more than 10% confirmation rate (Maharashtra, Delhi and Telangana)

- **Top 30 districts account for 98,571 active cases (72% of India's active case-load)**
 - These 'epi-centers' are largely urban areas with more than 600 cases in each district
 - 23 districts are concentrated in 4 states: Delhi, Maharashtra, Tamil Nadu, West Bengal
 - In these areas **fatality mitigation is an additional urgent focus area** (beyond containment, testing etc.)
- **Beyond these epi-centers, 98 districts have been infected in the past 3 weeks**
 - **Significant spread in North-Eastern states:** 53 districts infected in last 3 weeks are from 7 north-eastern states
 - (Manipur – 12, Assam – 11, Mizoram – 9, Arunachal Pradesh – 9, Meghalaya – 5, Tripura – 4, Sikkim – 3)
 - **Significant spread in Eastern states:** 4 other eastern states account for 25 recently infected districts
 - (Chhattisgarh - 9, Odisha - 7, Jharkhand - 5, West Bengal - 4)

- **Emerging districts of concern since easing of restrictions after 18th May**
 - Defined as districts with more than 400 cases of which 50% were observed after 18th May
 - Concentration mainly in 7 states
 - Maharashtra, Rajasthan, Tamil Nadu, West Bengal, Karnataka, Jammu and Kashmir and Haryana
 - 4 districts having more than 400 cases of which 90% were observed after 18th May
 - Gurugram, Udupi, Yadgir, Kolhapur
- **Dual testing gap: Testing bottlenecks in some urban areas coupled with coverage gaps/long turnaround times for several rural areas**
 - Mumbai & Thane (Maharashtra), Chennai (Tamil Nadu) - confirmation rate >20% in both urban areas
 - Palghar (Maharashtra), Medchal Malkajgiri (Telangana) and Hojai (Assam) – confirmation rate >20% in these rural areas

- Top 14 districts i.e. Mumbai, Chennai, Thane, Ahmedabad, Pune, Chengalpattu, Gurugram, Kolkata, Hyderabad and 5 districts in Delhi account for more than **60%** (83,271 cases) **of total active caseload**

Key challenges emerging across districts

- Risk of capacity shortfall over next 1 month: Bed shortages in **17 districts** (among top 50 districts) based on forecast

State	Districts
Haryana	Gurugram
J&K	Kulgam, Kupwara
Karnataka	Udupi, Yadgir, Raichur
Maharashtra	Mumbai, Thane, Palghar, Jalgaon, Raigad

State	Districts
Rajasthan	Bharatpur
Tamil Nadu	Chennai, Chengalpattu, Thiruvallur, Tuticorin
Uttar Pradesh	Gautam Buddha Nagar

Growing case fatality rates in few districts

- **CFR more than 5% in 69 districts** (India average of 2.90%)

S. No	State	Districts	Number of Districts
1	Madhya Pradesh	Mandla, Sehore, Umaria, Mandasaur, Rajgarh, Satna, Ujjain, Hoshangabad, Burhan, Khargone, Sagar, Dewas, East Nimar, Shajapur, Ratlam, Chhindwara, Datia, Rajgarh, Tikamgarh, Agar Malwa, Jhabua	21
2	Uttar Pradesh	Lalitpur, Jhansi, Meerut, Agra, Aligarh, Gorakhpur, Firozabad, Mathura, Etah, Jalaun, Mahoba	11
3	Maharashtra	Washim, Nandurbar, Jalgaon, Dhule, Solapur, Aurangabad, Nashik, Satara, Amrawati, Wardha	10
4	Gujarat	Porbandar, Panch Mahal, Anand, Ahmedabad, Bhavnagar, Patan, Surendra Nagar, Kachchh, Bharuch	9
5	Rajasthan	Karauli, Sawai Madhopur, Pratapgarh, Jaipur, Baran	5
6	Telangana	Narayanpet, Mancherial, Nirmal	3

S. No	State	Districts	Number of Districts
7	Himachal Pradesh	Mandi, Shimla	2
8	West Bengal	Kolkata, 24 Paragnas North	2
9	Delhi	Shahdara, North-east Delhi	2
10	Haryana	Jind	1
11	Karnataka	Tumakuru	1
12	Punjab	Kapurthala	1
13	Chhattisgarh	Bastar	1

Growing testing bottlenecks

- Confirmation % is **more than 10%** for **46 districts** (India average of 5.70%)

S. No	State	Districts	Number of Districts
1	Maharashtra	Mumbai, Thane, Palghar, Aurangabad, Raigad, Pune, Solapur, Nashik, Akola, Osmanabad, Gondia, Jalgaon	12
2	Delhi	North-west, Central, South-east, East, West, North, Shahdara, South-west North-east	9
3	Telangana	Medchal Malkajgiri, Hyderabad, Rangareddy, Suryapet	4
4	Tamil Nadu	Chennai, Chengalpattu, Thiruvallur, Ariyalur	4
5	Bihar	Khagaria, Purbi Champaran, Sitamarhi, Muzaffarpur	4
6	Madhya Pradesh	Khargone, Burhanpur, Neemuch	3

S. No	State	Districts	Number of Districts
7	Uttar Pradesh	Firozabad, Chitrakoot	2
8	Assam	Hojai, Dima Hasao	2
9	Gujarat	Ahmedabad, Vadodara	2
10	Tripura	Sepahijala	1
11	Uttarakhand	Tehri Garhwal	1
12	West Bengal	Howrah	1
13	Rajasthan	Pali	1

Action Plan

- **Containment**

- Strict **perimeter control** crucial
- **Active house-to-house surveillance** through **Special Teams** critical for early identification of cases
- **Community led at scale surveillance** in highly affected districts

- **Testing and Tracing**

- In high case-load states/districts- additional testing & strict containment measures needed, need to focus on early testing of **high-risk contacts** and **clinical triaging at facilities**
- In states/districts with **low case-load / emerging hotspots**, **testing and tracing** is crucial for containment

- **Health System Upgradation**

- Ensure **sufficient hospital capacity through advance planning for next 2 months** – online tool available
- Ensure **sufficient logistics** (e.g. pulse oximeters) along with **bed capacity** and **HR** (doctors, staff nurses, non-clinical staff)
- **Institutional quarantine/isolation** increasingly critical to reduce load on health-system – need to ramp-up institutional capacity (e.g. hotels, stadiums etc.)

Action Plan

- **Fatality mitigation**

- **Preventive measures and active surveillance / testing** – especially for vulnerable population – to reduce high-risk patient count and improve speed-to-care
- **Treatment** initiatives to ensure lower fatality rate e.g. preferring hospitalization for co-morbid / elderly patients, timely referrals on escalation of symptoms, improving clinical practices via Centers of Excellence, providing on-call specialist care etc.

- **End-to-end case management**

- End-to-end management of cases is important, including surveillance, testing, treatment and referrals
- Critical to smoothen **transition points** e.g. test confirmation to hospitalization, ambulance uptime/coordination

- **Community engagement**

- Reduce stigma associated with virus and encourage health-seeking behavior, social distancing, sanitization
- Encourage care for vulnerable population along with regular monitoring of co-morbidities even in non-Covid patients

Action Plan: Fatality Mitigation

Preventive measures

to reduce the exposure of vulnerable segments to Covid-19

1. **Promote specific preventive care measures** – e.g., media campaigns encouraging co-morbid patients/ elderly to monitor their health and wellness
2. **Engage employers** to provide work-from-home / alternate working options for vulnerable population
3. **Engage RWAs** to ensure compliance with preventive measures by vulnerable populations; encourage RWAs to enable home delivery of essential services to vulnerable populations

Active surveillance and testing

to improve speed-to-care

1. **Encourage health-seeking behavior**
2. **Ensure timely testing** of co-morbid contacts and elderly contacts as high-risk
3. **Engage employers and RWAs** to improve surveillance effectiveness, especially for co-morbid and elderly population

Treatment initiatives

to improve quality of care

1. **Ensure proactive capacity planning** to ensure sufficient capacity for next 1-2 months
2. For co-morbid patients, **hospitalization preferred** over home isolation
3. **Ensure timely referrals** for patients with escalating symptoms
4. **Strengthen clinical practices** – e.g., Center of Excellence
5. Focus on **early diagnosis of complications** for immuno-compromised patients

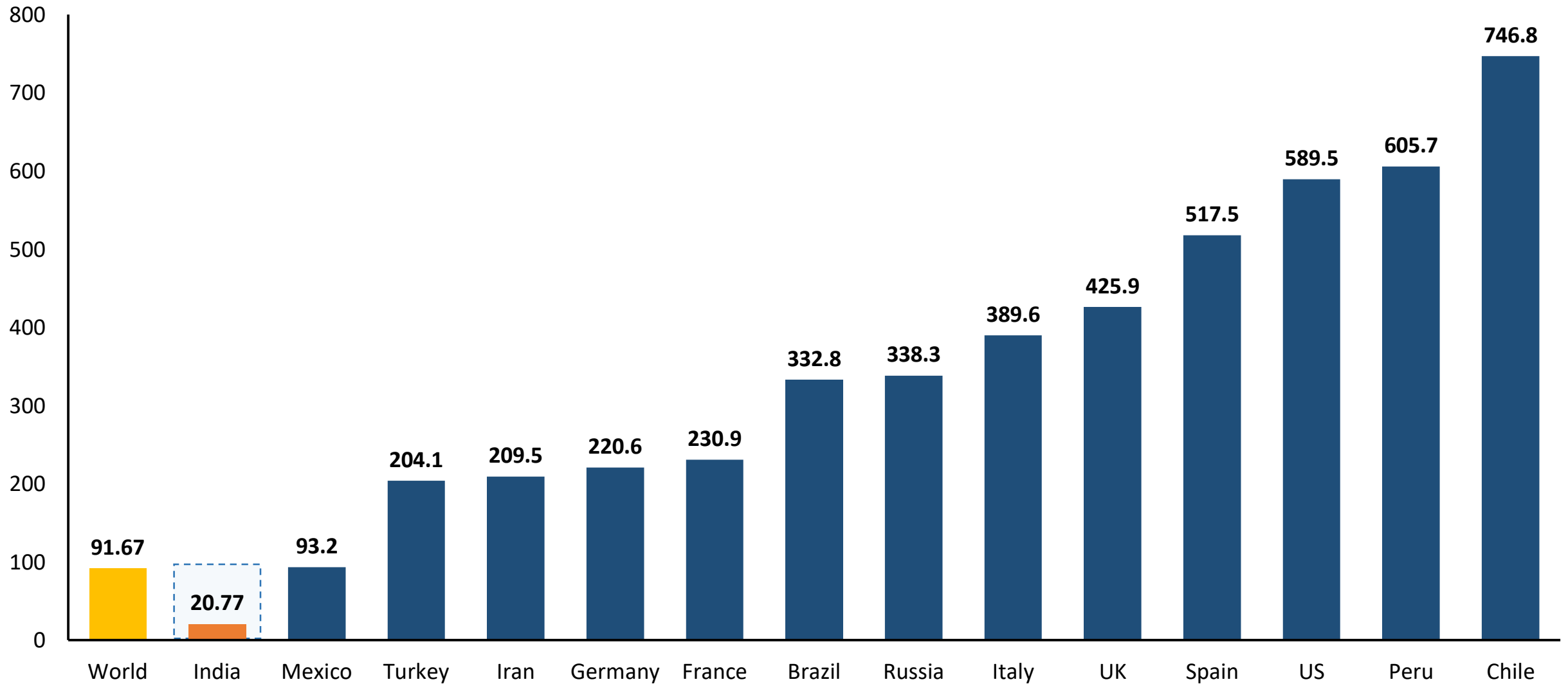
Note: Population to be considered vulnerable on the basis of both age and co-morbidities

Thanks

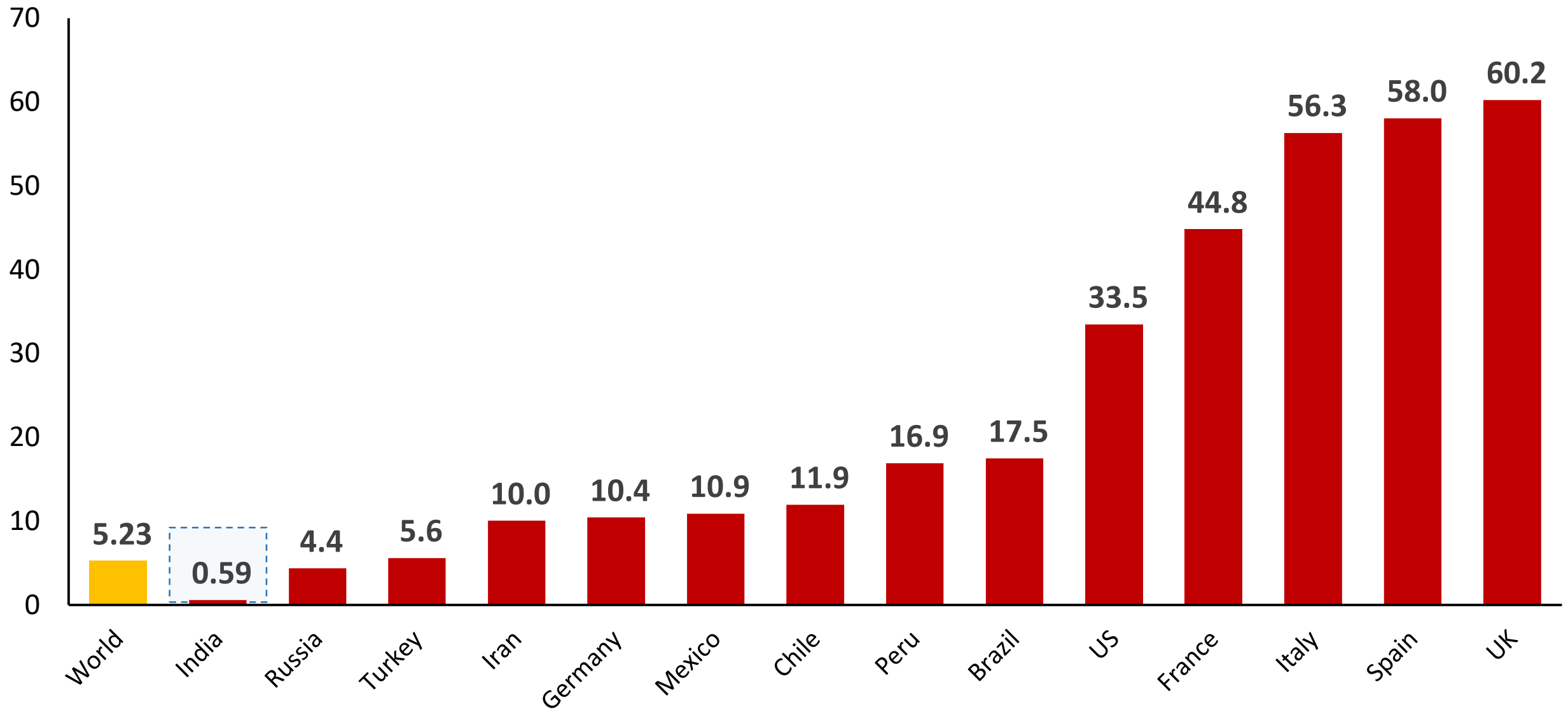
Government of India
PIB
Press Briefing

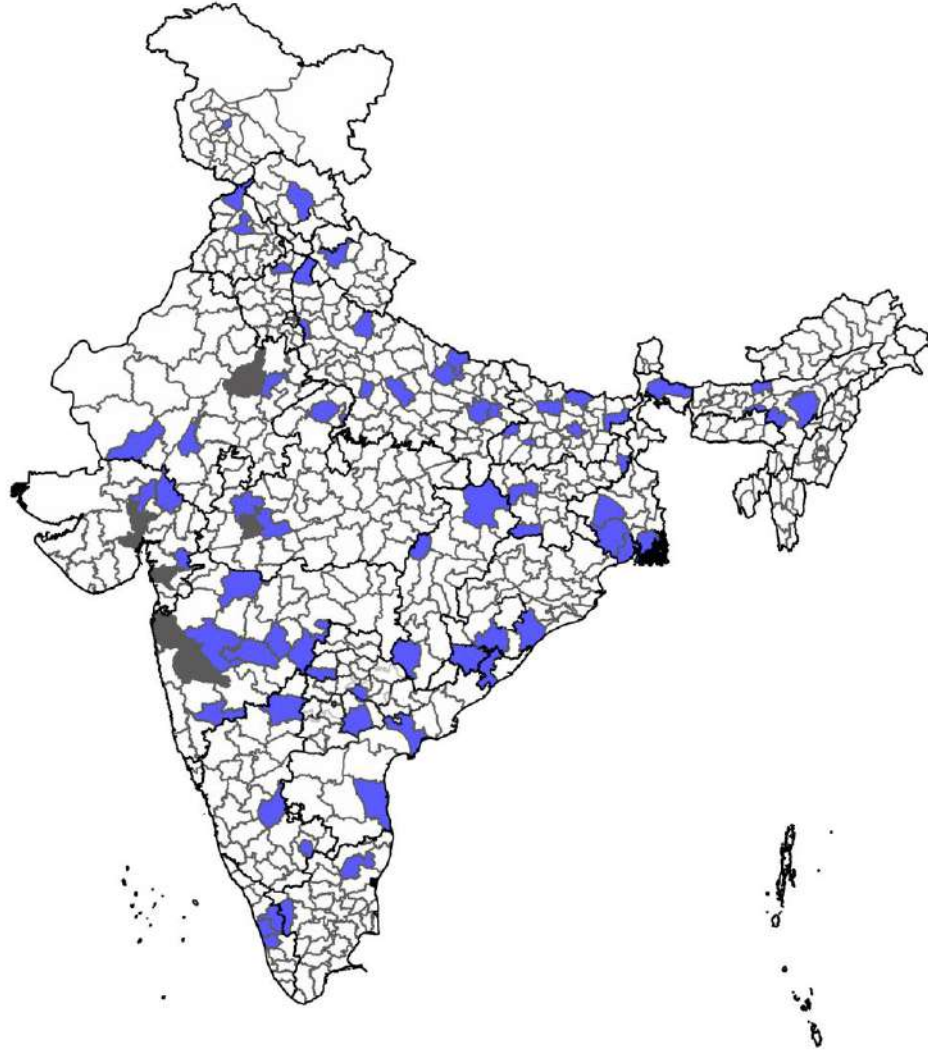
11th June 2020

Cases per Lakh Population amongst the Lowest in the World



Death per Lakh Population - Amongst the Lowest in the World





Sero-surveillance to monitor the trend of SARS-CoV-2 infection transmission

COVID serosurvey

- **What is serological survey?**
 - Blood samples collected from general population and tested for IgG antibodies
 - If a person is IgG positive, it means they were infected with SARS-CoV-2 in the past
- **Serosurveys are expected to answer the following questions**
 - What percentage of the general population has been infected by the virus?
 - Who are at higher risk of getting infection?
 - Which are the areas where containment efforts need to be strengthened?



Serosurvey for COVID

- ICMR conducted the first serosurvey in May 2020
 - In collaboration with state health departments, NCDC, and WHO India
- Serosurvey had 2 parts
 - PART I: Estimate fraction of population who has been infected with SARS-CoV-2 in **general population (COMPLETED)**
 - PART II: Estimate fraction of population who has been infected with SARS-CoV-2 in **containment zones of hotspot cities (ONGOING)**



Data and blood sample collection

- **Data collection**
 - Socio-demographic details
 - History of respiratory symptoms
 - Written informed consent and ethics clearance
- **Blood sample collection**
 - 3-5 ml of blood sample
- **Laboratory investigations**
 - Sera tested for IgG antibodies, infection using COVID KAVACH ELISA



PART I: Population based serosurvey in districts

- Districts into **four groups** based on number of reported COVID-19 cases (incidence)
 - Zero cases
 - Low incidence
 - Medium incidence
 - High incidence
- Selected minimum **15 districts from each group**
- 400 individuals from each district
 - Selected 10 villages/urban wards randomly
 - From each village/ward, enrolled 40 adults
 - Only one adult enrolled from each household



Selection of districts & individuals surveyed

Stratum	Total no. of districts	Districts selected	No. of clusters selected	No. of clusters in urban area (%)	No. of households visited **	No. of individuals enrolled ** (% response)
Zero cases*	233	15	150	16 (11.4)	5886	5614 (95.4)
Low*	229	22	220	42 (21.0)	8352	8022 (96.0)
Medium*	84	16	160	48 (32.0)	6917	5980 (86.5)
High*	190	18	180	70 (41.2)	7440	6784 (91.2)
Total	736	83	770	176 (26.7)	28,595	26400 (92.3)

*Based on incidence of reported COVID cases as on 25 April 2020

**Data for 65 districts completed



Results

- 0.73% of the population in these districts had evidence of past exposure to SARS-CoV-2
- Lockdown/containment has been successful in keeping it low & preventing rapid spread
- However, it means that a **large proportion of the population is still susceptible**
- Risk is higher in Urban (1.09); Urban Slums (1.89) times higher than rural areas
- Infection fatality rate is very low 0.08%
- Infection in containment zones were found to be high with significant variations (still ongoing)

Conclusion: Way forward...

- Since, large proportion of the population is susceptible and infection can spread
- Non Pharmacological Interventions such as physical distancing, use of face mask/cover, hand hygiene, cough etiquette must be followed strictly
- Urban slums highly vulnerable for the spread of infection
- Local lockdown measures need to continue as already advised by GOI
- High risk groups: Elderly, chronic morbidities, pregnant women & children less 10 years of age need to be protected
- Efforts to limit the scale and spread of the disease will have to be continued by strong implementation of containment strategies by the states
- The states cannot lower their guard & need to keep on implementing effective surveillance and containment strategies



Maharashtra - Key Highlight

- 1) Higher case fatality 7 out of 10** most affected districts have CFR higher than the state average. In these districts, there is a need to focus on efficient clinical management of the cases and early detection.
- 2) Higher confirmation rate** in majority (including 10 most affected) districts compared to national average, indicating need for ramping up the testing in these districts
- 3) Top 5 districts** in terms of caseload contributes **87% of state's case load**, suggesting a localized infection, therefore, a need for aggressive containment strategy in these districts
- 4) 6 districts** witnessed a **very high surge** in last 14 days i.e., Sindhudurg, Osmanabad, Parbhani, Jalna, Bhandara and Jalgaon (% increase in case load ranging from 63% – 85%)
- 5) Focus on infrastructure readiness, among the top 10 affected districts, **6 districts may witness shortage of beds** and ventilators by end of June 2020
- 6) Low adoption rate** and low % of updated records (~62%) on the **facility app**

	Total Cases	Active Cases	Deaths	Case fatality rate (%)	Doubling rate	Tests per million	Confirmation %
India	273,869	141,477	7,945	2.9%	17.3	3,525	5.6%
Maharashtra	92,641	45,273	3,412	3.7%	20.8	4,215	16.6%
10 Most Affected Districts in State							
Mumbai	52,728	27,694	1,857	3.5%	25.4	9,838	26.8%
Thane	14,655	8,570	379	2.6%	15.9	5,210	23.3%
Pune	9,408	2,890	439	4.7%	21.0	9,028	10.1%
Palghar	1,784	1,095	45	2.5%	13.5	2,158	25.3%
Aurangabad	2,075	675	117	5.6%	16.8	3,334	15.4%
Solapur	1,423	659	110	7.7%	12.7	2,248	13.4%
Jalgaon	1,249	587	121	9.7%	9.3	2,188	12.3%
Nashik	1,633	445	81	5.0%	14.3	2,299	10.6%
Akola	874	358	37	4.2%	15.6	3,180	13.9%
Raigad	1,503	326	62	4.1%	19.1	3,012	17.3%

Maharashtra- Projected Cases & Infra Gap Analysis

Infra Capacity Gap Analysis on Projected Cases from 12th June to 30th June (3 weeks) based on historical trend

As on 12th June

S. No.	State/ District	Cumulative cases	Projected Cases (30 th June)	Current Infrastructure				Required Infrastructure (by 30 th June)			
				Iso. Bed without O ₂	Iso. Bed with O ₂	ICU Bed	Ventilator	Iso. Bed without O ₂	Iso. Bed with O ₂	ICU Bed	Ventilator
1	Mumbai	52,728	81,109	77,149	13,883	1,357	710	66,514	7,825	3,913	1,957
2	Thane	14,655	29,290	26,078	4,066	883	315	24,253	2,853	1,427	714
3	Pune	9,408	15,502	17,140	2,743	929	400	12,562	1,478	739	370
4	Palghar	1,784	4,395	2,781	1,491	163	79	3,641	428	214	107
5	Aurangabad	2,075	4,088	8,188	1,332	203	116	3,278	386	193	97
6	Solapur	1,423	3,125	9,730	844	436	131	2,451	288	144	72
7	Jalgaon	1,249	4,003	10,697	580	115	57	3,073	362	181	91
8	Raigad	1,503	2,644	3,869	442	125	31	2,155	254	127	64
9	Nashik	1,633	3,555	12,970	474	206	81	2,872	338	169	85
10	Akola	874	1,783	1,691	241	94	41	1,452	171	85	43

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Revised guidelines for Home Isolation of very mild/pre-symptomatic COVID-19 cases

1. Scope

The guidelines are in addition to the guidelines on appropriate management of suspect/confirmed case of COVID-19 issued by MoHFW on 7th April, 2020.

As per existing guidelines, during the containment phase the patients should be clinically assigned as very mild/mild, moderate or severe and accordingly admitted to (i) COVID Care Center, (ii) Dedicated COVID Health Center or (iii) Dedicated COVID Hospital respectively. Guidelines for home isolation of very mild/pre-symptomatic patients were issued on 27th April 2020. The present guidelines are in supersession of the guidelines issued on 27th April 2020.

However, very mild/pre-symptomatic patients having the requisite facility at his/her residence for self-isolation will have the option for home isolation.

2. Eligibility for home isolation

- i. The person should be clinically assigned as a very mild case/ pre-symptomatic case by the treating medical officer.
- ii. Such cases should have the requisite facility at their residence for self-isolation and also for quarantining the family contacts.
- iii. A care giver should be available to provide care on 24 x7 basis. A communication link between the caregiver and hospital is a prerequisite for the entire duration of home isolation.
- iv. The care giver and all close contacts of such cases should take Hydroxychloroquine prophylaxis as per protocol and as prescribed by the treating medical officer.
- v. Download Arogya Setu App on mobile (available at: <https://www.mygov.in/aarogya-setu-app/>) and it should remain active at all times (through Bluetooth and Wi-Fi)
- vi. The patient shall agree to monitor his health and regularly inform his health status to the District Surveillance Officer for further follow up by the surveillance teams.
- vii. The patient will fill in an undertaking on self-isolation (**Annexure I**) and shall follow home quarantine guidelines. Such individual shall be eligible for home isolation.
- viii. In addition to the guidelines on home-quarantine available at: <https://www.mohfw.gov.in/pdf/Guidelinesforhomequarantine.pdf>, the required instructions for the care giver and the patient as in **Annexure II** shall be also followed.

3. When to seek medical attention

Patient / Care giver will keep monitoring their health. Immediate medical attention must be sought if serious signs or symptoms develop. These could include

- i. Difficulty in breathing,
- ii. Persistent pain/pressure in the chest,
- iii. Mental confusion or inability to arouse,
- iv. Developing bluish discolorations of lips/face and
- v. As advised by treating medical officer

4. When to discontinue home isolation

Patient under home isolation will end home isolation after 17 days of onset of symptoms (or date of sampling, for pre-symptomatic cases) and no fever for 10 days. **There is no need for testing after the home isolation period is over.**

Undertaking on self-isolation

I S/W of, resident of
being diagnosed as a confirmed/suspect case of COVID-19, do hereby voluntarily undertake to maintain strict self-isolation at all times for the prescribed period. During this period I shall monitor my health and those around me and interact with the assigned surveillance team/with the call center (1075), in case I suffer from any deteriorating symptoms or any of my close family contacts develops any symptoms consistent with COVID-19.

I have been explained in detail about the precautions that I need to follow while I am under self-isolation.

I am liable to be acted on under the prescribed law for any non-adherence to self-isolation protocol.

Signature _____

Date _____

Contact Number _____

Instructions for care-givers

- **Mask:** The caregiver should wear a triple layer medical mask appropriately when in the same room with the ill person. Front portion of the mask should not be touched or handled during use. If the mask gets wet or dirty with secretions, it must be changed immediately. Discard the mask after use and perform hand hygiene after disposal of the mask.
- He/she should avoid touching own face, nose or mouth.
- **Hand hygiene** must be ensured following contact with ill person or his immediate environment.
- Hand hygiene should also be practiced before and after preparing food, before eating, after using the toilet, and whenever hands look dirty. Use soap and water for hand washing at least for 40 seconds. Alcohol-based hand rub can be used, if hands are not visibly soiled.
- After using soap and water, use of disposable paper towels to dry hands is desirable. If not available, use dedicated clean cloth towels and replace them when they become wet.
- **Exposure to patient:** Avoid direct contact with body fluids of the patient, particularly oral or respiratory secretions. Use disposable gloves while handling the patient. Perform hand hygiene before and after removing gloves.
- Avoid exposure to potentially contaminated items in his immediate environment (e.g. avoid sharing cigarettes, eating utensils, dishes, drinks, used towels or bed linen).
- Food must be provided to the patient in his room
- Utensils and dishes used by the patient should be cleaned with soap/detergent and water wearing gloves. The utensils and dishes may be re-used. Clean hands after taking off gloves or handling used items.
- **Use triple layer medical mask and disposable gloves** while cleaning or handling surfaces, clothing or linen used by the patient. Perform hand hygiene before and after removing gloves.
- The care giver will make sure that the patient follows the prescribed treatment.
- The care giver and all close contact will self-monitor their health with daily temperature monitoring and report promptly if they develop any symptom suggestive of COVID-19 (fever/cough/difficulty in breathing)

Instructions for the patient

- Patient should at all times use triple layer medical mask. Discard mask after 8 hours of use or earlier if they become wet or visibly soiled.
- Mask should be discarded only after disinfecting it with 1% Sodium Hypo-chlorite.
- Patient must stay in the identified room and away from other people in home, especially elderlies and those with co-morbid conditions like hypertension, cardiovascular disease, renal disease etc.
- Patient must take rest and drink lot of fluids to maintain adequate hydration
- Follow respiratory etiquettes all the time.
- Hands must be washed often with soap and water for at least 40 seconds or clean with alcohol based sanitizer.
- Don't share personal items with other people.
- Clean surfaces in the room that are touched often (tabletops, door knobs, handles, etc) with 1% hypochlorite solution.
- The patient must strictly follow the physician's instructions and medication advice.
- The patient will self-monitor his/her health with daily temperature monitoring and report promptly if develops any deterioration of symptom as detailed below.

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Guidelines for international arrivals

- i. Before boarding, all travellers shall give an undertaking that they would undergo mandatory quarantine for 14 days - 7 days paid institutional quarantine at their own cost, followed by 7 days isolation at home with self-monitoring of health.
- ii. Only for exceptional and compelling reasons such as cases of human distress, pregnancy, death in family, serious illness and parent(s) accompanied by children below 10 years, as assessed by the receiving states, home quarantine may be permitted for 14 days. Use of Aarogya Setu app shall be mandatory in such cases.
- iii. Dos and Don'ts shall be provided along with ticket to the travelers by the agencies concerned.
- iv. All passengers shall be advised to download Aarogya Setu app on their mobile devices.
- v. At the time of boarding the flight/ ship, only asymptomatic travelers will be allowed to board after thermal screening.
- vi. Passengers arriving through the land borders will also have to undergo the same protocol as above, and only those who are asymptomatic will be enabled to cross the border into India.
- vii. Self-declaration form in duplicate shall be filled by the person in the flight/ship and a copy of the same will be given to Health and Immigration officials present at the airport/ seaport/ landport. The form may also be made available on Aarogya Setu app.
- viii. Suitable precautionary measures such as environmental sanitation and disinfection shall be ensured at the airports as well as within the flights.
- ix. During boarding and at the airports, all possible measures to ensure social distancing to be ensured.
- x. Suitable announcement about COVID-19 including precautionary measures to be followed shall be made at airports/port and in flights/ships and during transit.
- xi. While on board the flight/ ship, required precautions such as wearing of masks, environmental hygiene, respiratory hygiene, hand hygiene etc. are to be observed by airline/ ship staff, crew and all passengers.
- xii. On arrival, thermal screening would be carried out in respect of all the passengers by the Health officials present at the airport/ seaport/ landport.
- xiii. The passengers found to be symptomatic during screening shall be immediately isolated and taken to medical facility as per health protocol.
- xiv. The remaining passengers shall be taken to suitable institutional quarantine facilities, to be arranged by the respective State/ UT Governments.
- xv. These passengers shall be kept under institutional quarantine for a minimum period of 7 days. They shall be tested as per ICMR protocol available at <https://www.mohfw.gov.in/pdf/Revisedtestingguidelines.pdf>
If they test positive, they shall be assessed clinically.
 - a. If they are assessed as mild cases, they will be allowed home isolation or isolated in the Covid Care Centre (both public & private facilities) as appropriate.

- b. Those having moderate or severe symptoms will be admitted to dedicated COVID Health facilities and managed accordingly.

If found negative, they shall be advised to further isolate themselves at home and self-monitor their health for 7 days.

- xvi. In case, any symptoms develop they shall inform the district surveillance officer or the state/national call center (1075).

NOTE: States can also develop their own protocol with regards to quarantine and isolation as per their assessment.

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Ministry of Health and Family Welfare

Guidelines for domestic travel (air/train/inter-state bus travel)

- 1) Dos and Don'ts shall be provided along with tickets to the travellers by the agencies concerned.
- 2) All passengers shall be advised to download Arogya Setu app on their mobile devices.
- 3) Suitable announcement about COVID-19 including precautionary measures to be followed shall be made at airports/railway station/bus terminals and in flights/trains/bus.
- 4) The States/UTs shall ensure that all passengers shall undergo thermal screening at the point of departure and only asymptomatic passengers are allowed to board the flight/train/bus.
- 5) During boarding and travel, all passengers shall use face covers/mask. They will also follow hand hygiene, respiratory hygiene and maintain environmental hygiene.
- 6) At airports/railway stations/ bus terminals required measures to ensure social distancing shall be taken.
- 7) Airports/railway stations/bus terminals should be regularly sanitized/disinfected and availability of soaps and sanitizers shall be ensured.
- 8) Thermal screening at exit point shall be arranged.
- 9) Asymptomatic passengers will be permitted to go with the advice that they shall self-monitor their health for 14 days. In case, they develop any symptoms, they shall inform the district surveillance officer or the state/national call center (1075).
- 10) Those found symptomatic will be isolated and taken to the nearest health facility. They will be assessed for clinical severity at the health facility.
- 11) Those having moderate or severe symptoms will be admitted to dedicated COVID Health facilities and managed accordingly.
- 12) Those having mild symptoms will be given the option of home isolation or isolated in the Covid Care Centre (both public & private facilities) as appropriate and tested as per ICMR protocol available at <https://www.mohfw.gov.in/pdf/Revisedtestingguidelines.pdf>.
If positive, they will continue in COVID Care Centre and will be managed as per clinical protocol.
If negative, the passenger may be allowed to go home, isolate himself/herself and self-monitor his/her health for further 7 days. In case, any symptoms develop they shall inform the district surveillance officer or the state/national call center (1075).

NOTE: States can also develop their own protocol with regards to quarantine and isolation as per their assessment.

**Government of India
Ministry of Health & Family Welfare**

SOP on preventive measures to contain spread of COVID-19 in offices

1. Background

Offices and other workplaces are relatively close settings, with shared spaces like work stations, corridors, elevators & stairs, parking places, cafeteria, meeting rooms and conference halls etc. and COVID-19 infection can spread relatively fast among officials, staffs and visitors.

There is a need to prevent spread of infection and to respond in a timely and effective manner in case suspect case of COVID-19 is detected in these settings, so as to limit the spread of infection.

2. Scope

This document outlines the preventive and response measures to be observed to contain the spread of COVID-19 in office settings. The document is divided into the following sub-sections

- (i) Generic preventive measures to be followed at all times
- (ii) Measures specific to offices
- (iii) Measures to be taken on occurrence of case(s)
- (iv) Disinfection procedures to be implemented in case of occurrence of suspect/confirmed case.

Offices in containment zones shall remain closed except for medical & essential services. Only those outside containment zones will be allowed to open up.

3. Generic preventive measures

Persons above 65 years of age, persons with comorbidities, pregnant women are advised to stay at home, except for essential and health purposes. Office management to facilitate the process.

The generic preventive measures include simple public health measures that are to be followed to reduce the risk of infection with COVID-19. These measures need to be observed by all (employees and visitors) at all times. These include:

- i. Individuals must maintain a minimum distance of 6 feet in public places as far as feasible.

- ii. Use of face covers/masks to be mandatory.
- iii. Practice frequent hand washing with soap (for at least 40-60 seconds) even when hands are not visibly dirty. Use of alcohol-based hand sanitizers (for at least 20 seconds) can be made wherever feasible.
- iv. Respiratory etiquettes to be strictly followed. This involves strict practice of covering one's mouth and nose while coughing/sneezing with a tissue/handkerchief/flexed elbow and disposing off used tissues properly.
- v. Self-monitoring of health by all and reporting any illness at the earliest to the immediate supervisory officer.
- vi. Spitting shall be strictly prohibited.
- vii. Installation & use of Aarogya Setu App by employees.

4. Specific preventive measures for offices:

- i. Entrance to have mandatory hand hygiene (sanitizer dispenser) and thermal screening provisions.
- ii. Only asymptomatic staff/visitors shall be allowed.
- iii. Any officer and staff residing in containment zone should inform the same to supervisory officer and not attend the office till containment zone is denotified. Such staff should be permitted to work from home and it will not be counted as leave period.
- iv. Drivers shall maintain social distancing and shall follow required dos and don'ts related to COVID-19. It shall be ensured by the service providers/ officers/ staff that drivers residing in containment zones shall not be allowed to drive vehicles.
- v. There shall be provision for disinfection of the interior of the vehicle using 1% sodium hypochlorite solution/ spray. A proper disinfection of steering, door handles, keys, etc. should be taken up.
- vi. Advise all employees who are at higher risk i.e. older employees, pregnant employees and employees who have underlying medical conditions, to take extra precautions. They should preferably not be exposed to any front-line work requiring direct contact with the public. Office management to facilitate work from home wherever feasible.
- vii. All officers and staff / visitors to be allowed entry only if using face cover/masks. The face cover/mask has to be worn at all times inside the office premises.
- viii. Routine issue of visitors/temporary passes should be suspended and visitors with proper permission of the officer who they want to meet, should be allowed after being properly screened.
- ix. Meetings, as far as feasible, should be done through video conferencing.
- x. Posters/standees/AV media on preventive measures about COVID-19 to be displayed prominently.

- xi. Staggering of office hours, lunch hours/coffee breaks to be done, as far as feasible.
- xii. Proper crowd management in the parking lots and outside the premises – duly following social distancing norms be ensured.
- xiii. Valet parking, if available, shall be operational with operating staff wearing face covers/ masks and gloves as appropriate. A proper disinfection of steering, door handles, keys, etc. of vehicles should be taken up.
- xiv. Any shops, stalls, cafeteria etc., outside and within the office premises shall follow social distancing norms at all times.
- xv. Specific markings may be made with sufficient distance to manage the queue and ensure social distancing in the premises.
- xvi. Preferably separate entry and exit for officers, staff and visitors shall be organised.
- xvii. Proper cleaning and frequent sanitization of the workplace, particularly of the frequently touched surfaces must be ensured.
- xviii. Ensure regular supply of hand sanitisers, soap and running water in the washrooms.
- xix. Required precautions while handling supplies, inventories and goods in the office shall be ensured.
- xx. Seating arrangement to be made in such a way that adequate social distancing is maintained.
- xxi. Number of people in the elevators shall be restricted, duly maintaining social distancing norms.
- xxii. For air-conditioning/ventilation, the guidelines of CPWD shall be followed which *inter alia* emphasises that the temperature setting of all air conditioning devices should be in the range of 24-30°C, relative humidity should be in the range of 40-70%, intake of fresh air should be as much as possible and cross ventilation should be adequate.
- xxiii. Large gatherings continue to remain prohibited.
- xxiv. Effective and frequent sanitation within the premises shall be maintained with particular focus on lavatories, drinking and hand washing stations/areas.
- xxv. Cleaning and regular disinfection (using 1% sodium hypochlorite) of frequently touched surfaces (door knobs, elevator buttons, hand rails, benches, washroom fixtures, etc.) shall be done in office premises and in common areas
- xxvi. Proper disposal of face covers / masks / gloves left over by visitors and/or employees shall be ensured.
- xxvii. In the cafeteria/canteen/dining halls:
 - a. Adequate crowd and queue management to be ensured to ensure social distancing norms.
 - b. Staff / waiters to wear mask and hand gloves and take other required precautionary measures.
 - c. The seating arrangement to ensure a distance of at least 1 meter between patrons as far as feasible.
 - d. In the kitchen, the staff to follow social distancing norms.

5. Measures to be taken on occurrence of case(s):

Despite taking the above measures, the occurrence of cases among the employees working in the office cannot be ruled out. The following measures will be taken in such circumstances:

i. When one or few person(s) who share a room/close office space is/are found to be suffering from symptoms suggestive of COVID-19:

- a. Place the ill person in a room or area where they are isolated from others at the workplace. Provide a mask/face cover till such time he/she is examined by a doctor.
- b. Immediately inform the nearest medical facility (hospital/clinic) or call the state or district helpline.
- c. A risk assessment will be undertaken by the designated public health authority (district RRT/treating physician) and accordingly further advice shall be made regarding management of case, his/her contacts and need for disinfection.
- d. The suspect case if reporting very mild/mild symptoms on assessment by the health authorities would be placed under home isolation.
- e. Suspect case, if assessed by health authorities as moderate to severe, will be treated as per health protocol in appropriate health facility.
- f. The rapid response team of the concerned district shall be requisitioned and will undertake the listing of contacts.
- g. The necessary actions for contact tracing and disinfection of work place will start once the report of the patient is received as positive. The report will be expedited for this purpose.

ii. If there are large numbers of contacts from a pre-symptomatic/asymptomatic case, there could be a possibility of a cluster emerging in workplace setting. Due to the close environment in workplace settings this could even be a large cluster (>15 cases). The essential principles of risk assessment, isolation, and quarantine of contacts, case referral and management will remain the same. However, the scale of arrangements will be higher.

iii. Management of contacts:

- a. The contacts will be categorised into high and low risk contacts by the District RRTs detailed in the Annexure I.
- b. The high-risk exposure contacts shall be quarantined for 14 days.

- c. These persons shall undergo testing as per ICMR protocol.
- d. The low risk exposure contacts shall continue to work and closely monitor their health for next 14 days.
- e. The flowchart for management of contact/ cases is placed at **Annexure - II**.

6. Closure of workplace

- i. If there are one or two cases reported, the disinfection procedure will be limited to places/areas visited by the patient in past 48 hrs. There is no need to close the entire office building/halt work in other areas of the office and work can be resumed after disinfection as per laid down protocol.
- ii. However, if there is a larger outbreak, the building/block will have to be closed for 48 hours after thorough disinfection. All the staff will work from home, till the building/block is adequately disinfected and is declared fit for re-occupation.

7. Disinfection Procedures in Offices

Detailed guidelines on the disinfection as already issued by Ministry of Health & Family Welfare as available on their website shall be followed.

Risk profiling of contacts

Contacts are persons who have been exposed to a confirmed case anytime between 2 days prior to onset of symptoms (in the positive case) and the date of isolation (or maximum 14 days after the symptom onset in the case).

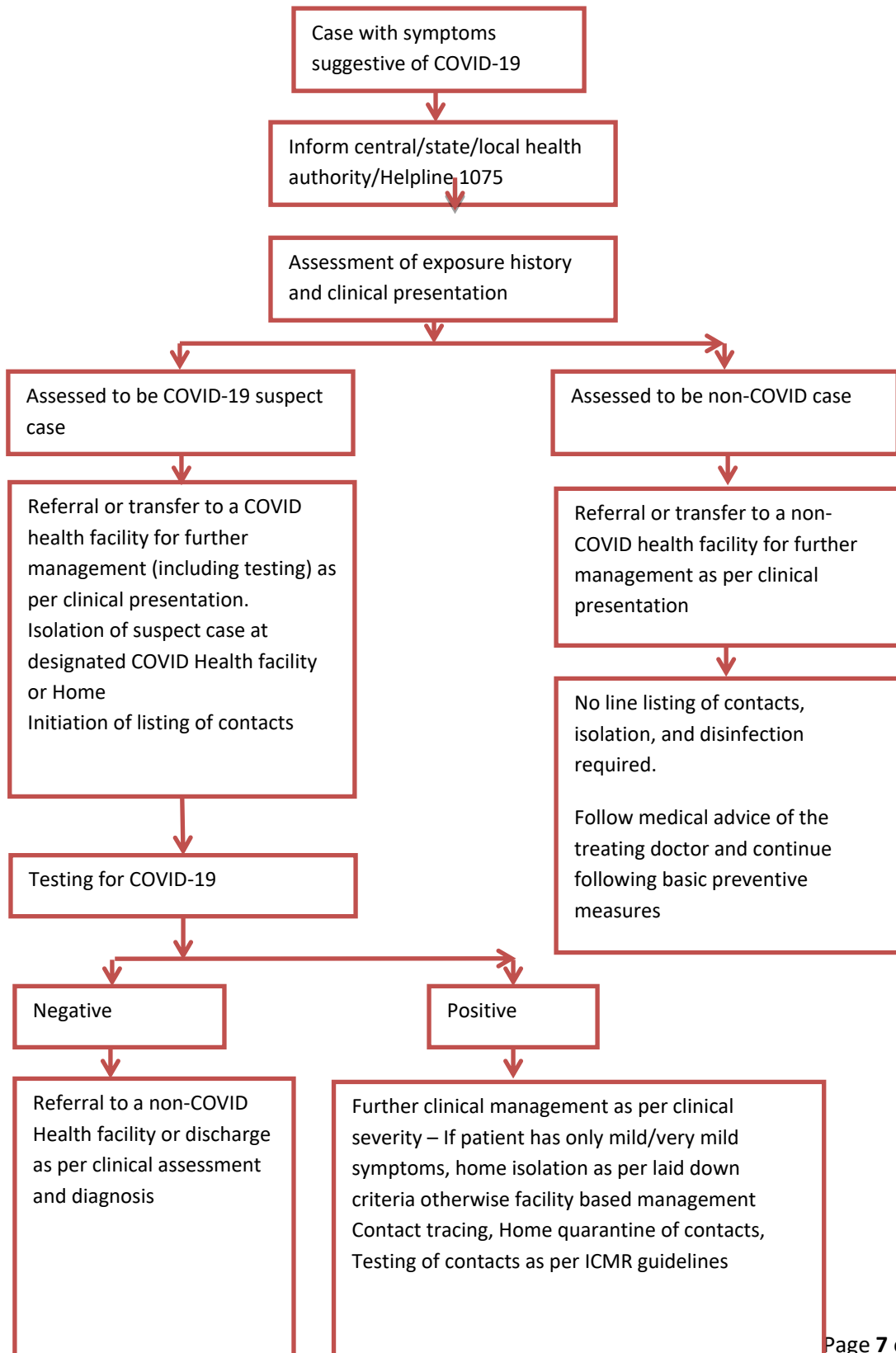
High-risk contact

- Touched body fluids of the patient (respiratory tract secretions, blood, vomit, saliva, urine, faeces; e.g. being coughed on, touching used paper tissues with a bare hand)
- Had direct physical contact with the body of the patient including physical examination without PPE
- Touched or cleaned the linens, clothes, or dishes of the patient.
- Lives in the same household as the patient.
- Anyone in close proximity (within 1 meter) of the confirmed case without precautions.
- Passengers in close proximity (within 1 meter) in a conveyance with a symptomatic person who later tested positive for COVID-19 for more than 6 hours.

Low-risk contact

- Shared the same space (worked in same room/similar) but not having a high-risk exposure to confirmed case of COVID-19.
- Travelled in same environment (bus/train/flight/any mode of transit) but not having a high-risk exposure.

Management of the case(s) and contacts



Government of India
Ministry of Health and Family Welfare

SOP on preventive measures to contain spread of COVID-19 in religious places/places of worship

1. Background

Religious places / places of worship get frequented by large number of people for spiritual solace. To prevent spread of COVID-19 infection, it is important that required social distancing and other preventive measures are followed in such premises.

2. Scope

This document outlines various generic precautionary measures to be adopted in addition to specific measures to be taken at particular places to prevent spread of COVID-19.

Religious places/places of worship for public in containment zones shall remain closed. Only those outside containment zones will be allowed to open up.

3. Generic preventive measures

Person above 65 years of age, persons with comorbidities, pregnant woman and children below the age of 10 years are advised to stay at home. Organisations managing the religious institutions to advise accordingly.

The generic preventive measures include simple public health measures that are to be followed to reduce the risk of COVID-19. These measures need to be observed by all (workers and visitors) in these places at all times.

These include:

- i. Individuals must maintain a minimum distance of 6 feet in public places as far as feasible.
- ii. Use of face covers/masks to be mandatory.
- iii. Practice frequent hand washing with soap (for at least 40-60 seconds) even when hands are not visibly dirty. Use of alcohol-based hand sanitizers (for at least 20 seconds) can be made wherever feasible.
- iv. Respiratory etiquettes to be strictly followed. This involves strict practice of covering one's mouth and nose while coughing/sneezing with a tissue/handkerchief/flexed elbow and disposing off used tissues properly.
- v. Self-monitoring of health by all and reporting any illness at the earliest to state and district helpline.
- vi. Spitting should be strictly prohibited.
- vii. Installation & use of Aarogya Setu App shall be advised to all.

4. All religious places shall also ensure:

- i. Entrance to have mandatory hand hygiene (sanitizer dispenser) and thermal screening provisions.
- ii. Only asymptomatic persons shall be allowed in the premises.
- iii. All persons to be allowed entry only if using face cover/masks.
- iv. Posters/standees on preventive measures about COVID-19 to be displayed prominently. Audio and Video clips to spread awareness on preventive measures for COVID-19 should be regularly played.
- v. Staggering of visitors to be done, if possible.
- vi. Shoes / footwear to be preferably taken off inside own vehicle. If needed they should be kept in separate slots for each individual / family by the persons themselves.
- vii. Proper crowd management in the parking lots and outside the premises – duly following social distancing norms shall be organized.
- viii. Any shops, stalls, cafeteria etc., outside and within the premises shall follow social distancing norms at all times
- ix. Specific markings may be made with sufficient distant to manage the queue and ensure social distancing in the premises.
- x. Preferably separate entry and exits for visitors shall be organized
- xi. Maintain physical distancing of a minimum of 6 feet at all times when queuing up for entry.
- xii. People should wash their hand and feet with soap and water before entering the premises.
- xiii. Seating arrangement to be made in such a way that adequate social distancing is maintained.
- xiv. For air-conditioning/ventilation, the guidelines of CPWD shall be followed which inter alia emphasises that the temperature setting of all air conditioning devices should be in the range of 24-30oC, relative humidity should be in the range of 40-70%, intake of fresh air should be as much as possible and cross ventilation should be adequate.
- xv. Touching of statues/idols / holy books etc. not to be allowed.
- xvi. Large gatherings/congregation continue to remain prohibited.
- xvii. In view of potential threat of spread of infection, as far as feasible recorded devotional music/songs may be played and choir or singing groups should not be allowed.
- xviii. Avoid physical contact while greeting each other.
- xix. Common prayer mats should be avoided and devotees should bring their own prayer mat or piece of cloth which they may take back with them.
- xx. No physical offerings like Prasad/distribution or sprinkling of holy water, etc.to be allowed inside the religious place.
- xxi. Community kitchens/langars / “Ann-daan”, etc. at religious places should follow physical distancing norms while preparing and distributing food.
- xxii. Effective sanitation within the premises shall be maintained with particular focus on lavatories, hand and foot-washing stations/areas.

- xxiii. Frequent cleaning and disinfection to be maintained by the management of the religious place.
- xxiv. The floors should particularly be cleaned multiple times in the premises.
- xxv. Proper disposal of face covers / masks / gloves left over by visitors and/or employees should be ensured.
- xxvi. In case of a suspect or confirmed case in the premises:
 - a. Place the ill person in a room or area where they are isolated from others.
 - b. Provide a mask/face cover till such time he/she is examined by a doctor.
 - c. Immediately inform the nearest medical facility (hospital/clinic) or call the state or district helpline.
 - d. A risk assessment will be undertaken by the designated public health authority (district RRT/treating physician) and accordingly further action be initiated regarding management of case, his/her contacts and need for disinfection.
 - e. Disinfection of the premises to be taken up if the person is found positive.

**Government of India
Ministry of Health and Family Welfare**

SOP on preventive measures in Restaurants to contain spread of COVID-19

1. Background

Given the current COVID-19 outbreak in India, it is important that restaurants and other hospitality units take suitable measures to restrict any further transmission of the virus while providing restaurant services.

2. Scope

This document outlines various generic precautionary measures to be adopted in addition to specific measures to be ensured at particular places to prevent spread of COVID-19.

Restaurants in containment zones shall remain closed. Only those outside containment zones will be allowed to open up.

3. Generic preventive measures

Persons above 65 years of age, persons with comorbidities, pregnant women and children below the age of 10 years are advised to stay at home, except for essential and health purposes. Restaurant management to advise accordingly.

The generic measures include simple public health measures that are to be followed to reduce the risk of COVID-19. These measures need to be observed by all (staff and patrons) in these places at all times.

These include:

- i. Physical distancing of at least 6 feet to be followed as far as feasible.
- ii. Use of face covers/masks to be made mandatory.
- iii. Practice frequent hand washing with soap (for at least 40-60 seconds) even when hands are not visibly dirty. Use of alcohol-based hand sanitizers (for at least 20 seconds) can be made wherever feasible.
- iv. Respiratory etiquettes to be strictly followed. This involves strict practice of covering one's mouth and nose while coughing/sneezing with a tissue/handkerchief/flexed elbow and disposing off used tissues properly.
- v. Self-monitoring of health by all and reporting any illness at the earliest to state and district helpline.
- vi. Spitting shall be strictly prohibited.
- vii. Installation & use of Aarogya Setu App shall be advised to all.

viii.

4. All Restaurants shall ensure the following arrangements:

- i. Takeaways to be encouraged, instead of Dine-In. Food delivery personnel should leave the packet at customer's door. DO NOT handover the food packet directly to the customer.
- ii. The staff for home deliveries shall be screened thermally by the restaurant authorities prior to allowing home deliveries.
- iii. Entrance to have mandatory hand hygiene (sanitizer dispenser) and thermal screening provisions.
- iv. Only asymptomatic staff and patrons shall be allowed.
- v. All staff and patrons to be allowed entry only if using face cover/masks. The face cover/masks has to be worn at all times inside the restaurant.
- vi. Posters/standees/AV media on preventive measures about COVID-19 to be displayed prominently.
- vii. Staggering of patrons to be done, if possible.
- viii. Adequate manpower shall be deployed by restaurant management for ensuring social distancing norms.
- ix. All employees who are at higher risk i.e. older employees, pregnant employees and employees who have underlying medical conditions, to take extra precautions. They should preferably not be exposed to any front-line work requiring direct contact with the public. Restaurant management to facilitate work from home wherever feasible.
- x. Proper crowd management in the parking lots and outside the premises – duly following social distancing norms shall be ensured.
- xi. Additional patrons to be seated in a designated waiting area with norms of social distancing.
- xii. Valet parking, if available, shall be operational with operating staff wearing face covers/ masks and gloves as appropriate. A proper disinfection of steering, door handles, keys, etc. of the vehicles should be taken up.
- xiii. Specific markings may be made with sufficient distance to manage the queue and ensure social distancing in the premises.
- xiv. Preferably separate entry and exits for patrons, staff and goods/supplies shall be organized.
- xv. Required precautions while handling supplies, inventories and goods in the restaurant shall be ensured. Proper queue management and disinfection shall be organized.
- xvi. Maintaining physical distancing of a minimum of 6 feet, when queuing up for entry and inside the restaurant as far as feasible.
- xvii. Seating arrangement to be made in such a way that adequate social distancing is maintained. In restaurants, not more than 50% of seating capacity to be permitted.
- xviii. Disposable menus are advised to be used.
- xix. Instead of cloth napkins, use of good quality disposable paper napkins to be encouraged.
- xx. Buffet service should also follow social distancing norms among patrons.
- xxi. Number of people in the elevators shall be restricted, duly maintaining social distancing norms.

- xxii. Use of escalators with one person on alternate steps may be encouraged.
- xxiii. For air-conditioning/ventilation, the guidelines of CPWD shall be followed which inter alia emphasises that the temperature setting of all air conditioning devices should be in the range of 24-30°C, relative humidity should be in the range of 40-70%, intake of fresh air should be as much as possible and cross ventilation should be adequate.
- xxiv. Large gatherings/congregations continue to remain prohibited.
- xxv. Effective and frequent sanitation within the premises shall be maintained with particular focus on lavatories, drinking and hand washing stations/areas.
- xxvi. Cleaning and regular disinfection (using 1% sodium hypochlorite) of frequently touched surfaces (door knobs, elevator buttons, hand rails, benches, washroom fixtures, etc.) to be made mandatory in all guest service area and common areas.
- xxvii. Proper disposal of face covers / masks / gloves left over by patrons and/or staff should be ensured.
- xxviii. Deep cleaning of all washrooms shall be ensured at regular intervals.
- xxix. Adequate crowd and queue management to be ensured to ensure social distancing norms.
- xxx. Staff / waiters should wear mask and hand gloves and take other required precautionary measures.
- xxxi. Contactless mode of ordering and digital mode of payment (using e-wallets) to be encouraged.
- xxxii. Tables to be sanitized each time customer leaves.
- xxxiii. In the kitchen, the staff should follow social distancing norms at work place. Kitchens area must be sanitized at regular intervals.
- xxxiv. Gaming Arcades/Children play areas (wherever applicable) shall remain closed.
- xxxv. In case of a suspect or confirmed case in the premises:
 - a. Place the ill person in a room or area where they are isolated from others.
 - b. Provide a mask/face cover till such time he/she is examined by a doctor.
 - c. Immediately inform the nearest medical facility (hospital/clinic) or call the state or district helpline.
 - d. A risk assessment will be undertaken by the designated public health authority (district RRT/treating physician) and accordingly further action be initiated regarding management of case, his/her contacts and need for disinfection.
 - e. Disinfection of the premises to be taken up if the person is found positive.

Government of India
Ministry of Health and Family Welfare

SOP on preventive measures in shopping malls to contain spread of COVID-19

1. Background

Shopping malls get frequented by large number of people for shopping, entertainment and food. To prevent spread of COVID-19 infection, it is important that required social distancing and other preventive measures are followed.

2. Scope

This document outlines various generic precautionary measures to be adopted in addition to specific measures to be ensured at particular places to prevent spread of COVID-19.

Shopping malls in containment zones shall remain closed. Only those outside containment zones will be allowed to open up.

3. Generic preventive measures

Persons above 65 years of age, persons with comorbidities, pregnant women and children below the age of 10 years are advised to stay at home, except for essential and health purposes. Shopping mall management to advise accordingly.

The generic measures include simple public health measures that are to be followed to reduce the risk of COVID-19. These measures need to be observed by all (workers and visitors) in these places at all times.

These include:

- i. Physical distancing of at least 6 feet to be followed as far as feasible.
- ii. Use of face covers/masks to be made mandatory.
- iii. Practice frequent hand washing with soap (for at least 40-60 seconds) even when hands are not visibly dirty. Use of alcohol-based hand sanitizers (for at least 20 seconds) can be made wherever feasible.
- iv. Respiratory etiquettes to be strictly followed. This involves strict practice of covering one's mouth and nose while coughing/sneezing with a tissue/handkerchief/flexed elbow and disposing off used tissues properly.
- v. Self-monitoring of health by all and reporting any illness at the earliest to state and district helpline.
- vi. Spitting shall be strictly prohibited.
- vii. Installation & use of Aarogya Setu App shall be advised to all.

viii.

4. All shopping malls shall ensure the following arrangements:

- i. Entrance to have mandatory hand hygiene (sanitizer dispenser) and thermal screening provisions.
- ii. Only asymptomatic customers/visitors shall be allowed.
- iii. All workers/customers/visitors to be allowed entry only if using face cover/masks. The face cover/masks has to be worn at all times inside the shopping mall.
- iv. Posters/standees/AV media on preventive measures about COVID-19 to be displayed prominently.
- v. Staggering of visitors to be done, if possible.
- vi. Adequate manpower shall be deployed by Mall Management for ensuring social distancing norms.
- vii. All employees who are at higher risk i.e. older employees, pregnant employees and employees who have underlying medical conditions, to take extra precautions. They should preferably not be exposed to any front-line work requiring direct contact with the public. Shopping Mall management to facilitate work from home wherever feasible.
- viii. Proper crowd management in the parking lots and outside the premises – duly following social distancing norms shall be ensured.
- ix. Valet parking, if available, shall be operational with operating staff wearing face covers/ masks and gloves as appropriate. A proper disinfection of steering, door handles, keys, etc. of the vehicles should be taken up.
- x. Any shops, stalls, cafeteria etc., outside and within the premises shall follow social distancing norms at all times.
- xi. Specific markings may be made with sufficient distance to manage the queue and ensure social distancing in the premises.
- xii. Preferably separate entry and exits for visitors, workers and goods/supplies shall be organized.
- xiii. The staff for home deliveries shall be screened thermally by the shopping mall authorities prior to allowing home deliveries.
- xiv. Required precautions while handling supplies, inventories and goods in the shopping mall shall be ensured. Proper queue management and disinfection shall be organized.
- xv. Maintaining physical distancing of a minimum of 6 feet, when queuing up for entry and inside the shopping mall as far as feasible.
- xvi. Number of customers inside the shop to be kept at a minimum, so as to maintain the physical distancing norms.
- xvii. Seating arrangement, if any, to be made in such a way that adequate social distancing is maintained.
- xviii. Number of people in the elevators shall be restricted, duly maintaining social distancing norms.
- xix. Use of escalators with one person on alternate steps may be encouraged.
- xx. For air-conditioning/ventilation, the guidelines of CPWD shall be followed which inter alia emphasises that the temperature setting of all air conditioning devices should be in the range of 24-30°C, relative humidity should be in the range of 40-

70%, intake of fresh air should be as much as possible and cross ventilation should be adequate.

- xxi. Large gatherings/congregations continue to remain prohibited.
- xxii. Effective and frequent sanitation within the premises shall be maintained with particular focus on lavatories, drinking and hand washing stations/areas.
- xxiii. Cleaning and regular disinfection (using 1% sodium hypochlorite) of frequently touched surfaces (door knobs, elevator buttons, hand rails, benches, washroom fixtures, etc.) to be made mandatory in all malls in common areas as well as inside shops, elevators, escalators etc.
- xxiv. Proper disposal of face covers / masks / gloves left over by visitors and/or employees should be ensured.
- xxv. Deep cleaning of all washrooms shall be ensured at regular intervals.
- xxvi. In the food-courts:
 - a. Adequate crowd and queue management to be ensured to ensure social distancing norms.
 - b. In food courts and restaurants, not more than 50% of seating capacity to be permitted.
 - c. Food court staff / waiters should wear mask and hand gloves and take other required precautionary measures.
 - d. The seating arrangement should ensure adequate social distancing between patrons as far as feasible.
 - e. Contactless mode of ordering and digital mode of payment (using e-wallets) to be encouraged.
 - f. Tables to be sanitized each time customer leaves.
 - g. In the kitchen, the staff should follow social distancing norms at work place.
- xxvii. Gaming Arcades shall remain closed.
- xxviii. Children Play Areas shall remain closed.
- xxix. Cinema halls inside shopping malls shall remain closed.
- xxx. In case of a suspect or confirmed case in the premises:
 - a. Place the ill person in a room or area where they are isolated from others.
 - b. Provide a mask/face cover till such time he/she is examined by a doctor.
 - c. Immediately inform the nearest medical facility (hospital/clinic) or call the state or district helpline.
 - d. A risk assessment will be undertaken by the designated public health authority (district RRT/treating physician) and accordingly further action be initiated regarding management of case, his/her contacts and need for disinfection.
 - e. Disinfection of the premises to be taken up if the person is found positive.

Government of India
Ministry of Health and Family Welfare

**SOP on preventive measures in Hotels and Other Hospitality Units
to contain spread of COVID-19**

1. Background

All hotels and other hospitality units must take suitable measures to restrict any further transmission of COVID-19 while providing accommodation and other tourist services. The SOP aims to minimize all possible physical contacts between Staff and Guests and maintain social distancing and other preventive and safety measures against COVID-19.

2. Scope

This document outlines various generic precautionary measures to be adopted in addition to specific measures to be ensured in hotels and other hospitality units(*henceforth, 'hotels'*)to prevent spread of COVID-19.

Hotels in containment zones shall remain closed. Only those outside containment zones will be allowed to open up.

3. Generic preventive measures

(A) Persons above 65 years of age, persons with comorbidities, pregnant women and children below the age of 10 years are advised to stay at home, except for essential and health purposes. Hotel management to advise accordingly.

(B) The generic measures include simple public health measures that are to be followed to reduce the risk of COVID-19. These measures need to be observed by all (staff and guests) in these places at all times.

These include:

- i. Physical distancing of at least 6 feet to be followed as far as feasible.
- ii. Use of face covers/masks to be made mandatory.
- iii. Practice frequent hand washing with soap (for at least 40-60 seconds) even when hands are not visibly dirty. Use of alcohol-based hand sanitizers (for at least 20 seconds) can be made wherever feasible.
- iv. Respiratory etiquettes to be strictly followed. This involves strict practice of covering one's mouth and nose while coughing/sneezing with a tissue/handkerchief/flexed elbow and disposing off used tissues properly.
- v. Self-monitoring of health by all and reporting any illness at the earliest to state and district helpline.
- vi. Spitting shall be strictly prohibited.
- vii. Installation and use of Aarogya Setu app shall be advised to all.

4. All Hotels shall ensure the following arrangements:

- i. Entrance to have mandatory hand hygiene (sanitizer dispenser) and thermal screening provisions.
- ii. Only asymptomatic staff and guests shall be allowed.
- iii. All staff and guests to be allowed entry only if using face cover/masks. The face cover/masks has to be worn at all times inside the hotel.
- iv. Adequate manpower shall be deployed by hotel management for ensuring social distancing norms.
- v. Staff should additionally wear gloves and take other required precautionary measures.
- vi. All employees who are at higher risk i.e. older employees, pregnant employees and employees who have underlying medical conditions, to take extra precautions. They should preferably not be exposed to any front-line work requiring direct contact with the public. Hotel management to facilitate work from home wherever feasible.
- vii. Proper crowd management in the hotel as well as in outside premises like parking lots—duly following social distancing norms shall be ensured. Large gatherings/congregations continue to remain prohibited.
- viii. Valet parking, if available, shall be operational with operating staff wearing face covers/ masks and gloves as appropriate. A proper disinfection of steering, door handles, keys, etc. of the vehicles should be taken up.
- ix. Preferably separate entry and exits for guests, staff and goods/supplies shall be organized. Maintaining physical distancing of a minimum of 6 feet, when queuing up for entry and inside the hotel as far as feasible. Specific markings may be made with sufficient distance to manage the queue and ensure social distancing in the premises.
- x. Number of people in the elevators shall be restricted, duly maintaining social distancing norms. Use of escalators with one person on alternate steps may be encouraged.
- xi. Details of the guest (travel history, medical condition etc.) along with ID and self-declaration form must be provided by the guest at the reception.
- xii. Posters/standees/AV media on preventive measures about COVID-19 to be displayed prominently.
- xiii. Hand sanitizers must be kept at the reception for guests to use. Guests to sanitize hands before and after filling relevant forms including A&D register.
- xiv. Hotels must adopt contactless processes like QR code, online forms, digital payments like e-wallet etc. for both check-in and check-out.
- xv. Luggage should be disinfected before sending the luggage to rooms.
- xvi. Guests who are at higher risk i.e. those who are older, pregnant or those who have underlying medical conditions are advised to take extra precautions.
- xvii. Guests should be advised not to visit areas falling within containment zone
- xviii. Required precautions while handling supplies, inventories and goods in the hotel shall be ensured. Proper queue management and disinfection shall be organized.
- xix. Appropriate personal protection gears like face covers/masks, gloves and hand sanitizers etc. shall be made available by hotel to the staff as well as the guests.
- xx. Detailed guidelines issued for restaurants shall be followed.

- a. Seating arrangement in the restaurant also to be made in such a way that adequate social distancing is maintained.
 - b. Disposable menus are advised to be used.
 - c. Instead of cloth napkins, use of good quality disposable paper napkins to be encouraged.
 - d. Contactless mode of ordering and digital mode of payment (using e-wallets) to be encouraged.
 - e. Buffet service should also follow social distancing norms among guests.
- xxi. Room service or takeaways to be encouraged, instead of dine-in. Food delivery personnel should leave the packet at guest or customer's door and not handed directly to the receiver. The staff for home deliveries shall be screened thermally by the hotel authorities prior to allowing home deliveries.
 - xxii. For room service, communication between guests and in-house staff should be through intercom/ mobile phone and room service (if any) should be provided while maintaining adequate social distance.
 - xxiii. Gaming Arcades/Children play areas (wherever applicable) shall remain closed.
 - xxiv. For air-conditioning/ventilation, the guidelines of CPWD shall be followed which inter alia emphasises that the temperature setting of all air conditioning devices should be in the range of 24-30°C, relative humidity should be in the range of 40-70%, intake of fresh air should be as much as possible and cross ventilation should be adequate.
 - xxv. Effective and frequent sanitation within the premises shall be maintained with particular focus on lavatories, drinking and hand washing stations/areas.
 - xxvi. Cleaning and regular disinfection (using 1% sodium hypochlorite) of frequently touched surfaces (door knobs, elevator buttons, hand rails, benches, washroom fixtures, etc.) to be made mandatory in all guest service area and common areas.
 - xxvii. Proper disposal of face covers / masks / gloves left over by guests and/or staff should be ensured.
 - xxviii. Deep cleaning of all washrooms shall be ensured at regular intervals.
 - xxix. Rooms and other service areas shall be sanitized each time a guest leaves.
 - xxx. In the kitchen, the staff should follow social distancing norms at work place. Kitchens area must be sanitized at regular intervals.
 - xxxi. In case of a suspect or confirmed case in the premises:
 - a. Place the ill person in a room or area where they are isolated from others.
 - b. Provide a mask/face cover till such time he/she is examined by a doctor.
 - c. Immediately inform the nearest medical facility (hospital/clinic) or call the state or district helpline.
 - d. A risk assessment will be undertaken by the designated public health authority (district RRT/treating physician) and accordingly further action be initiated regarding management of case, his/her contacts and need for disinfection.
 - e. Disinfection of the premises to be taken up if the person is found positive.



Ministry of Health & Family Welfare
Government of India

Guidelines on preventive measures to contain spread of COVID-19 Offices

11th June 2020

Need for Covid Appropriate Behaviour



Every individual is at risk



If infected, you may spread infection to others in crowded places



You may put your family members at risk



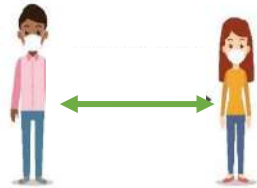
You may particularly put elders in your family at risk

As we progress in Unlock 1.0, to contain the spread of COVID-19, we need to follow Covid Appropriate Behavior at all times

Generic Preventive Measures



Use face covers/masks



Maintain adequate social distancing



Wash hands with soap/ sanitizers (as required)



Respiratory etiquettes

- Cover mouth & nose with tissue/ handkerchief/ flexed elbow
- Dispose off used tissues properly



Spitting is strictly prohibited



Thermal screening of all entrants and staff



Maintain 6ft distance while queuing for entry in public places



Staggering of visitors/patrons

Generic Preventive Measures



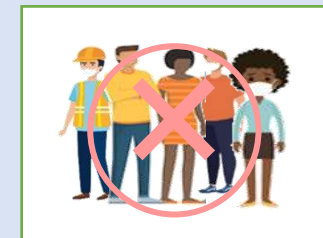
Self-monitor health
(Guest and staff)



Aarogya Setu app
(Recommended to Install & Use)

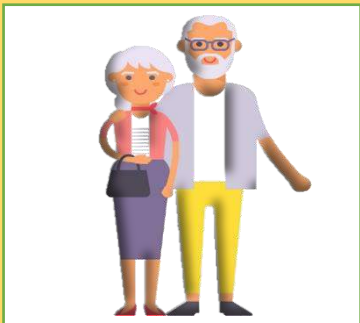


Immediate report illness
(To state and district helpline)



**Large gatherings/
congregation prohibited**

Who are advised to stay at home?



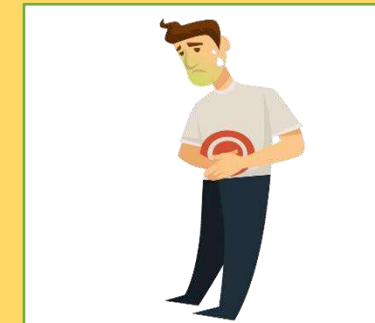
**People aged more than
65 years**



**Children aged less than
10 years**



Pregnant Women



**Persons with comorbidities such
as hypertension, diabetes, etc**

Except for essential and health purposes

Offices – Specific Measures



Mandatory sanitizer dispensers and thermal screening provisions at entrance



Only asymptomatic staff/ visitors allowed



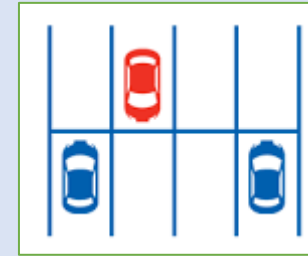
Officer/visitors/ staff to be allowed entry only if wearing masks



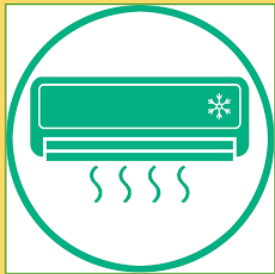
Separate entry and exit for officers, staff and visitors



Specific markings with sufficient distance for queue management and social distancing norms



Proper Crowd Management in Parking Lots and outside the premises



Air-conditioning
*(Temp of 24–30°C,
Relative humidity of
40–70%,
Intake of fresh air,
Cross ventilation)*



Posters/ standees/ AV media on COVID preventive measures displayed at all times



Effective and frequent sanitation *(esp. lavatories, drinking and hand/foot washing stations)*

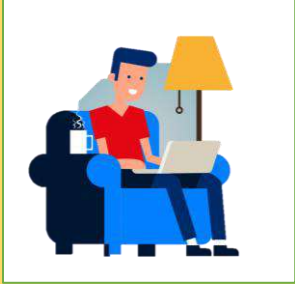


Cleaning and regular disinfection *(using 1% sodium hypochlorite of frequently touched surfaces)*



Safe Disposal of face covers/ masks/gloves

Offices – Specific Measures



Officers/staff residing in containment zone to inform supervisory officer and work from home



Staff/Drivers residing in containment zones should not be allowed to drive vehicles



Drivers to maintain social distancing and follow required do's and don'ts
(Disinfection of steering, door handles, keys using 1% sodium hypochlorite solution/ spray)



Avoid front-line work and take extra precaution for high risk employee
(older, pregnant employees and employees with underlying medical conditions)



Suspend issue of visitors/ temporary passes & screen permitted visitors properly



Video Conferencing for meetings



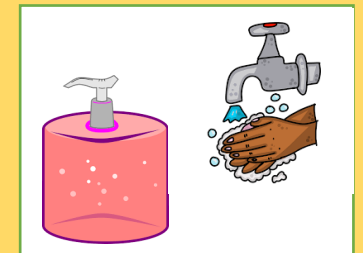
Staggering of office hours, lunch hours/coffee breaks



Valet parking operational
(Face covers/ masks & gloves for staff and disinfection of steering, door handles, keys)



Limited number of people in elevators



Ensure regular supply of hand sanitizers/ soap/ running water in washrooms

Offices – Specific Measures



Precautions while handling supplies/inventories



Shops/stalls/Cafeteria to follow social distancing within and outside premises



Seating arrangement in cafeteria to ensure adequate social distancing



Staff/waiters to wear masks and hand gloves



Staff to follow social distancing norms in the cafeteria/ canteen/ dining halls/ kitchen

Closure of Workplace

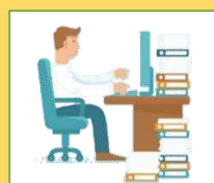
Scenario: One or Two reported cases



Disinfection procedure for places/areas visited by patient in past 48 hrs



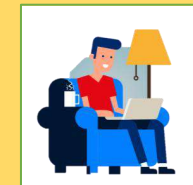
No need to close entire office building/halt work in other areas



Work can be resumed after disinfection as per protocol



Building/block to be closed for 48 hours after thorough disinfection

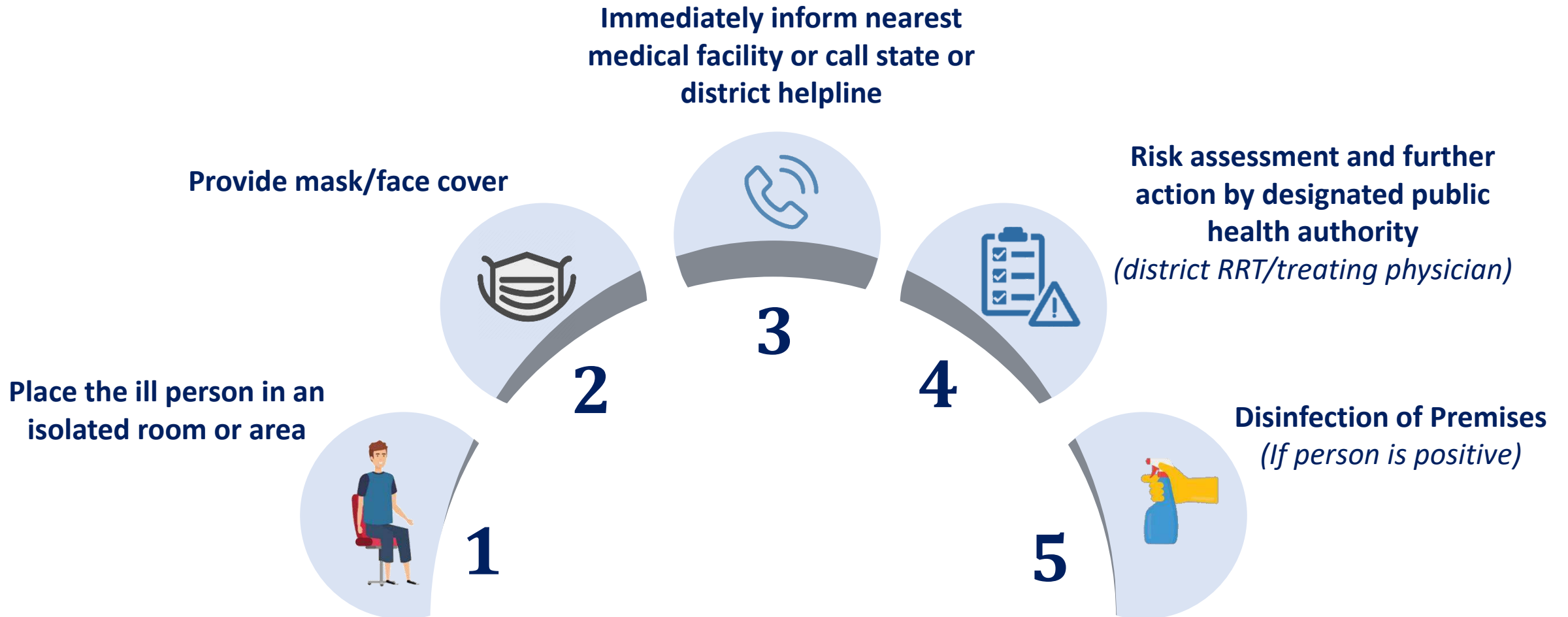


Work from home for entire staff, till the building/block is disinfected and fit for re-occupation



Risk assessment, isolation, and quarantine of contacts, case referral and management

Protocol for attending to suspect or confirmed case





Ministry of Health & Family Welfare
Government of India

Guidelines on preventive measures to contain spread of COVID-19 Religious Places

11th June 2020

Need for Covid Appropriate Behaviour



Every individual is at risk



If infected, you may spread infection to others in crowded places



You may put your family members at risk



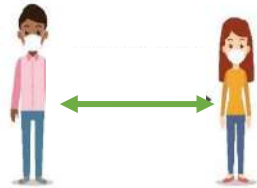
You may particularly put elders in your family at risk

As we progress in Unlock 1.0, to contain the spread of COVID-19, we need to follow Covid Appropriate Behavior at all times

Generic Preventive Measures



Use face covers/masks



Maintain adequate social distancing



Wash hands with soap/ sanitizers (as required)



Respiratory etiquettes

- Cover mouth & nose with tissue/ handkerchief/ flexed elbow
- Dispose off used tissues properly



Spitting is strictly prohibited



Thermal screening of all entrants and staff



Maintain 6ft distance while queuing for entry in public places



Staggering of visitors/patrons

Generic Preventive Measures



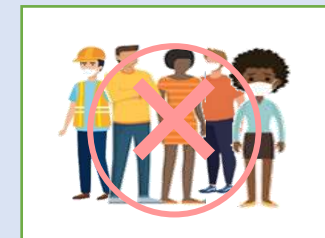
Self-monitor health
(Guest and staff)



Aarogya Setu app
(Recommended to Install & Use)

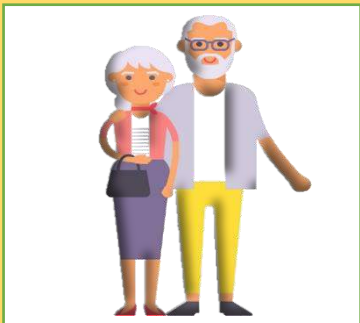


Immediate report illness
(To state and district helpline)



**Large gatherings/
congregation prohibited**

Who are advised to stay at home?



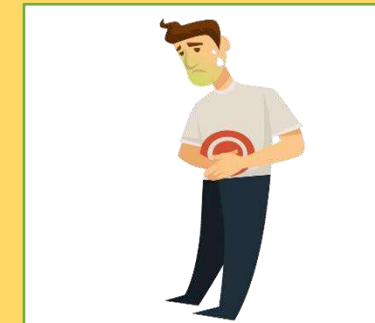
**People aged more than
65 years**



**Children aged less than
10 years**



Pregnant Women



**Persons with comorbidities such
as hypertension, diabetes, etc**

Except for essential and health purposes

Religious Places – Specific Measures



Mandatory sanitizer dispensers and thermal screening provisions at entrance



Only asymptomatic persons allowed



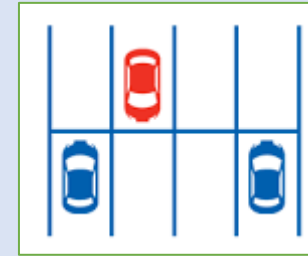
Persons to be allowed entry only if wearing face cover/masks



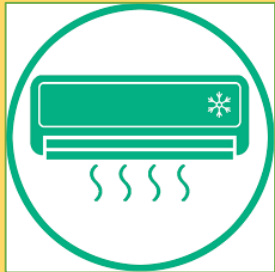
Separate entry and exit for visitors



Specific markings with sufficient distance for queue management and social distancing norms



Proper Crowd Management in Parking Lots and outside the premises



Air-conditioning
(Temp of 24–30°C, Relative humidity of 40–70%, Intake of fresh air, Cross ventilation)



Posters/ standees/ AV media on COVID preventive measures displayed at all times



Effective and frequent sanitation *(esp. lavatories, drinking and hand/foot washing stations)*



Shops/stalls/Cafeteria to follow social distancing within and outside premises



Cleaning and regular disinfection of the religious place



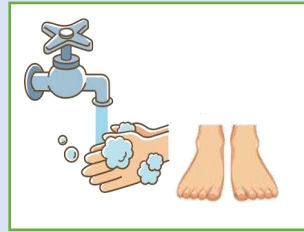
Safe Disposal of face covers/ masks/gloves

Religious Places – Specific Measures



Footwear/ Shoes to be taken off inside own vehicle

(if needed, keep in separate slots for each individual / family by persons themselves)



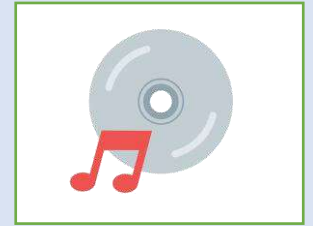
Hand and feet wash with soap and water before entering



Seating arrangement to maintain adequate social distancing



Touching of statues/ idols/ holy books not allowed



Play recorded devotional music/ songs and avoid choir or singing groups



Avoid physical contact while greeting



No common prayer mats - bring your mat/ cloth

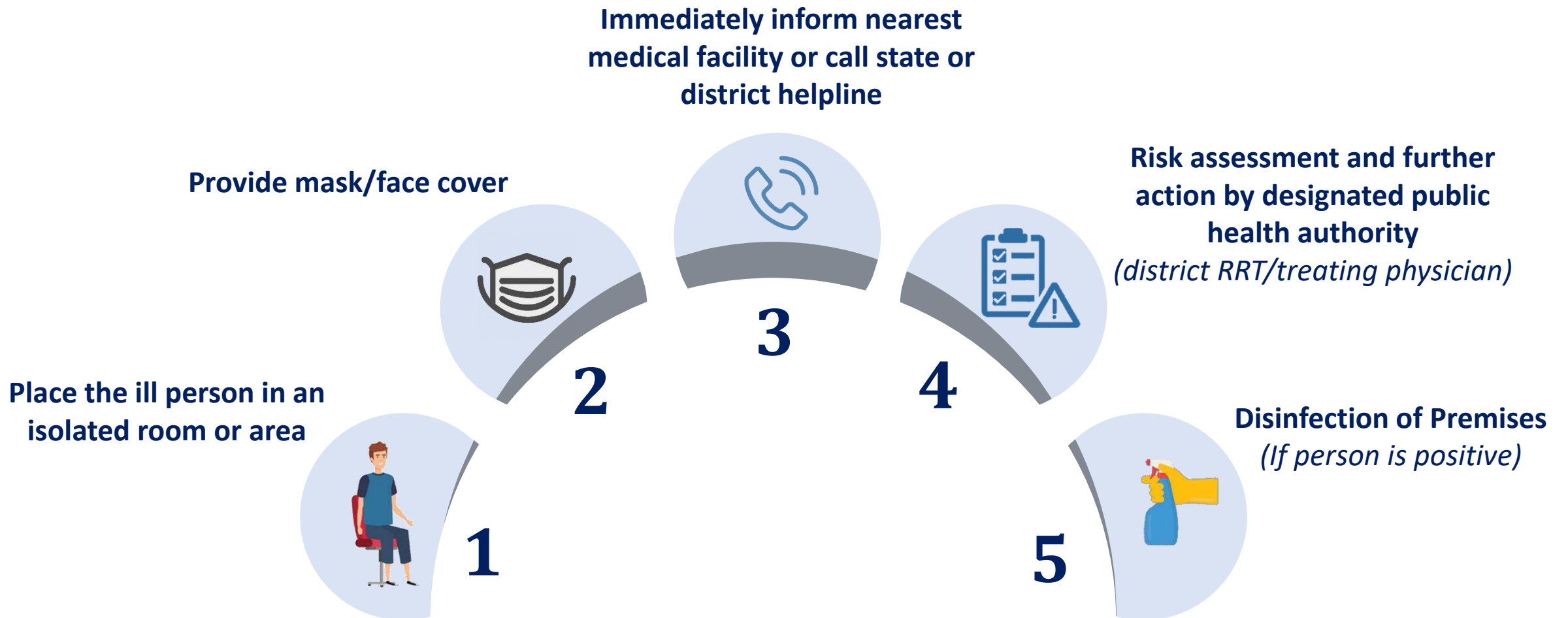


NOT Allowed - Physical offerings like Prasad/ distribution or sprinkling of holy water, etc.



Adequate Social Distancing (6 ft) at community kitchens/ langars / “Ann-daan” etc. while preparing and distributing food

Protocol for attending to suspect or confirmed case





Ministry of Health & Family Welfare
Government of India

Guidelines on preventive measures to contain spread of COVID-19 Restaurants

11th June 2020

Need for Covid Appropriate Behaviour



Every individual is at risk



If infected, you may spread infection to others in crowded places



You may put your family members at risk



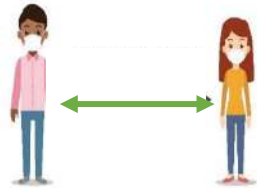
You may particularly put elders in your family at risk

As we progress in Unlock 1.0, to contain the spread of COVID-19, we need to follow Covid Appropriate Behavior at all times

Generic Preventive Measures



Use face covers/masks



Maintain adequate social distancing



Wash hands with soap/ sanitizers (as required)



Respiratory etiquettes

- Cover mouth & nose with tissue/ handkerchief/ flexed elbow
- Dispose off used tissues properly



Spitting is strictly prohibited



Thermal screening of all entrants and staff



Maintain 6ft distance while queuing for entry in public places



Staggering of visitors/patrons

Generic Preventive Measures



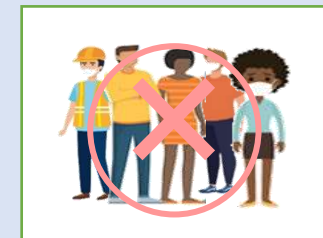
Self-monitor health
(Guest and staff)



Aarogya Setu app
(Recommended to Install & Use)

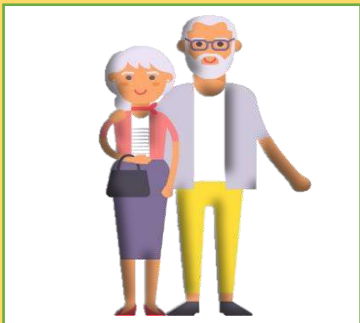


Immediate report illness
(To state and district helpline)



**Large gatherings/
congregation prohibited**

Who are advised to stay at home?



**People aged more than
65 years**



**Children aged less than
10 years**



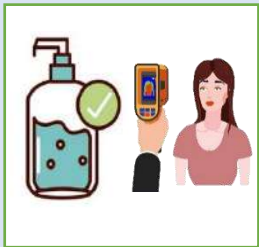
Pregnant Women



**Persons with comorbidities such
as hypertension, diabetes, etc**

Except for essential and health purposes

Restaurants – Specific Measures



Mandatory sanitizer dispensers and thermal screening provisions at entrance



Only asymptomatic staff and patrons allowed



Workers/Patrons/Staff to be allowed entry only if wearing masks



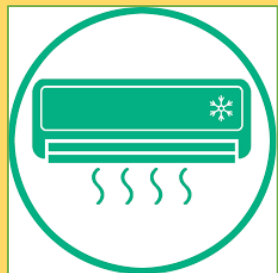
Separate entry and exit for patrons and good/supplies



Specific markings with sufficient distance for queue management and social distancing norms



Proper Crowd Management in Parking Lots and outside the premises



Air-conditioning
*(Temp of 24–30°C,
Relative humidity of
40–70%,
Intake of fresh air,
Cross ventilation)*



**Posters/ standees/
AV media on COVID
preventive
measures displayed
at all times**



**Cleaning and
regular disinfection**
*(using 1% sodium
hypochlorite of
frequently touched
surfaces)*



**Deep cleaning of
washrooms**



**Safe Disposal of
face covers/
masks/gloves**

Restaurants – Specific Measures



Avoid front-line work and take extra precaution for high risk employee

(older, pregnant employees and employees with underlying medical conditions)



Delivery and Takeaways to be encouraged, Packet to be left at the door, Staff for takeaway to be screened thermally

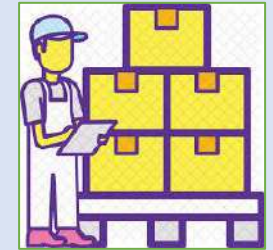


Additional patrons to be seated at designated waiting areas with norms of social distancing



Valet parking operational

(Face covers/ masks & gloves for staff and disinfection of steering, door handles, keys)



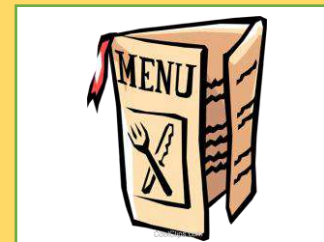
Precautions while handling supplies/inventories



Use of markings to maintain distance while queuing at the entrance or at buffet services



Seating arrangement to ensure not more than 50% of capacity is permitted



Disposable menus to be advised



Paper napkins instead of Cloth napkins



Adequate Manpower to be deployed by restaurants for ensuring social distancing norms

Restaurants – Specific Measures



Staff/waiters to wear masks and hand gloves



Staff to follow social distancing norms in the kitchen and Kitchen area to be sanitized at regular intervals



Frequent cleaning, sanitisation (focusing on lavatories, drinking and handwashing areas)



Tables to be sanitized each time customer leaves



Contact-less mode of ordering and digital mode of payment to be encouraged

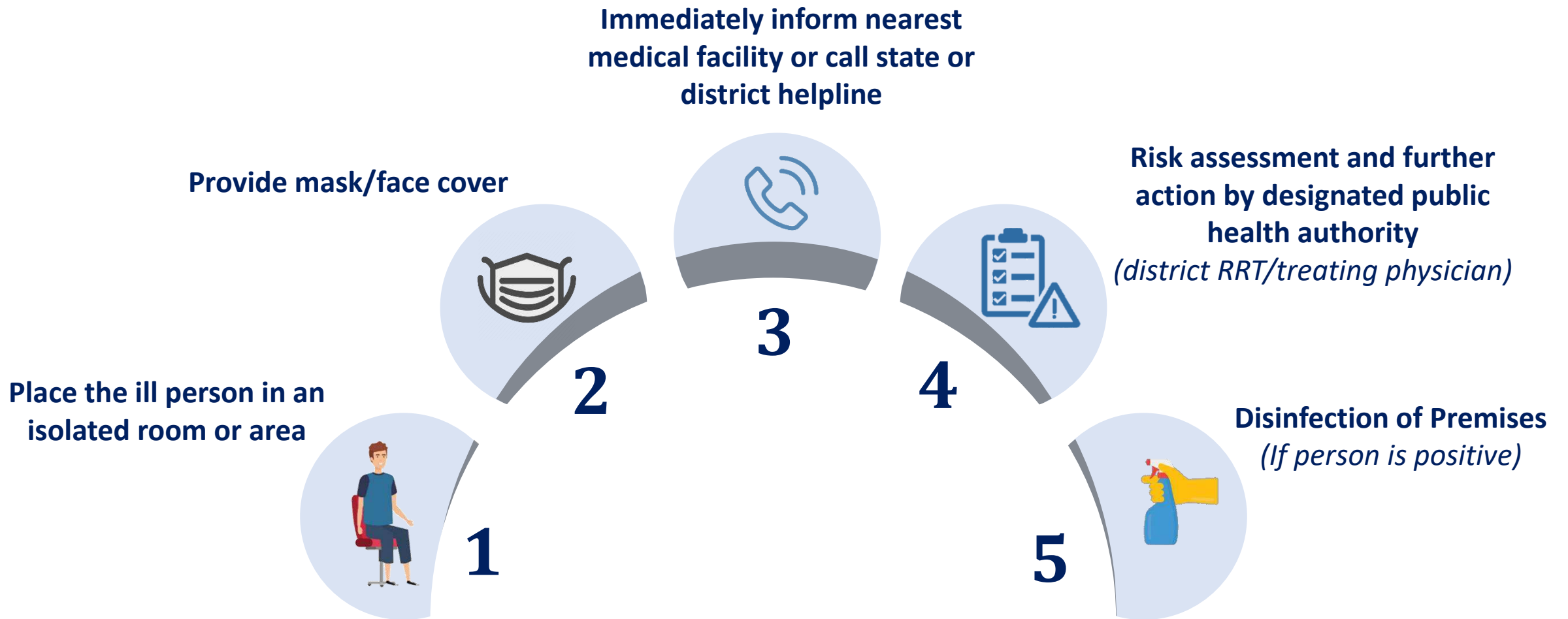


Gaming arcade/Children play area closed



**Restricted number of people in elevators
Use of escalators with one person on alternate steps may be encouraged**

Protocol for attending to suspect or confirmed case





Ministry of Health & Family Welfare
Government of India

Guidelines on preventive measures to contain spread of COVID-19 Shopping Malls

11th June 2020

Need for Covid Appropriate Behaviour



Every individual is at risk



If infected, you may spread infection to others in crowded places



You may put your family members at risk



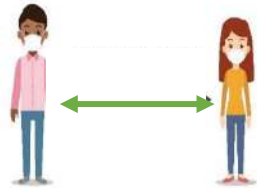
You may particularly put elders in your family at risk

As we progress in Unlock 1.0, to contain the spread of COVID-19, we need to follow Covid Appropriate Behavior at all times

Generic Preventive Measures



Use face covers/masks



Maintain adequate social distancing



Wash hands with soap/ sanitizers (as required)



Respiratory etiquettes

- Cover mouth & nose with tissue/ handkerchief/ flexed elbow
- Dispose off used tissues properly



Spitting is strictly prohibited



Thermal screening of all entrants and staff



Maintain 6ft distance while queuing for entry in public places



Staggering of visitors/patrons

Generic Preventive Measures



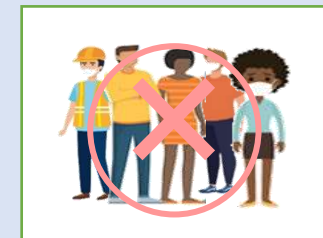
Self-monitor health
(Guest and staff)



Aarogya Setu app
(Recommended to Install & Use)

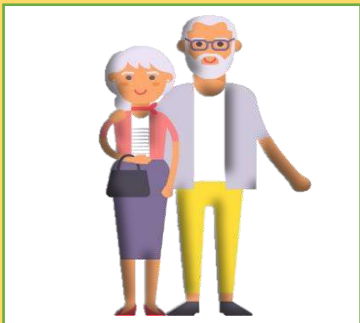


Immediate report illness
(To state and district helpline)



**Large gatherings/
congregation prohibited**

Who are advised to stay at home?



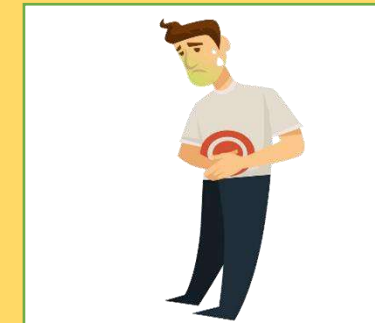
**People aged more than
65 years**



**Children aged less than
10 years**



Pregnant Women



**Persons with comorbidities such
as hypertension, diabetes, etc**

Except for essential and health purposes

Shopping Malls – Specific Measures



Mandatory sanitizer dispensers and thermal screening provisions at entrance



Only asymptomatic staff/guests/visitors allowed



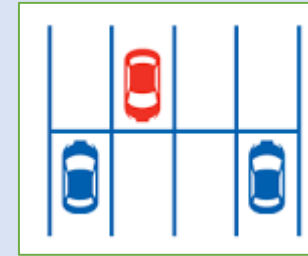
Workers/Customers/Visitors to be allowed entry only if wearing masks



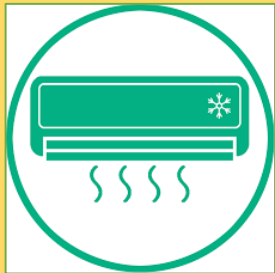
Separate entry and exit for visitors, workers & goods/supplies



Specific markings with sufficient distance for queue management and social distancing norms



Proper Crowd Management in Parking Lots and outside the premises



Air-conditioning
*(Temp of 24–30°C,
Relative humidity of
40–70%,
Intake of fresh air,
Cross ventilation)*



**Posters/ standees/
AV media on COVID
preventive
measures displayed
at all times**



**Effective and frequent
sanitation** *(esp.
lavatories, drinking
and hand/foot
washing stations)*



**Cleaning and
regular disinfection**
*(using 1% sodium
hypochlorite of
frequently touched
surfaces)*



**Deep cleaning of
washrooms**



**Safe Disposal of
face covers/
masks/gloves**

Shopping Malls – Specific Measures



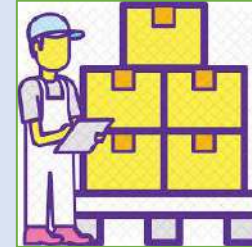
Avoid front-line work and take extra precaution for high risk employee
(older, pregnant employees and employees with underlying medical conditions)



Valet parking operational
(Face covers/ masks & gloves for staff and disinfection of steering, door handles, keys)



Shops/stalls/Cafeteria to follow social distancing within and outside premises



Precautions while handling supplies/inventories



Adequate Manpower to be deployed by Mall Management for ensuring social distancing norms



Staff for home deliveries to be screened thermally by shopping mall authorities



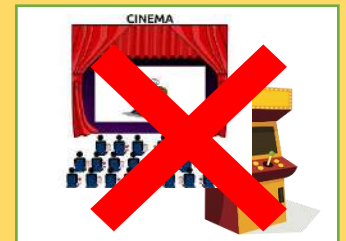
To maintain social distancing, No. of customers to be kept minimum inside shops



Restricted number of people in elevators
Use of escalators with one person on alternate steps

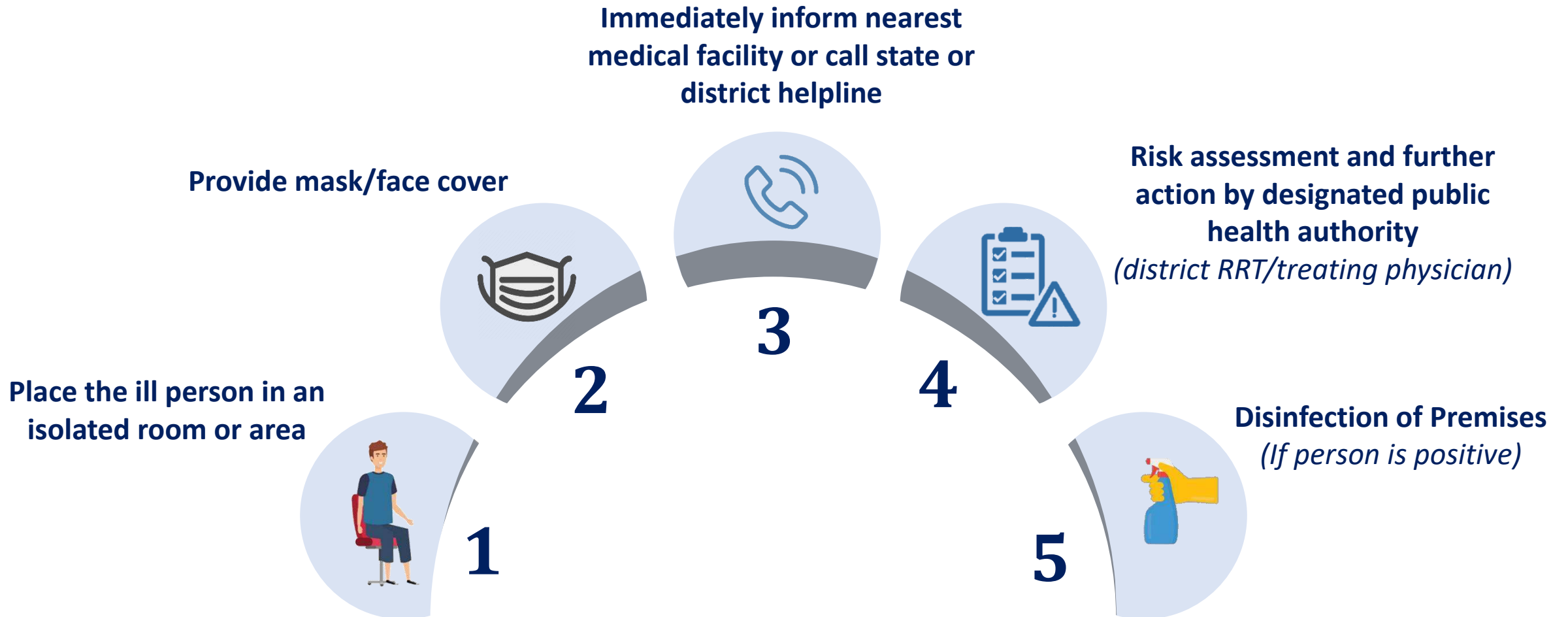


Food Courts/Restaurants to follow detailed guidelines on restaurants



Gaming arcade/Children play area/Cinema Halls remain closed

Protocol for attending to suspect or confirmed case





Ministry of Health & Family Welfare
Government of India

Guidelines on preventive measures to contain spread of COVID-19 Hotels

11th June 2020

Need for Covid Appropriate Behaviour



Every individual is at risk



If infected, you may spread infection to others in crowded places



You may put your family members at risk



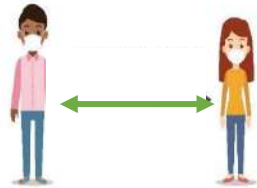
You may particularly put elders in your family at risk

As we progress in Unlock 1.0, to contain the spread of COVID-19, we need to follow Covid Appropriate Behavior at all times

Generic Preventive Measures



Use face covers/masks



Maintain adequate social distancing



Wash hands with soap/ sanitizers (as required)



Respiratory etiquettes

- Cover mouth & nose with tissue/ handkerchief/ flexed elbow
- Dispose off used tissues properly



Spitting is strictly prohibited



Thermal screening of all entrants and staff



Maintain 6ft distance while queuing for entry in public places



Staggering of visitors/patrons

Generic Preventive Measures



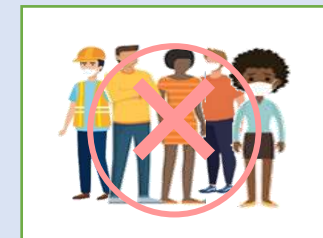
Self-monitor health
(Guest and staff)



Aarogya Setu app
(Recommended to Install & Use)

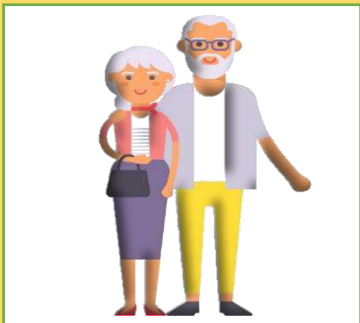


Immediate report illness
(To state and district helpline)



**Large gatherings/
congregation prohibited**

Who are advised to stay at home?



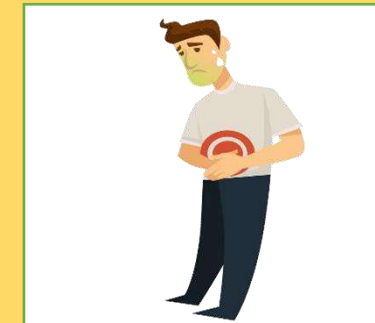
**People aged more than
65 years**



**Children aged less than
10 years**



Pregnant Women



**Persons with comorbidities such
as hypertension, diabetes, etc**

Except for essential and health purposes

Hotels – Specific Measures



Mandatory sanitizer dispensers and thermal screening provisions at entrance



Only asymptomatic staff/guests allowed



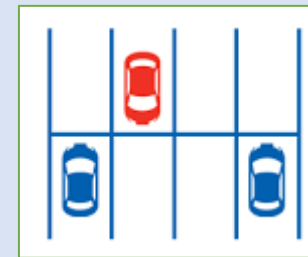
Workers/Customers/Visitors/Staff to be allowed entry only if wearing masks



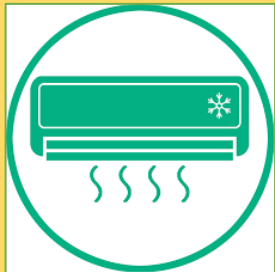
Separate entry and exit for guests, staff and goods/supplies



Specific markings with sufficient distance for queue management and social distancing norms



Proper Crowd Management in hotel & outside the premises like parking lot



Air-conditioning
(Temp of 24–30°C, Relative humidity of 40–70%, Intake of fresh air, Cross ventilation)



Posters/ standees/ AV media on COVID preventive measures displayed at all times



Effective and frequent sanitation *(esp. lavatories, drinking and hand/foot washing stations)*



Cleaning and regular disinfection
(using 1% sodium hypochlorite of frequently touched surfaces)



Deep cleaning of washrooms



Safe Disposal of face covers/ masks/gloves

Hotels – Specific Measures



Avoid front-line work and take extra precaution for high risk employee
(older, pregnant employees and employees with underlying medical conditions)



Staff to additionally wear hand gloves



Valet parking operational
(Face covers/ masks & gloves for staff and disinfection of steering, door handles, keys)



Restricted number of people in elevators
Use of escalators with one person on alternate steps



Adequate Manpower to be deployed by Hotels for ensuring social distancing norms



Hand sanitizers to be kept at reception for guests to use before filling forms and A&D register



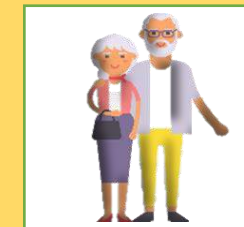
Travel history, medical condition and Self declaration form to be filled



Contactless payments for both check-in and check-out



Luggage to be disinfected before sending to the room



Guests above 60 years of age to take extra precautions



Guests should not visit containment zone

Hotels – Specific Measures



Precautions while handling supplies/inventories/goods



Personal Protection gear shall be made available by hotel to staff



Restaurants, if operational to follow detailed guidelines for restaurants



Gaming arcade/Children play area closed



Room service to be encouraged, instead of dine-in. Packet to be left at the door. Staff for takeaway to be screened thermally



Communication between guests and in-house staff should be through intercom or mobile phone

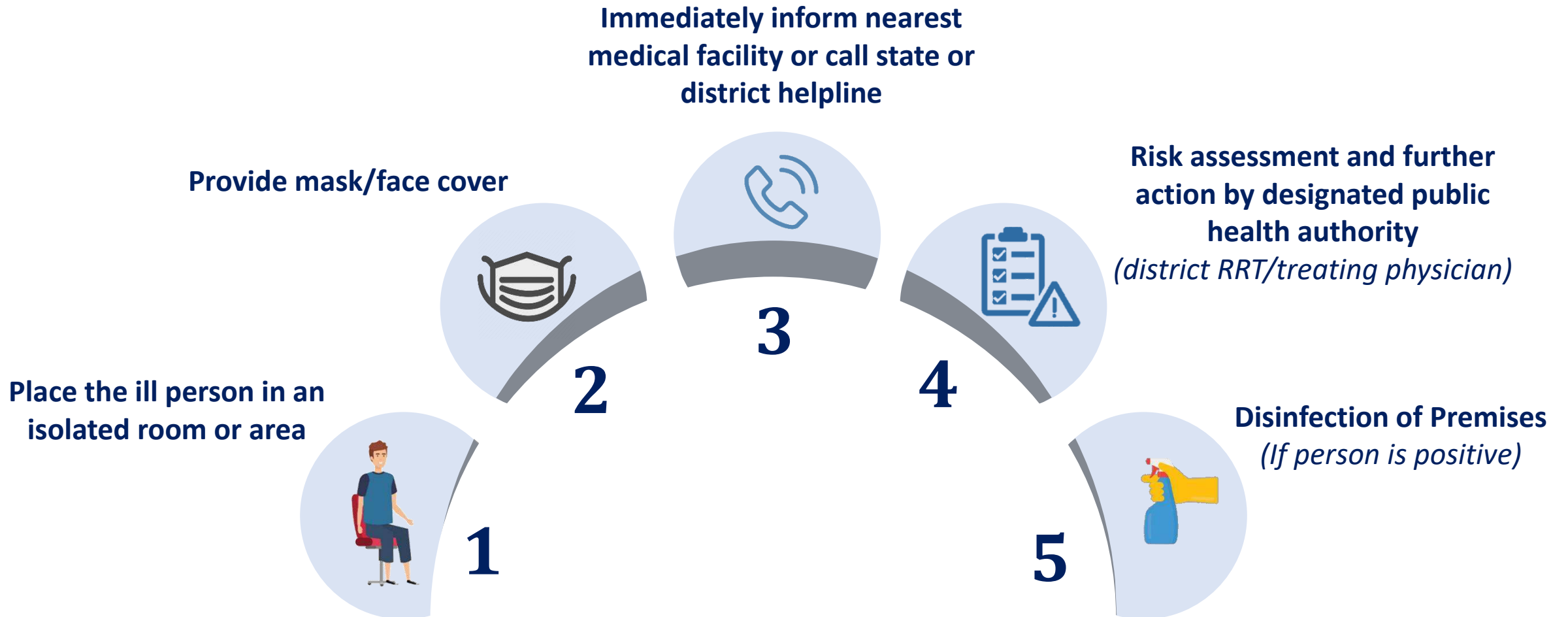


Rooms and service areas to be sanitized after guest leaves/checks out



Staff to follow social distancing norms in the kitchen and Kitchen area to be sanitized at regular intervals

Protocol for attending to suspect or confirmed case



Infant and Young Child Feeding Recommendations When COVID-19 is Suspected or Confirmed:

Recommended Practices Booklet



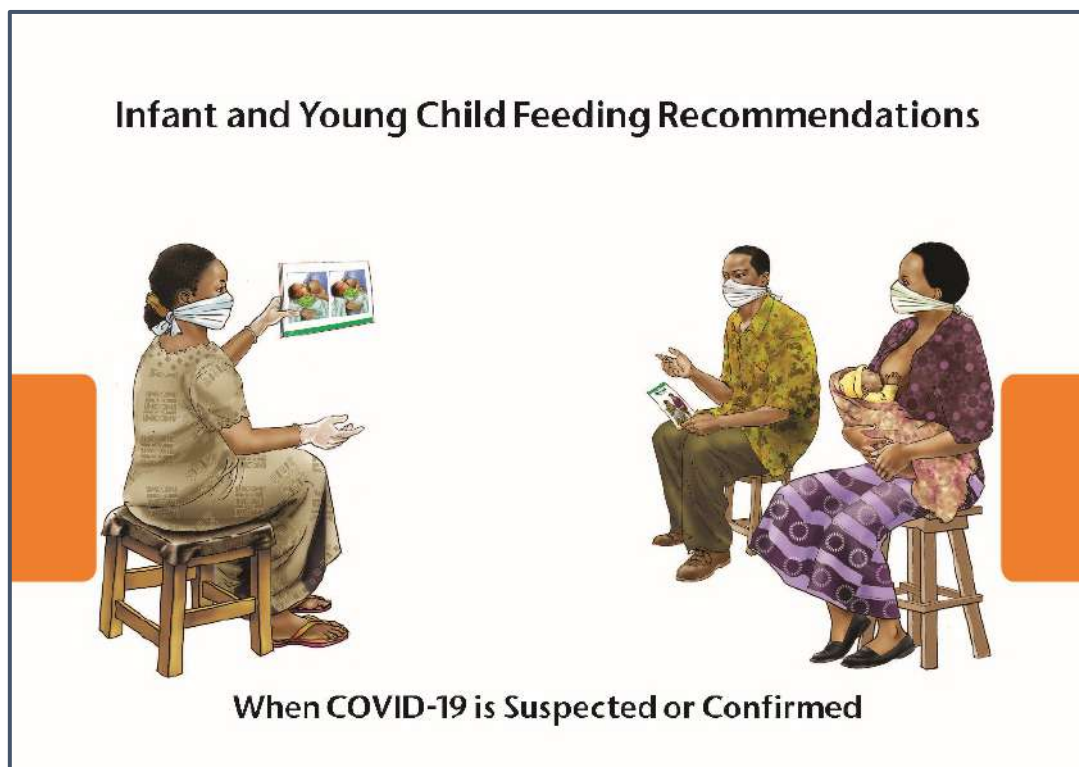
<p>Actions needed to prevent the spread of COVID-19</p>	<p>Take precautions during delivery and rooming-in</p>
<p>Take precautions when breastfeeding, day and night</p>	<p>Wash hands with soap to prevent spread of COVID-19</p>
<p>Wash hands for 20 seconds following these steps</p>	<p>Practice food safety and prepare clean water</p>
<p>Practice safe complementary feeding</p>	<p>When to seek advice from the health facility</p>
<p>How to hand express breast milk and cup feed</p>	<p>If you give infant formula while recovering from the virus</p> <p>Safely mix and feed the infant formula</p>

April 2020

Infant and Young Child Feeding Recommendations When COVID-19 is Suspected or Confirmed

Recommended Practices Booklet

April 2020



Acknowledgments:

The development of the *Infant and Young Child Feeding Recommendations When COVID-19 is Suspected or Confirmed Package*, including *Counselling Cards* and *Recommended Practices Booklet*, is the result of the collaborative efforts of multiple agencies during the conceptualization, development, field testing, and finalization of these generic tools. The work was led by UNICEF and USAID Advancing Nutrition, with the support of the Infant Feeding in Emergencies (IFE) Core Group, represented by Save the Children and Safely Fed Canada.

We greatly appreciate the UNICEF and Save the Children country and regional offices that supported review and enhancement of the counselling cards through their inputs and the field testing, engaging professionals, Infant and Young Child Feeding (IYCF) counsellors, health workers, and mothers from different cultures, countries, and contexts. We are also grateful for the technical review by the World Health Organization, which helped to ensure consistency and harmonization of the recommended practices with the broader technical and scientific recommendations.

Lastly, we would like to recognize the financial support provided by USAID that allowed us to engage with qualified artists and behavior change professionals in translating the latest global guidance on IYCF in the context of COVID-19 issued by WHO and UNICEF in March 2020. These user-friendly graphic materials are designed to be adapted to local contexts and may be periodically updated to reflect new or emerging evidence.

Disclaimer: This document was produced with the support of the U. S. Agency for International Development. It was prepared under the terms of contract 7200AA18C00070 awarded to JSI Research & Training Institute, Inc. The contents are the responsibility of JSI and do not necessarily reflect the views of USAID or the U.S. Government.

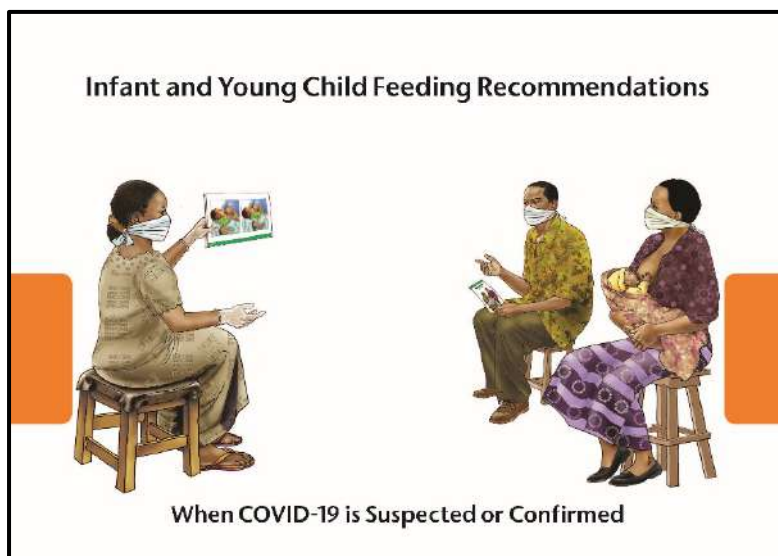
Key references for the recommended practices:

- WHO. *Clinical management of severe acute respiratory infection (SARI) when COVID-19 disease is suspected*. Interim Guidance, March 13, 2020. [https://www.who.int/publications-detail/clinical-management-of-severe-acute-respiratory-infection-when-novel-coronavirus-\(ncov\)-infection-is-suspected](https://www.who.int/publications-detail/clinical-management-of-severe-acute-respiratory-infection-when-novel-coronavirus-(ncov)-infection-is-suspected)
- WHO. *Home care for patients with COVID-19 presenting with mild symptoms and management of their contacts*. Interim Guidance. March 17, 2020. [https://www.who.int/publications-detail/home-care-for-patients-with-suspected-novel-coronavirus-\(ncov\)-infection-presenting-with-mild-symptoms-and-management-of-contacts](https://www.who.int/publications-detail/home-care-for-patients-with-suspected-novel-coronavirus-(ncov)-infection-presenting-with-mild-symptoms-and-management-of-contacts)
- UNICEF, GNC, GTAM. *Infant and Young Child Feeding in the context of Covid 19*. Brief no. 2 v.1, March 30, 2020. https://www.nutritioncluster.net/sites/default/files/2020-04/IYCF%20Programming%20in%20the%20context%20of%20COVID-19%20Brief%202_v1%2030%20March%202020_%20corrected%20for%20distribution.pdf
- WHO. *5 keys to safer food*. https://www.who.int/foodsafety/publications/consumer/en/5keys_en.pdf?ua=1
- UNICEF. *Community Infant and Young Child Feeding (C-IYCF) Counselling Package*. https://www.unicef.org/nutrition/index_58362.html

Counselling Cards: Recommended Practices

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Infant and Young Child Feeding Recommendations When COVID-19 is Suspected or Confirmed



Notes for health care providers and counsellors:

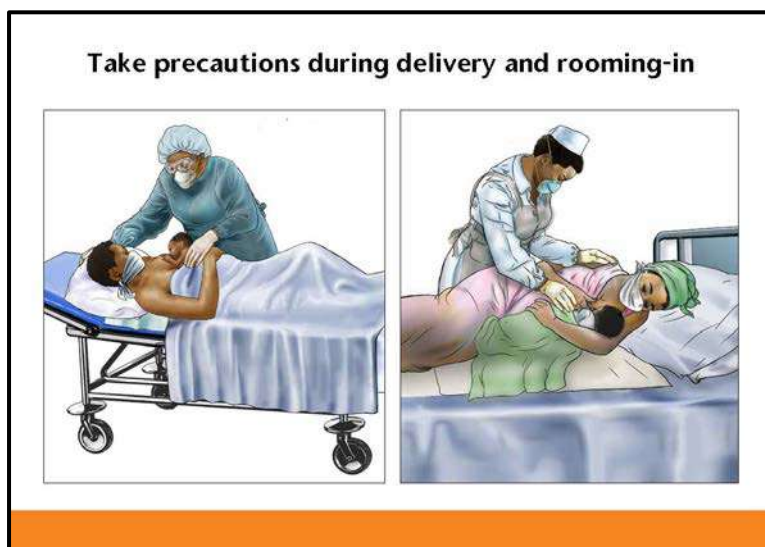
- All recommended IYCF practices remain the same, based on global guidelines:
 - ✓ Initiate breastfeeding within 1 hour of birth
 - ✓ Exclusively breastfeed for the first 6 months
 - ✓ Introduce age-appropriate, adequate, safe, and properly fed complementary foods starting from 6 months up to 2 years of age
 - ✓ Continue breastfeeding for up to 2 years of age or beyond.
- Refer to the *Key Messages Booklet* in the UNICEF *Community Infant and Young Child Feeding Counselling Package* for additional important information about complementary feeding (https://www.unicef.org/nutrition/files/Key_Message_Booklet_2012_small.pdf).
- Health care providers should re-assure and support all mothers to initiate and continue to breastfeed their infants – even if they are suspected or confirmed to have COVID-19.
- To date, the virus has not been found in amniotic fluid or breast milk, which means that the virus is not being transmitted during pregnancy or through breast milk.
- Some mothers may need extra support in feeding their infants while they are recovering from COVID-19.
- These user-friendly graphic materials are designed to be adapted to local contexts and may be periodically updated to reflect new or emerging evidence.

1. Actions needed to prevent the spread of COVID-19



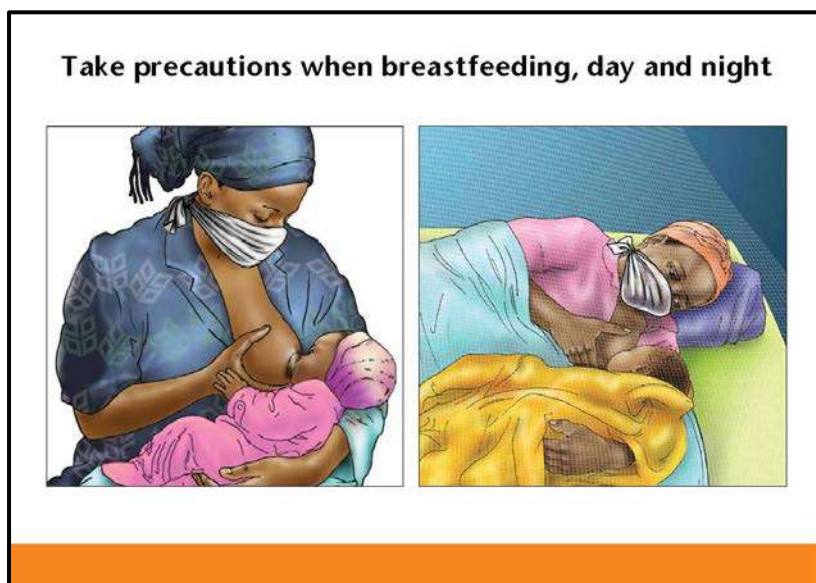
- Wash your hands frequently with soap and clean running water for 20 seconds. Washing hands with soap kills the COVID-19 virus.
- Ask family members to wash their hands with soap and clean running water for 20 seconds.
- Wear a medical mask when available or a cloth face covering when feeding or caring for your baby.
- Ask family members and others who are caring for your baby to use a medical mask when available or a cloth face covering.
- Do not touch your face, nose, or eyes, and ask family members and other to avoid touching their face, nose, or eyes.
- If you, or others, have to cough or sneeze, cover your mouth and nose with your bent elbow or use a tissue to prevent droplets from spraying. Safely dispose of used tissues after use and wash your hands with soap and clean running water.
- Clean frequently touched surfaces with soap and water if you have or suspect you have COVID-19.
- Practice physical distancing. Stay at least 1 meter away from other persons. Two meters are suggested.
- Stay at home and avoid going to market, crowded places, or any public events.
- Ask family members to stay at home and avoid going to market, crowded places, or any public events.
- If someone needs to go out to buy food, fetch water, buy medicines, or visit the health center, avoid crowds, and practice physical distancing as much as possible.

2. Take precautions during delivery and rooming-in



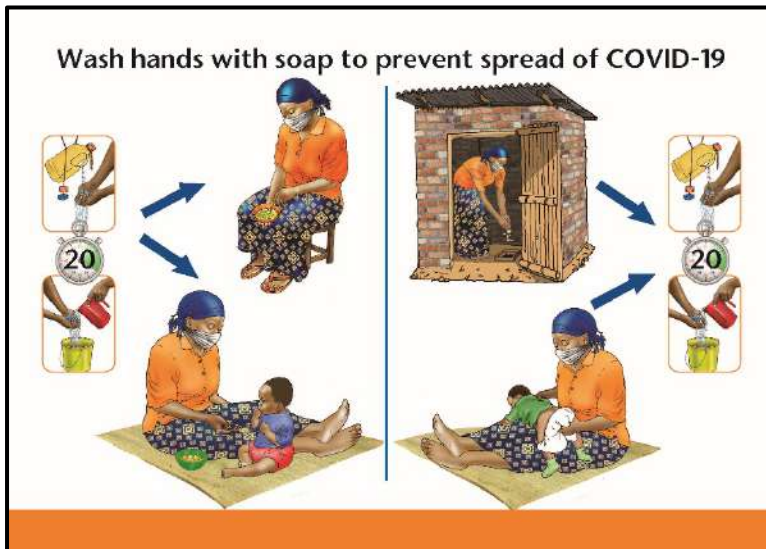
- If you are suspected or confirmed to have COVID-19, the health workers will take extra precautions when you deliver to help protect your baby, and to protect others in the hospital or maternity clinic.
- The health worker will wear extra protective coverings and will help you wear a medical mask when available or a cloth face covering when your baby is given to you to hold and breastfeed.
- Holding your baby skin-to-skin immediately after birth will keep your baby warm and breathing well, help him or her reach the breast easily, and help you and your baby feel close.
- Begin breastfeeding within the first hour of birth. Early breastfeeding helps the baby learn to breastfeed while the breast is still soft.
- Colostrum, the first milk, protects your baby from illness and infections.
- Stay together with your newborn during the whole time you are in the hospital or clinic.
- The health worker will wear extra protective coverings and will help you wear a medical mask when available or a cloth face covering, especially when you are holding and breastfeeding your baby.
- Breastfeed frequently to help your breast milk 'come in' and to ensure that you produce plenty of breast milk for your baby.
- Do not give water or any other liquids to your baby during the first days after birth and avoid giving water or any other liquids up until your baby is 6 months of age.
- When you go home from the hospital or maternity clinic, you will need extra rest and extra help in caring for your baby while you continue to recover from COVID-19.

3. Take precautions when breastfeeding, day and night



- To help protect your baby while you are recovering from COVID-19, wash your hands with soap and clean running water for 20 seconds before and after contact with your baby.
- Ask family members and others who are helping to take care of the baby to wash their hands with soap and clean running water for 20 seconds.
- Wear a medical mask when available or a cloth face mask or cloth face covering when feeding or caring for baby until you recover fully.
- If you, or others who are around the baby, have to cough or sneeze, cover your mouth and nose with your bent elbow or use a tissue to prevent droplets from spraying. Safely dispose of used tissues after use and wash your hands with soap and clean running water afterwards.
- Breastfeeding helps to protect your baby even if you are infected
- All recommended breastfeeding practices remain the same.
 - ✓ Breastfeed on demand, day and night.
 - ✓ Breastfeed exclusively for 6 months. Your breast milk provides all the food and water that your baby needs during this time. Breast milk also protects your baby against sickness or infection.
 - ✓ Do not give any other food or liquids to your baby, not even water, during your baby's first 6 months.
 - ✓ Even during very hot weather, breast milk will satisfy your baby's thirst.
 - ✓ Giving your baby anything other than breast milk will cause him or her to suckle less and will reduce the amount of breast milk that you produce and may make your baby sick.

4. Wash hands with soap to prevent spread of COVID-19



- Washing hands with soap and clean running water for 20 seconds is critical to fighting the spread of COVID-19, and is important for the health of your baby, and your entire family.
- Always wash your hands during these critical times:
 - ✓ Before preparing and eating foods
 - ✓ Before feeding infants and young children
 - ✓ After using the toilet or latrine
 - ✓ After cleaning your baby's bottom
- It is also important to wash hands frequently, especially after blowing your nose, coughing or sneezing into a tissue, cleaning your home and compound, after practicing agriculture, and after handling livestock or other animals.

5. Wash hands for 20 seconds following these steps



- Always spend at least 20 seconds carefully washing your hands and your children's hands. Follow these steps:
 1. Wet your hands with clean running water.
 2. Create foam in your hands by rubbing them together with the soap.
 3. Rub your palms together.
 4. Interlock your fingers and rub them together (back and front).
 5. Rub each thumb.
 6. Rub around your wrists and up toward your elbows.
 7. Clean under your fingernails.
 8. After at least 20 seconds of scrubbing, rinse your hands with clean running water.
 9. Shake your hands dry in the air.

6. Practice food safety and prepare clean water



- While you are recovering from the virus, encourage other family members to help safely prepare food and clean water.
- Always wash hands with soap and running water before and after preparing food.
- Wear a medical mask when available or a cloth face covering when preparing food.
- Use safe water for drinking and cooking. If you are not sure about the safety of the water, boil it. You can also use a small amount of bleach (chlorine), a water treatment product, or a water filter system.
- If possible, use dedicated eating utensils for those suspected/confirmed. These utensils should be cleaned with soap and clean water after use.
- Carefully clean all pots, dishes, bowls, and utensils with soap and water, and store them in a clean, safe place.
- Wash and rinse raw fruits, and vegetables well with safe water before cooking and eating them.
- Clean all food preparation areas, including tables and cutting boards, with soap and clean water.
- Keep raw meat, fish, and poultry separate from other foods before cooking, to prevent spreading germs.
- Cook meat, fish, and eggs thoroughly.
- Serve food immediately after preparation.
- Feed your baby using clean hands, his or her own clean bowl and spoon, clean utensils, and clean cups.
- Prepared food should be given to the young child within 2 hours of cooking. Reheat cooked food thoroughly.

7. Practice safe complementary feeding



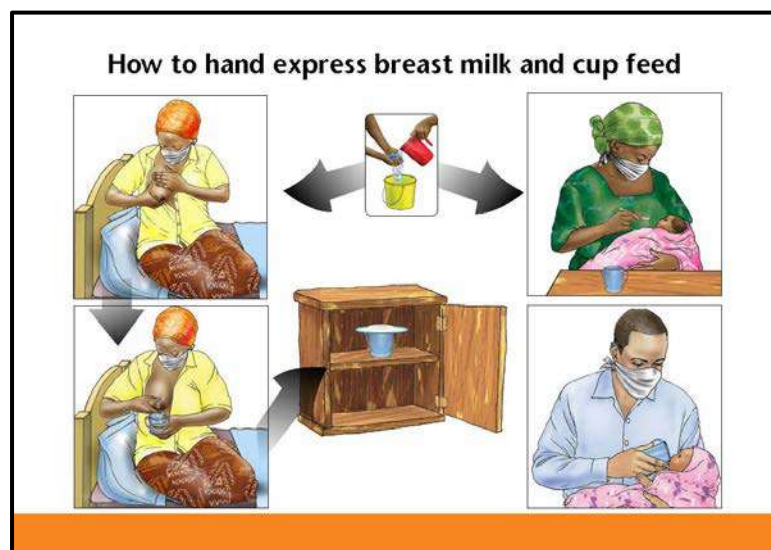
- If you or others in your family are recovering from COVID-19, it is especially important to practice safe complementary feeding, starting at 6 months of age up to 24 months.
- Wash your hands, and have others wash their hands, with soap and clean running water for 20 seconds before preparing foods and before feeding your baby.
- Clean food preparation areas, including tables and cutting boards, with soap and clean water.
- If you or others have COVID-19, wear a medical mask when available or a cloth face covering when feeding the baby.
- If you or others have to cough or sneeze, cover your mouth and nose with your bent elbow or use a tissue to prevent droplets from spraying. Safely dispose of used tissues and wash your hands with soap and clean running water afterwards.
- Feed your baby from his or her own clean spoon and bowl.
- All recommended complementary feeding practices remain the same. Follow national recommendations on complementary feeding practices regarding frequency, amount, thickness, variety, responsive feeding, and hygiene.
- Feed your baby with care. Be patient and actively encourage your baby to eat. Do not force your baby to eat.
- When possible, try to give your baby a variety of foods, including fruits, vegetables, legumes and animal source foods such as eggs, meat, poultry, organ meats, fish, and dairy products.
- Do not give foods that are high in sugar, salt, and fat, such as fried foods, sweets, juices and salted snacks. These foods are not healthy for your child.
- Do not give foods that are pre-chewed to your child.
- If your child gets sick, he or she will need extra fluids and foods to recover faster. Breastfeed your child more often and encourage your child to eat soft and appetizing foods during sickness.
- After sickness, feed your child more often than usual for about two weeks, to help your child regain strength.

8. When to seek advice from the health facility



- It is important to continue to take your child for routine immunizations, following your national immunization schedule.
- Continue with follow-up services according to local recommendations. Appointment frequency and locations may change.
- If you are not well, ask a family member who is well to take your child for immunizations and follow-up services, and to ask questions about your child's growth, health, and nutrition.
- Take your child immediately to a trained health worker or clinic if any of the following symptoms are present:
 - ✓ COVID-19 symptoms, including fever, dry cough, and difficulty in breathing
 - ✓ Refusal to feed and limp, or weak
 - ✓ Vomiting (cannot keep anything down)
 - ✓ Diarrhoea (more than 3 loose stools a day for two days or more and/or blood in the stool, sunken eyes)
 - ✓ Convulsions (rapid and repeated contractions of the body, shaking)
 - ✓ The lower part of the chest sucks in when the child breathes in, or it looks as though the stomach is moving up and down (respiratory infection)
 - ✓ Fever
 - ✓ Malnutrition (visible thinness or swelling of the body)

9. How to hand express breast milk and cup feed



Why express breast milk?

- A mother can express her own breast milk:
 - ✓ To help establish or maintain milk production if health worker recommends separation from her baby, until she recovers
 - ✓ When she wants to re-establish her milk production after being separated from the baby
 - ✓ When she knows she is going to be away from her baby and miss a feeding

Steps in expressing breast milk:

- Wear a medical mask when available or a cloth face covering while preparing and expressing your milk.
- Wash your hands with soap and clean running water for 20 seconds.
- The cup or container you use to collect breast milk should be clean.
- Get comfortable.
- It is sometimes helpful to gently stroke or massage your breasts. A warm cloth may help stimulate the flow of milk.
- Put your thumb on the breast above the dark area around the nipple (areola) and the other fingers on the underside of the breast behind the areola.
- With your thumb and first two fingers press a little bit in towards chest wall and then press gently towards the dark area (areola).
- Milk may start to flow in drops, or sometimes in fine streams. Collect the milk in the clean container.
- Avoid rubbing the skin, which can cause bruising, or squeezing the nipple, which stops the flow of milk.
- Rotate the thumb and finger positions and press or compress and release all around the areola.
- Express one breast for at least 3 to 5 minutes until the flow slows, then express the other breast, then repeat both sides again (20 to 30 minutes total).

How to store and feed expressed breast milk:

- Clean the exterior of the cup or container with soap and water before storing.
- Store breast milk in a clean, covered container.
- Breast milk can be stored for about 8 hours at room temperature (in the shade) and up to 24 hours in the refrigerator.
- Wear a medical mask when available or a cloth face covering when feeding the baby if you have any signs of being infected by COVID-19 or if you have been exposed to someone with COVID-19.
- Pour just enough breast milk from the clean covered container into the feeding cup. Ask health worker to show you.
- Give baby expressed breast milk from a cup. Bring cup to rest against the corners of baby's upper lip and allow baby to take small amounts of milk, lapping the milk with his or her tongue. Do not pour the milk into baby's mouth.
- Bottles are unsafe to use because they are difficult to wash and can spread germs to baby.

Note: Feeding a baby who is younger than 6 months any other foods or liquids, including animal milks or water, increases the chances of the baby becoming sick.

10. If you give infant formula while recovering from the virus



Safely mix and feed the infant formula:

- Giving infant formula may be recommended as a last resort while a mother is recovering from COVID-19, and until breastfeeding can be established or re-established.
- If you give infant formula while recovering from the virus, it is very important that you safely mix and feed the infant formula

Safely mix the infant formula using these steps:

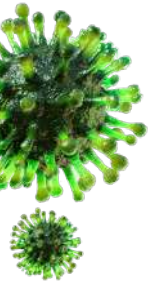
- Wear a medical mask when available or a cloth face covering when preparing the infant formula.
- Wash your hands with soap and clean running water for 20 seconds before starting to prepare infant formula.
- Clean all surfaces and boil equipment to sanitize.
- Read and follow the instructions that are printed on the tin very carefully. Ask for more explanation if you do not understand.
- Only prepare as much as the baby will need within one hour.
- Carefully measure the amount of clean boiled or treated water to mix with the dry infant formula.
- Carefully measure the amount of dry infant formula required.
- Mix the dry infant formula and water until all the powder is completely dissolved.

How to feed infant formula to your baby:

- Wear a medical mask when available or a cloth face covering when feeding the infant formula.
- Wash your hands with soap and clean running water for 20 seconds before starting to feed infant formula.
- Give baby infant formula from a cup that has been cleaned and boiled.

- Bring cup to the baby's lower lip and allow baby to take small amounts of milk, lapping the milk with his or her tongue. Do not pour the milk into baby's mouth.
- Bottles are unsafe to use because they are difficult to wash and can spread germs to baby.

Note: Feeding a baby who is younger than 6 months any other foods or liquids, including animal milks or water, increases the chances of the baby becoming sick.



FREQUENTLY ASKED QUESTIONS: Breastfeeding and COVID-19 For health care workers

(28 April 2020)



Preface

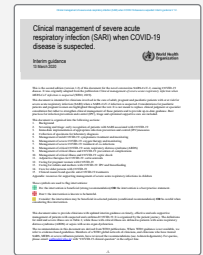
This FAQ complements the WHO interim guidance: *Clinical management of severe acute respiratory infection (SARI) when COVID-19 disease is suspected* (13 March 2020 - [www.who.int/publications-detail/clinical-management-of-severe-acute-respiratory-infection-when-novel-coronavirus-\(ncov\)-infection-is-suspected](http://www.who.int/publications-detail/clinical-management-of-severe-acute-respiratory-infection-when-novel-coronavirus-(ncov)-infection-is-suspected)) and provides responses to questions that have arisen about the recommendations.

The interim guidance and FAQ reflect:

- i. the available evidence regarding transmission risks of COVID-19 through breastmilk;
- ii. the protective effects of breastfeeding and skin-to-skin contact, and,
- iii. the harmful effects of inappropriate use of infant formula milk.

The FAQ also draws on other WHO recommendations on Infant and Young Child Feeding and the Interagency Working Group Operational Guidance on Infant and Young Child Feeding in Emergencies. A decision tree shows how these recommendations may be implemented by health workers in maternity services and community settings, as part of daily work with mothers and families.

www.who.int/news-room/q-a-detail/q-a-on-covid-19-and-breastfeeding



1. Can COVID-19 be passed through breastfeeding?

The COVID-19 virus has not, to date, been detected in the breastmilk of any mother with confirmed/suspected COVID-19. It appears unlikely, therefore, that COVID-19 would be transmitted through breastfeeding or by giving breastmilk that has been expressed by a mother who is confirmed/suspected to have COVID-19. Researchers continue to test breastmilk from mothers with confirmed/suspected COVID-19.

regulation of newborns and several other physiological outcomes, and is associated with reduced neonatal mortality. Placing the newborn close to the mother also enables early initiation of breastfeeding which also reduces neonatal mortality.

The numerous benefits of skin-to-skin contact and breastfeeding substantially outweigh the potential risks of transmission and illness associated with COVID-19.

2. In communities where COVID-19 is prevalent, should mothers breastfeed?

Yes. In all socio-economic settings, breastfeeding improves survival and provides lifelong health and development advantages to newborns and infants. Breastfeeding also improves the health of mothers. In contrast, transmission of COVID-19 through breastmilk and breastfeeding has not been detected. There is no reason to avoid or stop breastfeeding.

4. If a mother is confirmed/suspected to have COVID-19, should she continue breastfeeding?

Yes. The transmission of the COVID-19 virus through breastmilk and breastfeeding has not been detected. While breastfeeding, a mother should still implement appropriate hygiene measures, including wearing a medical mask if available, to reduce the possibility of droplets with COVID-19 being spread to her infant.

Mothers and families can be advised that among the few cases of confirmed COVID-19 infection in children, most have experienced only mild or asymptomatic illness.

3. Following delivery, should a baby still be immediately placed skin-to-skin and breastfed if the mother is confirmed/suspected to have COVID-19?

Yes. Immediate and continued skin-to-skin care, including kangaroo mother care, improves thermal

In contrast, there is high quality evidence showing that breastfeeding reduces neonatal, infant and child mortality including in high resource settings and improves lifelong health and development in all geographies and economic settings.

5. What are the hygiene recommendations for a breastfeeding mother confirmed/suspected to have COVID-19?

If a mother is confirmed/suspected to have COVID-19 she should:

- Wash hands frequently with soap and water or use alcohol-based hand rub, especially before touching the baby
- Wear a medical mask while feeding. It is important to:
 - Replace masks as soon as they become damp
 - Dispose of masks immediately
 - Not re-use a mask
 - Not touch the front of the mask but untie it from behind
- Sneeze or cough into a tissue, immediately dispose of it and use alcohol-based hand rub or wash hands again with soap and clean water
- Regularly clean and disinfect surfaces

6. If a mother confirmed/suspected to have COVID-19 does not have a medical face mask should she still breastfeed?

Yes. Breastfeeding unquestionably reduces neonatal and infant mortality and provides numerous lifelong health and brain development advantages to the infant/child. Mothers with symptoms of COVID-19 are advised to wear a medical mask, but even if this is not possible, breastfeeding should be continued. Other infection prevention measures, such as washing hands, cleaning surfaces, sneezing or coughing into a tissue are also important.

Non-medical masks (e.g. home-made or cloth masks) have not been evaluated. At this time, it is not possible to make a recommendation for or against their use.

7. Is it necessary for a mother with confirmed/suspected COVID-19 to wash her breast before she breastfeeds directly or before expressing milk?

If a mother is confirmed/suspected to have COVID-19 has just coughed over her exposed breast or chest, then she should gently wash the breast with soap and warm water for at least 20 seconds prior to feeding.

It is not necessary to wash the breast before every breastfeed or prior to expressing milk.

8. If a mother confirmed/suspected to have COVID-19 is not able to breastfeed what is the best way to feed her newborn/infant?

The best alternatives to breastfeeding a newborn or young infant are:

• *Expressed breastmilk*

- Expression of breastmilk is primarily done or taught through hand expression, with the use of a mechanical pump only when necessary. Hand expression and using a pump can be equally effective.
- The choice of how to express will depend on maternal preference, availability of equipment, hygiene conditions and cost.
- Expressing breastmilk is also important to sustain milk production so that mothers can breastfeed when they recover.
- The mother, and anyone helping the mother, should wash their hands before expressing breastmilk or touching any pump or bottle parts and ensure proper pump cleaning after each use. (See question 10 below)
- The expressed breastmilk should be fed to the child preferably using a clean cup and/or spoon (easier to clean), by a person who has no signs or symptoms of illness and with whom the baby feels comfortable. The mother/caregiver should wash their hands before feeding the newborn/infant.

• *Donor human milk*

- If the mother is unable to express milk and milk is available from a human milk bank, donor human milk can be fed to the baby while the mother is recovering.

• *If expressing breastmilk or donor human milk are not feasible or available then consider:*

- Wet-nursing (see question 11 below)
- Infant formula milk with measures to ensure that it is feasible, correctly prepared, safe and sustainable.

9. Is it safe to give expressed breastmilk from a mother confirmed/suspected to have COVID-19?

Yes. The COVID-19 virus has not, to date, been detected in the breastmilk of any mother confirmed/suspected to have COVID-19. It is unlikely that the virus can be transmitted by giving breastmilk that has been expressed by a mother with confirmed/suspected COVID-19.

10. If a mother with confirmed/suspected COVID-19 is expressing her milk for her baby, are there extra measures needed when handling the breastmilk pump, milk storage containers or feeding utensils?

Even when COVID-19 is not a consideration, breastmilk pumps, milk storage containers and feeding utensils need to be appropriately cleaned after every use.

- Wash the pump/containers after every use with liquid soap, e.g. dishwashing liquid and warm water. Rinse after with hot water for 10-15 seconds.
- Some breast pumps parts can be put in the top rack of a dishwasher (if available). Check the instruction manual before doing this.

11. If a mother with confirmed/suspected COVID-19 is not able to breastfeed or to express breastmilk, can wet-nursing be recommended?

Wet-nursing may be an option depending on acceptability to mothers/families, national guidelines, cultural acceptability, availability of wet-nurses and services to support mothers/wet-nurses.

- In settings where HIV is prevalent, prospective wet-nurses should undergo HIV counselling and rapid testing, according to national guidelines, where available. In the absence of testing, if feasible undertake HIV risk assessment. If HIV risk assessment/counselling is not possible, facilitate and support wet-nursing. Provide counselling on avoiding HIV infection during breastfeeding.
- Prioritise wet-nurses for the youngest infants.

12. If a mother confirmed/suspected to have COVID-19 was unable to breastfeed because she was too ill or because of another illness, when can she start to breastfeed again?

A mother can start to breastfeed when she feels well enough to do so. There is no fixed time interval to wait after confirmed/suspected COVID-19. There is no evidence that breastfeeding changes the clinical course of COVID-19 in a mother.

She should be supported in her general health and nutrition to ensure full recovery. She should also be supported to initiate breastfeeding or relactate.

13. Do the results of COVID-19 testing make any difference to infant and young child feeding recommendations?

COVID-19 testing does not have any immediate implications for decisions on infant and young child feeding.

However, confirmation of COVID-19 means that a mother should implement appropriate recommended hygiene practices for the period that she is likely to be infective i.e. while symptomatic or through the 14 days after the start of symptoms, whichever is longer.

14. Is it advisable for a mother with confirmed/suspected COVID-19 who is breastfeeding, to give a 'top-up' with infant formula milk?

No. If a mother is confirmed/suspected to have COVID-19 and is breastfeeding, there is no need to provide a 'top-up' with an infant formula milk. Giving a 'top-up' will reduce the amount of milk produced by a mother. Mothers who breastfeed should be counselled and supported to optimise positioning and attachment to ensure adequate milk production. Mothers should be counselled about responsive feeding and perceived milk insufficiency and how to respond to their infants' hunger and feeding cues to increase the frequency of breastfeeding.

15. What are key messages for a mother who wants to breastfeed but is scared about passing COVID-19 to her infant?

As part of counselling, a mother's or family's anxiety about COVID-19 should be acknowledged and responded to with the following messages:

- I. COVID-19 has not been detected in the breastmilk of any mother with confirmed/suspected COVID-19 and there is no evidence so far that the virus is transmitted through breastfeeding.
- II. Newborns and infants are at low risk of COVID-19 infection. Among the few cases of confirmed COVID-19 infection in young children, most have experienced only mild or asymptomatic illness.
- III. Breastfeeding and skin-to-skin contact significantly reduce the risk of death in newborns and young infants and provide immediate and lifelong health and development advantages. Breastfeeding also reduces the risk of breast and ovarian cancer for the mother.
- IV. The numerous benefits of breastfeeding substantially outweigh the potential risks of transmission and illness associated with COVID-19.

16. If a mother is confirmed/suspected to have COVID-19, is infant formula milk safer for infants?

No. There are always risks associated with giving infant formula milk to newborns and infants in all settings.

The risks associated with giving infant formula milk are increased whenever home and community conditions are compromised e.g. reduced access to health services if a baby becomes unwell / reduced access to clean water / access to supplies of infant formula milk are difficult or not guaranteed, not affordable and not sustainable.

The numerous benefits of breastfeeding substantially outweigh the potential risks of transmission and illness associated with the COVID-19 virus.

17. For what period of time are WHO recommendations on Breastfeeding and COVID-19 relevant?

The recommendations on caring and feeding of infants of mothers with confirmed/suspected COVID-19 are for the time when she is likely to be infective, i.e. while symptomatic or through the 14 days after the start of symptoms, whichever is longer.

18. Why do recommendations for mothers with confirmed/suspected COVID-19 and their infants seem different from social distancing recommendations for the general population?

Recommendations for adults and older children to maintain social distancing aim to reduce contact with asymptomatic persons who have COVID-19 and transmission of the virus that may result. This strategy will reduce the overall prevalence of COVID-19 and the number of adults who experience more serious disease.

The aim of recommendations on the care and feeding of infants and young children whose mothers have confirmed/suspected COVID-19 infection is to improve the immediate and lifelong survival, health and development of their newborns and infants. These recommendations consider the likelihood and potential risks of COVID-19 in infants and also the risks of serious illness and death when infants are not breastfed or when infant formula milk are used inappropriately as well as the protective effects of breastfeeding and skin-to-skin contact.

In general, children are at low risk of COVID-19 infection. Among the few cases of confirmed COVID-19 infection in children, most have experienced only mild or asymptomatic illness. The numerous benefits of breastfeeding substantially outweigh the potential risks of transmission and illness associated with the COVID-19.

19. Is it alright for health facilities to accept free supplies of formula milk for infants of mothers with confirmed/suspected COVID-19?

No. Donations of infant formula milks should not be sought or accepted. If needed, supplies should be purchased based on assessed need. Donated formula milk is commonly of variable quality, of the wrong type, supplied disproportionate to need, labelled in the wrong language, not accompanied by an essential package of care, distributed indiscriminately, not targeted to those who need it, is not sustained, and takes excessive time and resources to reduce risks.

20. Why do WHO recommendations on mother/infant contact and breastfeeding for mothers with confirmed/suspected COVID-19 differ from those of some national and professional organizations?

WHO's recommendations on mother/infant contact and breastfeeding are based on a full consideration not only of the risks of infection of the infant with COVID-19, but also the risks of serious morbidity and mortality associated with not breastfeeding or the inappropriate use of infant formula milks as well as the protective effects of skin-to-skin contact and breastfeeding.

Recommendations of other organizations may focus only on the prevention of COVID-19 transmission without full consideration of the importance of skin-to-skin contact and breastfeeding.



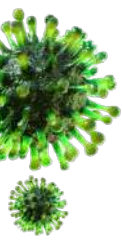
www.who.int/news-room/q-a-detail/q-a-on-covid-19-and-breastfeeding

Disclaimer

The responses to questions in this document are derived from WHO publications and the Interagency Working Group Operational Guidance on Infant and Young Child Feeding in Emergencies. The WHO interim guidance was developed by a WHO global network of clinicians and clinicians who have treated patients with SARS, MERS, or severe influenza or COVID-19.

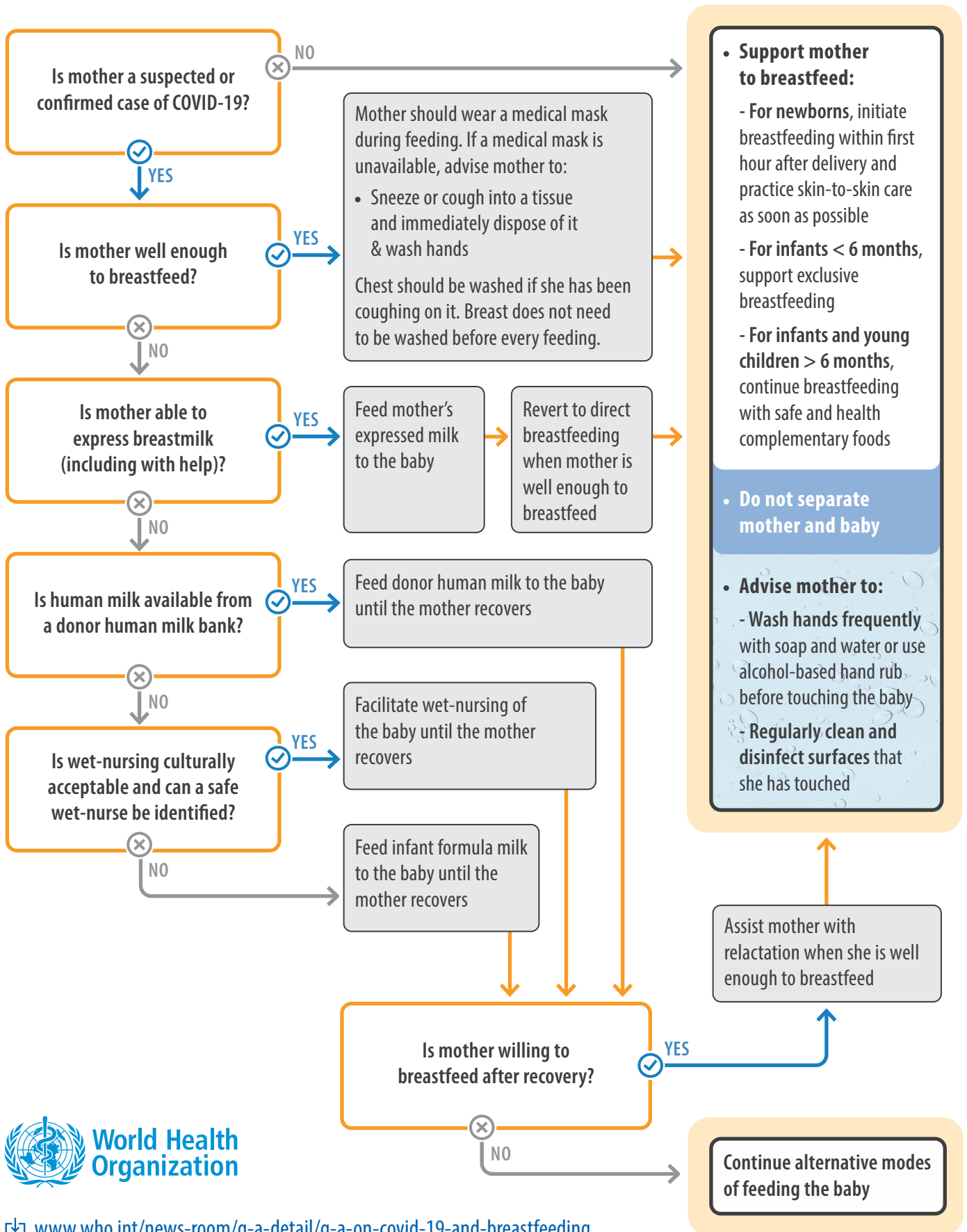
For queries, please email: outbreak@who.int with "COVID-19 clinical question" in the subject line.





DECISION TREE

for breastfeeding in context of COVID-19: Guidance for **health care and community settings**



कोविड-१९ या साथीच्या रोगाकरीता
आयुर्वेद, युनानी व होमिओपॅथी विषयक
मार्गदर्शक सूचना.

महाराष्ट्र शासन

शासन निर्णय क्र.आयुसे-०५२०/प्र.क्र.३३/आयु-१

वैद्यकीय शिक्षण व औषधी द्रव्ये विभाग,

गोकुळदास तेजपाल रुग्णालय संकुल इमारत, ९ वा मजला,

लोकमान्य टिळक मार्ग, मंत्रालय, मुंबई ४००००९

दिनांक :- ०८ जून, २०२०

- वाचा :- १) शासन निर्णय, वैद्यकीय शिक्षण व औषधी द्रव्ये विभाग क्र.वैशिवि-
२०२०/प्र.क्र.८१/२०/वैसेवा-३, दि.१३.०५.२०२०
२) संचालक, वैद्यकीय शिक्षण व संशोधन, मुंबई यांचे पत्र क्र.संवैशिवसं/
कोविड-१९/Task Force/आयुष/३२०/४-अ/२०२०, दि.२०.०५.२०२०

प्रस्तावना :-

कोविड-१९ या संसर्गजन्य आजाराच्या पार्श्वभूमीवर शासनास तसेच राज्यातील आरोग्य यंत्रणेतील जबाबदार अधिकाऱ्यांना आयुर्वेद/होमिओपॅथी/युनानी/योग चिकित्सा पध्दतीच्या अवलंबाबाबत सूचना/सल्ला देण्यासाठी संदर्भ क्र.१ येथील शासन निर्णयान्वये “टास्क फोर्स ऑन आयुष फोर कोविड-१९” गठीत करण्यात आला आहे. सदर समितीच्या संपन्न झालेल्या बैठकीत आयुष मंत्रालय, नवी दिल्ली यांनी कोविड-१९ च्या पार्श्वभूमीवर निर्गमित केलेल्या आयुष विषयक मार्गदर्शक सूचनांच्या आधारावर राज्यामध्ये सर्वसामान्य जनतेच्या हिताच्या दृष्टीने कोविड-१९ या साथीच्या रोगाकरीता आयुर्वेद, युनानी व होमिओपॅथी विषयक मार्गदर्शक सूचना तयार करण्यात आल्या. या सूचनांची अंमलबजावणी करण्यासाठी शासन स्तरावरून आदेश पारीत होण्याच्या दृष्टीने संदर्भ क्र.२ अन्वये याबाबतचा प्रस्ताव शासनास प्राप्त झाला आहे. त्यानुसार प्रस्तुत प्रकरणी खालीलप्रमाणे निर्णय घेण्यात आला आहे.

शासन निर्णय :-

“टास्क फोर्स ऑन आयुष फोर कोविड-१९” या समितीने कोविड-१९ या संसर्गजन्य आजाराच्या पार्श्वभूमीवर प्रतिबंधात्मक उपाय योजना तसेच अलाक्षणिक रुग्णांवरील उपचारासाठी संदर्भ क्र.२ येथील पत्रान्वये सादर केलेल्या खालील मार्गदर्शक सूचनांच्या अंमलबजावणीस शासनाची मान्यता प्रदान करण्यात येत आहे.

सामान्य प्रतिबंधात्मक उपाय

- १) वैयक्तिक स्वच्छतेचे व्यवस्थित पालन करावे.
- २) वारंवार साबणाने हात वीस सेकंद पर्यंत धुवावे.

- ३) श्वसनाविषयक नियम पाळावेत - खोकताना व शिंकताना तोंड झाकावे.
 - ४) ज्या व्यक्ती आजारी आहेत किंवा ज्यांना सर्दी खोकला इत्यादी आजाराची लक्षणे आहेत अशा व्यक्तींशी जवळचा संपर्क टाळावा.
 - ५) जिवंत प्राण्यांशी संपर्क व कच्चे न शिजवलेले मांस खाणे टाळा.
 - ६) पशुपालन गृह तसेच जिवत पशु विक्री केंद्र किंवा कत्तल खाने या ठिकाणी प्रवास टाळावा.
- याशिवाय खालील नमूद विशिष्ट आयुष उपाययोजनांचे पालन करावे.

- भोजन हे ताजे उष्ण व पचायला हलके असावे. त्यात आख्खी धान्ये आणि ऋतूनुसार भाज्या इत्यादींचा समावेश असावा.
- तुळशीची पाने, ठेचलेले आले व हळद ही द्रव्ये पाण्यात उकळून ते पाणी वारंवार पिणे फायदेशीर आहे.
- सर्दी व खोकल्यासाठी चिमूटभर काळीमिरी चूर्ण मधातून सेवन करणे फायदेशीर आहे.
- तसेच उपरोक्त लक्षणांमध्ये तुळस (ऑसीमम सॅक्टम), गुडुची / गुळवेल (टीनोस्पोरा कॅर्डिफोलीया), आले (झिंझीबेर ऑफीसिनेल) आणि हळद (करकूमा लॉंगा) या सामान्य औषधी वनस्पती उपयुक्त आहेत.
- थंड, फ्रिजमध्ये ठेवलेले व पचायला जड पदार्थ टाळणे हितकारक आहे.
- थंड वा-याचा थेट संपर्क टाळणे हे नेहमी फायदेशीर आहे.
- पर्याप्त विश्रांती व वेळेत झोपणे हितकारक आहे.
- प्रशिक्षित योग तज्ञांच्या मार्गदर्शनाखाली योगासने व प्राणायाम यांचा सराव करावा.
- मुगाचे कढण / सुप / पाणी - मुग डाळ पाण्यात उकळवून तयार केलेले मुगाचे गरम कढण / सुप / पाणी प्यावे, ते पोषक व पथ्यकर आहे.
- सुवर्ण दुग्ध/दुध - १५० मिलीलिटर गरम दुधात अर्धा चमचा हळद व अर्धा चमचा सुंठीचे चूर्ण मिसळून हे दूध दिवसातून एकदा किंवा दोनदा प्यावे.

१. रोगप्रतिकार शक्ती वाढीसाठी व रोग प्रतिबंधासाठी आयुर्वेद, युनानी व होमिओपॅथी उपचार

अ) आयुर्वेदिक औषधी

- १) संशमनी वटी (५०० मिली ग्रॅम) - १ गोळी दिवसातून दोनदा - १५ दिवस
- २) आयुष क्वाथ - तुळस ४ भाग, सूठ दोन भाग, दालचिनी दोन भाग व काळीमिरी १ भाग या द्रव्यांच्या भरड चूर्णाने फांट तयार करणे. (वरील औषधींचे ३ ग्रॅम भरड चूर्ण १०० मिलीलिटर उकळलेल्या पाण्यात मिसळून ५ ते ७ मिनीटे झाकून ठेवणे व गाळून ते

पाणी/फांट पिणे. हा फांट सकाळ व संध्याकाळ ताजा बनवून १५ दिवसांसाठी सेवन करावा.

३) च्यवनप्राश १० ग्रॅम (१ मोठा चमचा) सकाळी सेवन करावे. मधुमेही रुग्णांनी साखर विरहित/शुगरफ्री च्यवनप्राश सेवन करावे.

४) सोपे आयुर्वेदीक चिकीत्सा उपक्रम -

अ) नस्य/नाका वाटे औषध टाकणे - सकाळ व संध्याकाळ दोन्ही नाकपुड्यांमध्ये तिळतेल/खोबरेल तेल किंवा तूप हे बोटाने लावावे/ प्रतिमर्श नस्य करावे.

ब) तेलाने गंडुश/गुळण्या व गरम पाण्याने गुळण्या करणे - तोंडामध्ये १ मोठा चमचा तिळतेल/खोबरेल तेल घ्यावे. हे तेल न गिळता २ ते ३ मिनीटे गुळण्या कराव्यात व त्यानंतर हे तेल थुंकावे व गरम पाण्याने चुळ भरावी. असे दिवसातून एकदा किंवा दोनदा करावे. गरम पाण्याने देखील एकदा किंवा दोनदा गुळण्या कराव्यात .

ब) युनानी औषधी

१) काढा/जोशंदा - (घटक द्रव्ये - बिहीदाना, उन्नाब, सपीस्तान, करंजवा) -बिहीदाना ०५ ग्रॅम, बर्गे गावजबान ०७ ग्रॅम, उन्नाब ०७ दाणे, सपीस्तान ०७ दाणे, दालचिनी ०३ ग्रॅम, बनपशा ०५ ग्रॅम यांचा काढा/जोशंदा. या घटकद्रव्यांना २५० मिलीलिटर पाण्यामध्ये १५ मिनीटे उकळवावे व गरम असताना चहाप्रमाणे दिवसातून ०१ किंवा ०२ वेळा १५ दिवसांकरिता सेवन करावे.

२) खमीरा मरवारीद - दुधासोबत ०५ ग्रॅम दिवसातून दोनदा सेवन करावे. (मधुमेही रुग्णांनी सेवन करू नये.)

क) होमिओपॅथीक औषधी

अर्सेनिकम अल्बम ३० - ४ ग्लोब्युल्स /गोळ्या उपाशीपोटी दिवसातून दोनदा, असे तीन दिवस सलग सेवन करावे. एका महिन्याच्या अंतराने पुन्हा हा तीन दिवसांचा औषधाचा कोर्स करावा.

(वरील सर्व उपक्रम हे आपआपल्या सोयीनुसार शक्य तेवढे पालन करावे.)

॥.कोवीड १९ सारखी लक्षणे असणा-या इतर आजारांसाठी आयुर्वेद, युनानी व होमिओपॅथी उपचार

अ) आयुर्वेदिक औषधी

- १) टॅबलेट आयुष ६४ -(५००मिली ग्रॅम) - २ गोळ्या दिवसातून २ वेळा १५ दिवस सेवन करणे.
- २) अगस्त्य हरीतकी - ५ ग्रॅम दिवसातून २ वेळा गरम पाण्यासोबत १५ दिवस सेवन करणे.
- ३) अणूतेल/तीळतेल - दोन थेंब प्रतिदिन सकाळी प्रत्येक नाकपुडीत टाकणे.
- ४) ताजी पुदीन्याची पाने किंवा ओवा पाण्यात उकळून त्याची वाफ दिवसातून एकदा / दोनदा घेणे.
- ५) खोकला व घसा खवखवणे याकरीता नैसर्गिक साखर अथवा मध यामध्ये लवंगचूर्ण मिसळून दिवसातून २ ते ३ वेळा घेणे.

ब) युनानी औषधी

- १) अर्के अजीब (अर्धा ग्लास पाण्यामध्ये ०५ थेंब औषध मिसळून गुळण्या कराव्या) हा उपक्रम १५ दिवस करावा. हे मिश्रण घरीदेखील प्रत्येकी ०५ ग्रॅम सत्ते (सत्व) अजवाइन, सत्ते (सत्व) पुदीना व सत्ते (सत्व) कपूर/कफूर एकत्रित करून तयार करता येते.
- २) तिर्यक अर्बा - हब्बुल घर/ (लॉरस नोबीलीस फळ), ज्युन्तीआना (ज्येन्शीआना ल्युटीयाना मूळ), मूर (कॉम्मीफोरा माईर डीक), झरवंद तवील (अॅरीस्टोलोकीया लॉगा मूळ). तयार करण्याचा विधी - या सर्व घटकद्रव्यांचे चूर्ण तयार करून तूपामध्ये परतावे व मध गरम करून त्यामध्ये ही औषधे मिसळावीत. याचा वापर चूर्ण स्वरूपातही केला जावू शकतो. ०१ चमचा चूर्ण सकाळी घ्यावे. हे औषध १५ दिवस घ्यावे.

क) होमिओपॅथीक औषधी

असेनिकम अल्बम ३० - ४ ग्लोब्युल्स /गोळ्या उपाशीपोटी दिवसातून दोनदा, असे तीन दिवस सलग सेवन करावे. एका महिन्याच्या अंतराने पुन्हा हा तीन दिवसांचा औषधाचा कोर्स करावा.

तसेच ब्रायोनिया अल्बा (Bryonia alba),-हस टॉक्सीको डेन्ड्रान (Rhus toxico Dendron), बेलॅडोना जेलसेमियम (Belladonna Gelesemium), युप्याटोरियम परफॉलिएटम (Eupatorium perfoliatum), हि औषधे देखील सर्दी खोकला/फ्लू समान रोगांमध्ये चिकित्सेसाठी उपयुक्त ठरली आहेत.

(उपरोक्त सर्व औषधे तज्ञ आयुर्वेदिक, युनानी व होमिओपॅथीक डॉक्टरांच्या सल्ल्यानंतरच घ्यावीत)

III. कोवीड १९ पॉझीटीव्ह अलाक्षणिक, चिकित्सालयीन तपासणीनुसार स्थिर (क्लिनीकली स्टेबल) असणा-या व इतर वर्तमान गंभीर व्याधी (प्रि एक्झीसर्टींग को-मॉरबीडीटीज) रहित रुग्णांकरीता प्रस्थापीत चिकित्सेला पुरक आयुर्वेद व होमिओपॅथी उपचार

अ) आयुर्वेदिक औषधी

- १) टॅबलेट आयुष ६४ - ५०० मिली ग्रॅम - २ गोळ्या दिवसातून दोन वेळा १५ दिवस सेवन करणे
किंवा
टॅबलेट सुदर्शन घनवटी - २५० मिलीग्रॅम - २ गोळ्या दिवसातून २ वेळा १५ दिवस सेवन करणे.
- २) अगस्त्य हरीतकी - ५ ग्रॅम दिवसातून २ वेळा गरम पाण्यासोबत १५ दिवस सेवन करणे.
- ३) सोपे आयुर्वेदिक चिकीत्सा उपक्रम -
 - अ) नस्य/नाका वाटे औषध टाकणे - सकाळ व संध्याकाळ दोन्ही नाकपुड्यांमध्ये तिळतेल/खोबरेल तेल किंवा तूप हे बोटाने लावावे/ प्रतिमर्श नस्य करावे.
 - ब) तेलाने गंडुश/गुळण्या व गरम पाण्याने गुळण्या करणे - तोंडामध्ये १ मोठा चमचा तिळतेल/खोबरेल तेल घ्यावे. हे तेल न गिळता २ ते ३ मिनीटे गुळण्या कराव्यात व त्यानंतर हे तेल थुंकावे व गरम पाण्याने चुळ भरावी. असे दिवसातून दोनदा / तीनदा करावे. गरम पाण्याने देखील दोनदा/तीनदा गुळण्या कराव्यात .
 - क) गरम पाण्याची वाफ दिवसातून दोनदा / तीनदा घ्यावी.
उपरोक्त सामान्य प्रतिबंधात्मक उपायांचे देखील पालन करावे.

ब) होमिओपॅथीक औषधी

कोवीड १९ समान रोगांच्या लक्षणांच्या चिकित्सेकरीता उपरोक्त नमूद औषधांचा वापर हा प्रस्थापीत चिकित्सेस पुरक चिकित्सा म्हणून केला जावू शकतो.

(उपरोक्त सर्व औषधे तज्ञ आयुर्वेदिक व होमिओपॅथीक डॉक्टरांच्या सल्यानंतरच घ्यावीत)

२. उपरोक्त उपाय योजना कोविड-१९ या आजाराच्या प्रतिबंधास तसेच अलाक्षणिक रुग्णांवरील पुरक उपचारास फायदेशीर ठरू शकतात. तथापि, कोविड-१९ या संसर्गजन्य आजाराची लक्षणे जाणवल्यास राज्यातील आरोग्य यंत्रणेकडून तात्काळ चाचणी करून घेणे व त्यांच्या सल्ल्यानुसार उपचार घेणे आवश्यक राहिल.

महाराष्ट्राचे राज्यपाल यांच्या आदेशानुसार व नावाने,


(सं.द.कमलाकर)

उपसचिव, महाराष्ट्र शासन.

प्रति,

१. प्रधान सचिव, मा.मुख्यमंत्री सचिवालय, मंत्रालय, मुंबई
२. मा.उपमुख्यमंत्री, मंत्रालय, मुंबई यांचे खाजगी सचिव.

३. सर्व मा.मंत्री/राज्यमंत्री यांचे खाजगी सचिव, मंत्रालय, मुंबई.
४. उपसचिव, मा.मुख्य सचिव कार्यालय, मंत्रालय, मुंबई.
५. प्रधान सचिव, सार्वजनिक आरोग्य विभाग, मंत्रालय, मुंबई.
६. प्रधान सचिव, मंत्रालय कोरोना नियंत्रण कक्ष, मंत्रालय, मुंबई.
७. प्रधान सचिव, नगर विकास विभाग, मंत्रालय, मुंबई.
८. मा.सचिव, वैद्यकीय शिक्षण व औषधी द्रव्ये विभाग, मंत्रालय, मुंबई यांचे वरिष्ठ स्वीय सहाय्यक.
९. संचालक, वैद्यकीय शिक्षण व संशोधन, मुंबई / संचालक, आरोग्य सेवा, मुंबई / संचालक, आयुष संचालनालय, महाराष्ट्र राज्य, मुंबई / आयुक्त, सर्व महानगरपालिका/ सर्व विभागीय आयुक्त/ सर्व जिल्हाधिकारी यांना विनंती करण्यांत येते की, सदर शासन निर्णय आपल्या अधिपत्याखालील संस्थांच्या तसेच खाजगी रुग्णालयांच्या निदर्शनास आणण्यात यावेत. तसेच या उपाय योजनांची माहिती सर्वसामान्य जनतेपर्यंत पोहोचेल यासाठी आवश्यक ते सर्व प्रयत्न करण्यात यावेत.
- १०.अध्यक्ष, सहअध्यक्ष व इतर सर्व सदस्य, टास्क फोर्स ऑन आयुष फोर कोविड-१९ समिती.



Guide to address stigma associated with COVID-19



#TogetherAgainstCOVID19



COVID-19 pandemic is a public health emergency that is causing a stressful and a difficult time for everyone. During this crisis, rumours and misinformation create more stress and can hamper COVID-19 recovery.

■ Why is there Stigma?

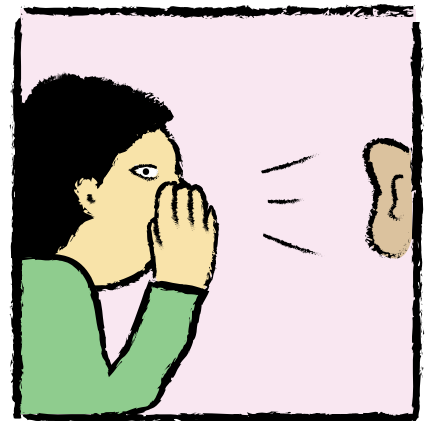
Stigma associated with COVID-19 is based on three main factors:



Lack of adequate information



Fear of the disease



Rumours or misinformation

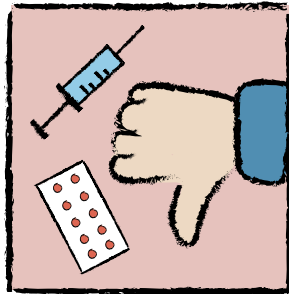
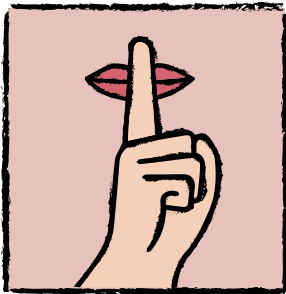
People facing Stigma and Discrimination:

- People affected with COVID-19, their families /caregivers / friends
- People under quarantine and their families
- Frontline health care providers like doctors, nurses, paramedics, field workers, hospital staff and sanitation workers etc.
- Those who have recovered from COVID-19
- Migrant workers



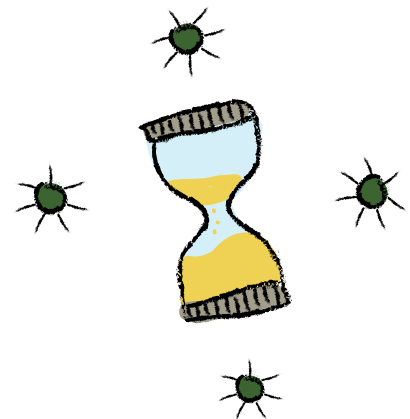
Effects of Stigma and Discrimination:

- People concealing symptoms
- Hesitancy in seeking medical care
- People not adhering to interventions like home quarantine
- Increased sense of emotional isolation, feeling of guilt and anxiety
- Lack of self-esteem and confidence
- Ostracisation of healthcare workers and others involved in COVID-19 management
- Worsening of pre-existing psychiatric illness such as depression



These may lead to:

- COVID-19 cases not being reported, or reported late, making management of the outbreak more difficult.
- Diversion from the required preventive measures which need to be undertaken.



Things to know about COVID-19:

1. Although COVID-19 is highly contagious, we can protect ourselves by following preventive measures such as physical distancing, washing hands frequently and wearing a face cover / mask.
2. Despite precautions, if a person contracts COVID-19, it is not his/her fault. Anyone is susceptible to contracting the disease, no one needs to be blamed.

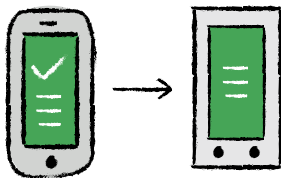
3. In situations of distress, the patient and the family need support and cooperation.
4. Be a well-wisher to those in isolation/ quarantine and their families. Testing, isolation and quarantine are meant to protect the family and community.
5. Celebrate persons who have recovered from COVID-19 as WINNERS. They do not have the virus & there is no risk of transmission.

Tips to reduce stigma related to COVID-19:

Dos



- ✓ Be appreciative and supportive of efforts made by frontline workers

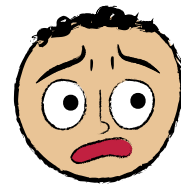


- ✓ Verify the information from a reliable source such as Ministry of Health and Family Welfare's website, before sharing or forwarding the same



- ✓ Share positive stories of those who have recovered from COVID-19

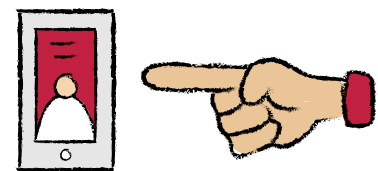
Don'ts



- ✗ Don't spread misinformation



- ✗ Don't label any individual, group or area for spread of COVID-19



- ✗ Don't spread name, identity, locality of persons affected or under quarantine

To know more visit: www.mohfw.gov.in



An Illustrative Guide on COVID Appropriate Behaviours


As you are aware, the COVID 19 pandemic has led to unprecedented and unanticipated challenges requiring collective action and support from all.


While all necessary measures to fight the spread of Novel Corona Virus (COVID 19) are being effectively led by the Central Government and State Governments, there is a need to reinforce the importance of preventive measures and practices in a sustained manner, to deal with the disease over the long run.

This guidebook outlines a comprehensive list of 15 preventive behavioural practices which are critical to winning this fight against the deadly virus.

This fight can be won only when everyone knows their goal; everyone knows their role.

A set of 15 promises, we need to follow, as part of COVID Appropriate Behaviours


1.  Greet without physical contact


2.  Maintain physical distance
2 Gaj ki Doori
(6 feet)


3.  Wear reusable face cover or mask

4.  Avoid touching eyes, nose and mouth


5.  Maintain respiratory hygiene

6.  Wash hands frequently and thoroughly

7.  Do not chew tobacco, khaini etc. or spit in the public places


8.  Regularly clean and disinfect frequently touched surfaces

9.  Avoid unnecessary travel


10.  Do not discriminate against anyone

11.  Discourage crowd - Encourage Safety

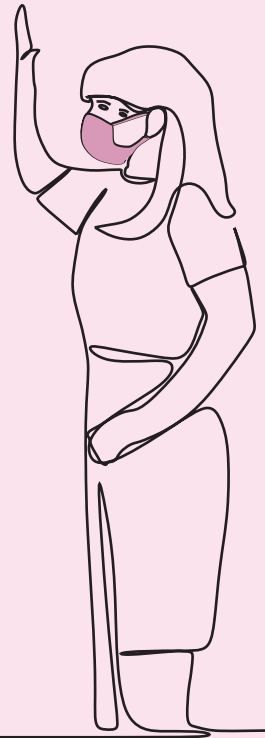
12.  Do not circulate social media posts which carry unverified or negative information

13.  Seek information on COVID-19 from credible sources

14.  Call National Toll-free helpline 1075 or State helpline numbers for any queries

15.  Seek psychosocial support for any stress or anxiety

1. Greet without physical contact

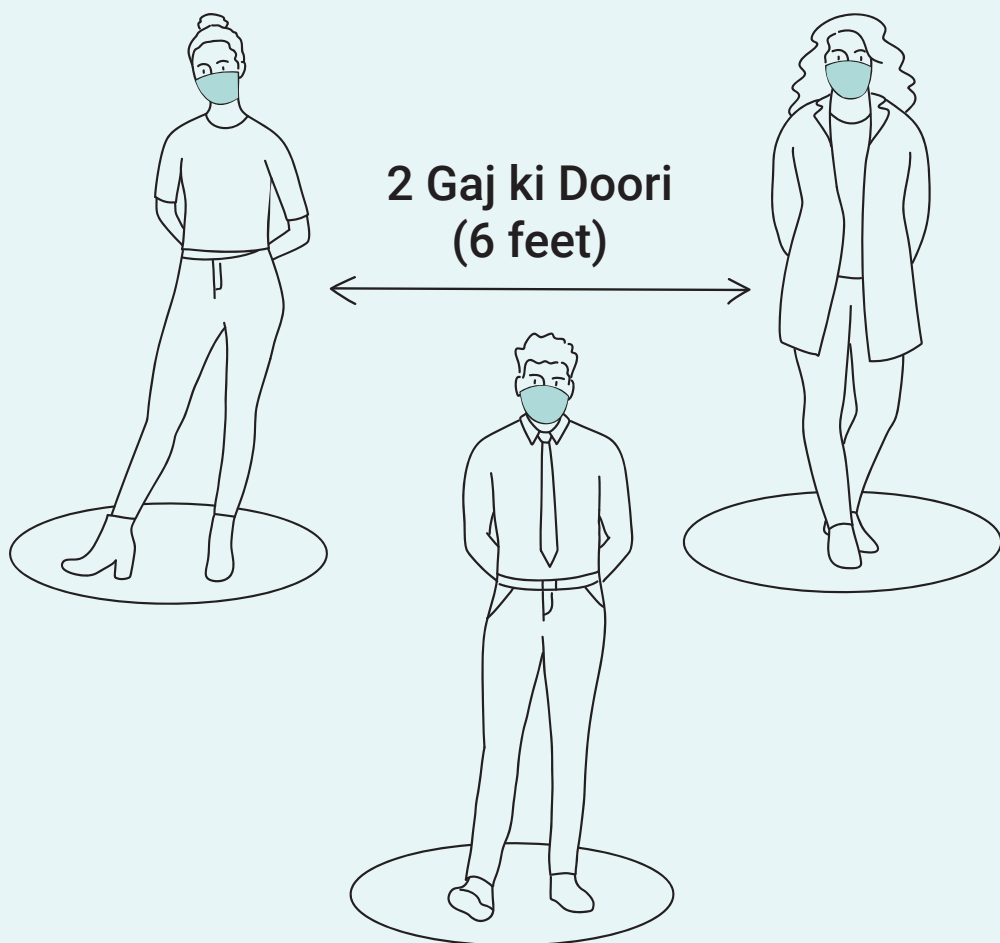


Avoiding physical contact is a responsible behaviour as it prevents the spread of COVID-19 disease and other viruses.

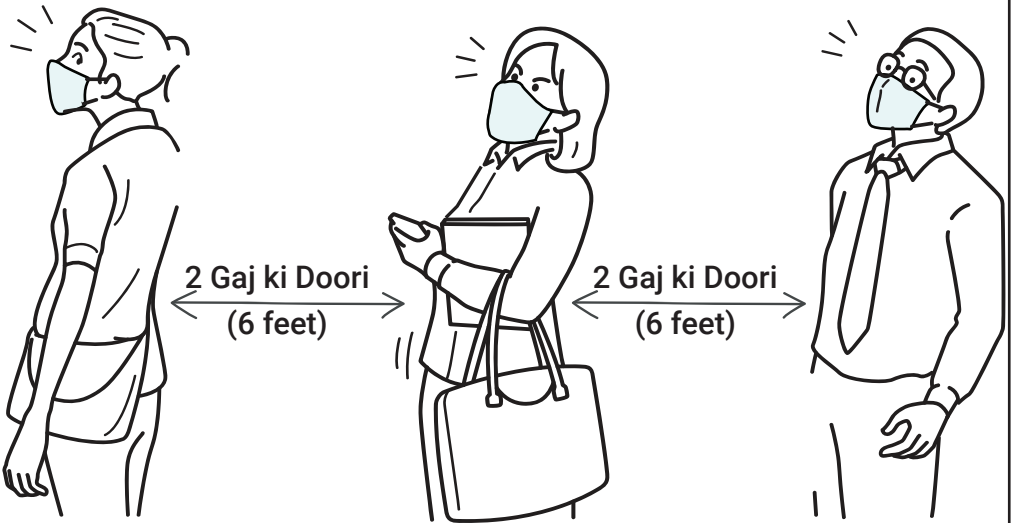
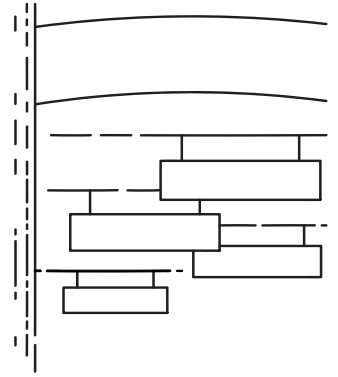
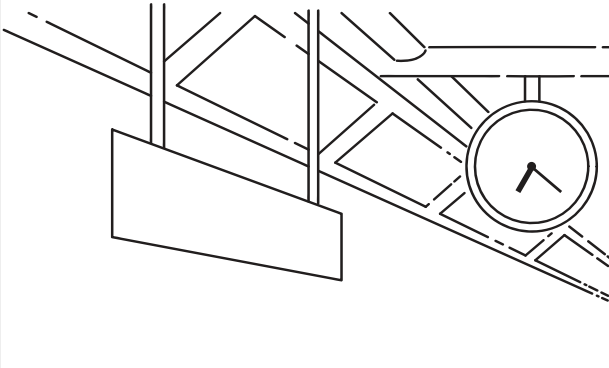
**Be responsible!
Promote greeting without
any form of physical
contact**



2. Maintain Physical distance



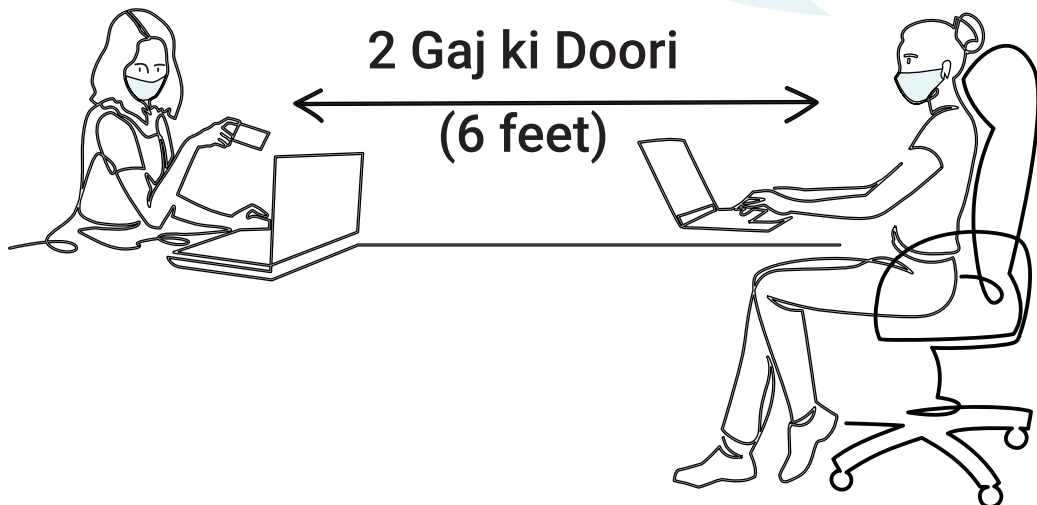
Follow distancing norms
in all public places
Keep minimum distance
of 2 Gaj(6 feet)



Especially, when you go out to shop for essential products to the vegetable or fruit market, dairy store, pharmacy, hospital, etc....



Also follow distancing norms when in a room / office with other people



If the other person is infected, their physical contact may increase the risk of transmission

3. Wear reusable hand- made face-cover or mask, at all times



**Why is it necessary to wear
a hand-made
face cover or mask?**



A handmade face cover or mask limits the spread of any respiratory infection and protects the community at large



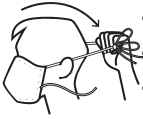
How to wear a mask



1. Wear mask so nasal clip is over the nose. External pleats should face downwards



2. Open mask pleats so it covers mouth and nose



3. Tie upper strings first. Then lower strings. There should be no gap between face and mask



4. Do not touch front of the mask



5. Remove by first untying lower string and then upper string.



6. Replace mask after 8 hours or when damp/humid



7. Dispose the mask in the recommended manner



8. Clean hands after removal of mask

9. Do not reuse single use mask

Do I need to wear a mask at all times?

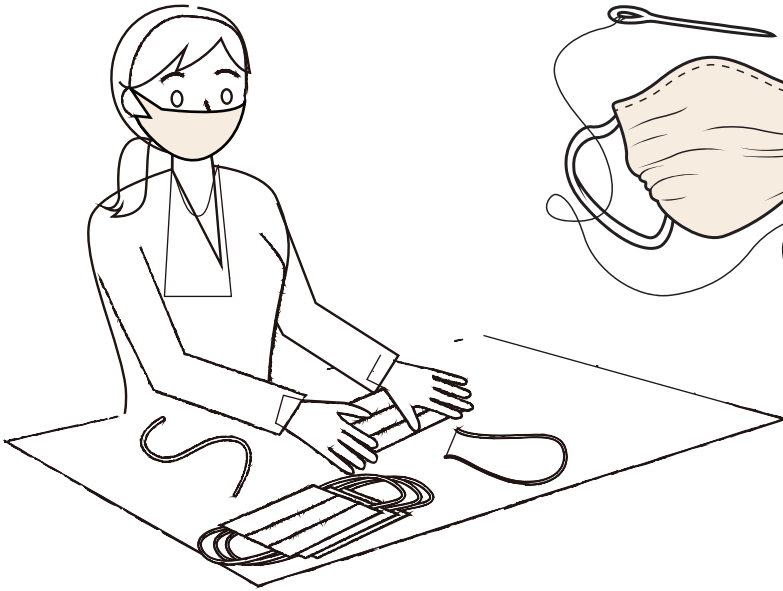


Remember three key occasions one must definitely wear a face cover or mask



- 1. When you undertake any essential travel or go to a public place**
- 2. When you are in a room with other people**
- 3. When you have any signs of cough, cold or flu**

You can easily make a face cover at home to protect yourself



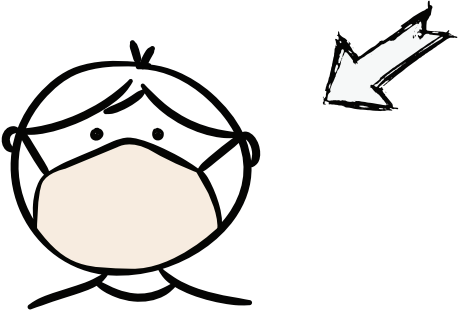
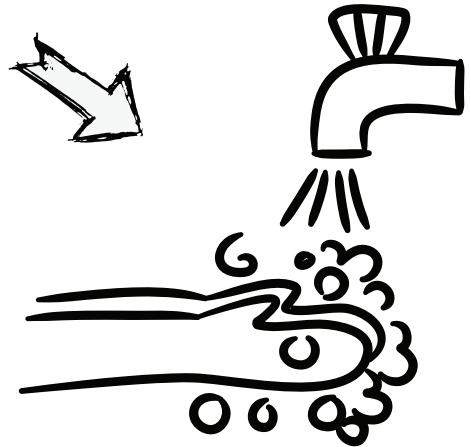
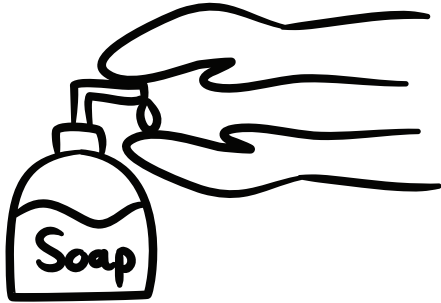
Really?



**Yes, just log on to www.mohfw.gov.in
and read the manual on how to make a
face cover**



Always remember, wash hands with soap and water or use an alcohol based sanitizer before wearing a mask



4. Avoid touching your eyes, nose or mouth



We tend to touch our face inadvertently...
let's be extra careful



But Why?

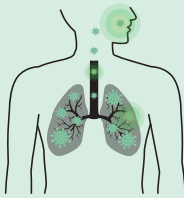




**Hands touch many surfaces
and can easily pick up germs
and viruses**



**Once contaminated, hands
can transfer the virus to
your eyes, nose or mouth**

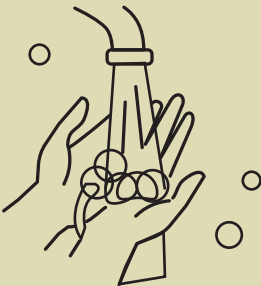


**From there, the virus
can enter your body
and can make you sick**



**Your safety is in your own hands-
quite literally!**

5. Maintain respiratory hygiene



Cover your nose and mouth when you cough or sneeze with tissue or handkerchief



**Not carrying a tissue or
handkerchief?
Cough or sneeze into
your bent elbow**



**Don't forget...
Wash hands
immediately after you
cough or sneeze**



6. Wash hands regularly and thoroughly!

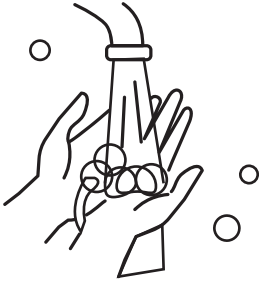


Your safety is in your hands – Literally!



Wash your hands frequently and thoroughly with soap and water

**Meet our hand
hygiene superheroes**



**Frequently hand-wash with me using water.
I am there to protect you from any virus,
including COVID-19**

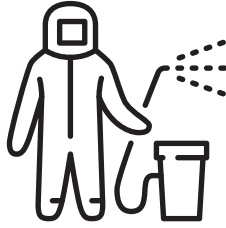


ALCOHOL-BASED HAND SANITIZER
**You can use me if you don't have
soap and water facility.**

7. Regularly clean and disinfect frequently touched surfaces



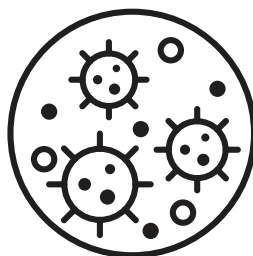
Practicing good environmental hygiene makes your surroundings safer.



How is that?



Because the infected droplets are likely to settle on surrounding surfaces.



You may use chemical disinfectants to clean the surfaces

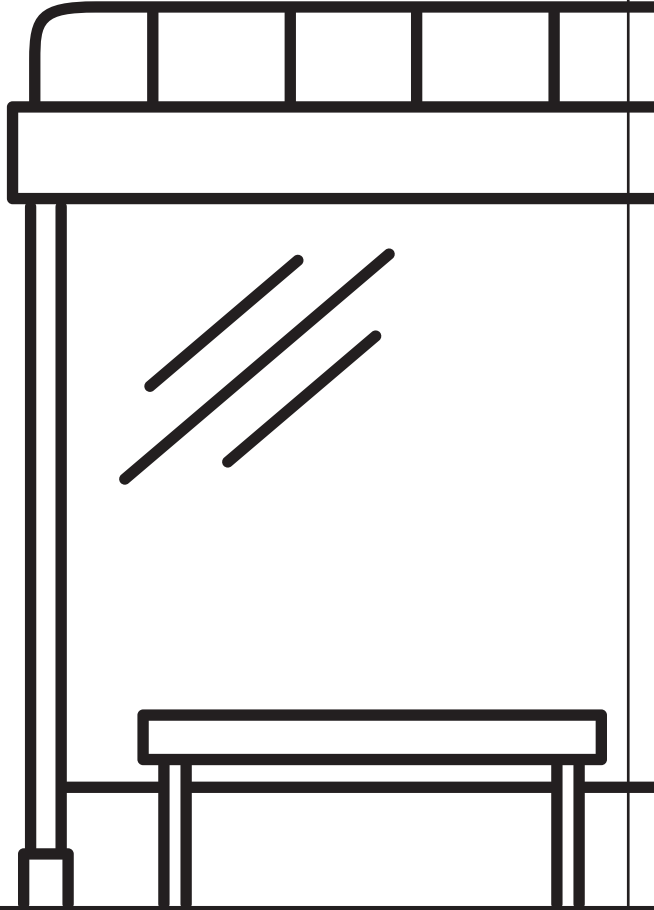
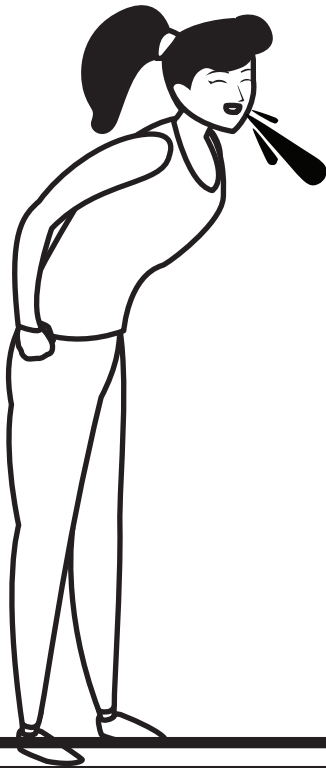
But wait...
Don't forget to wear gloves during disinfection



8. Do not spit in the open



Every time you spit in a public place, you put your and everyone else's life at risk



Spitting in public places
can increase the risk of
COVID-19 spread

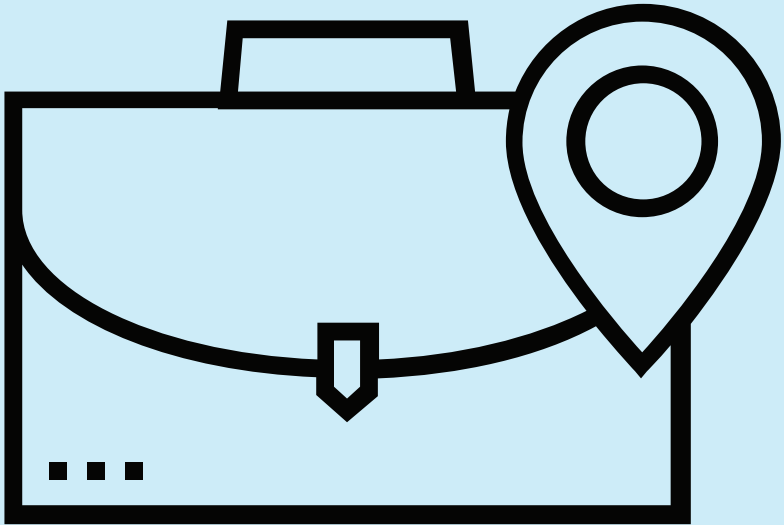


This also includes spitting
after consuming smokeless
tobacco products

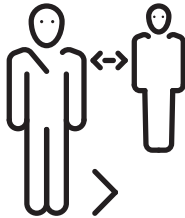


Remember - Spitting in public places is also punishable by law

9. Avoid unnecessary travel



Travel only when it's absolutely essential



2 Gaj ki Doori
(6 feet)

And if you do step out of your house...

Wear your face-cover and follow distancing norms

10. Do not discriminate - Against anyone!





Show compassion and support to persons affected with COVID-19 and their families

Remember – As people keep a check on any symptoms associated with COVID-19 and are willing to undergo testing, they also provide an opportunity to beat the disease!



Download the Aarogya Setu app to monitor your health

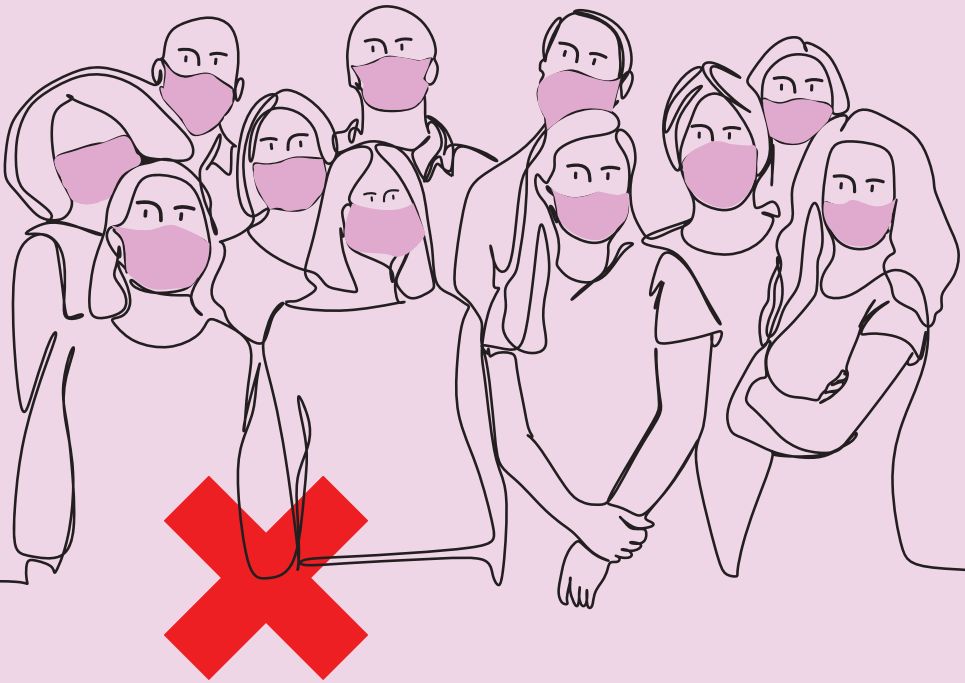


Boost the morale of doctors, nurses, police, sanitation workers who are on guard 24X7 to protect us

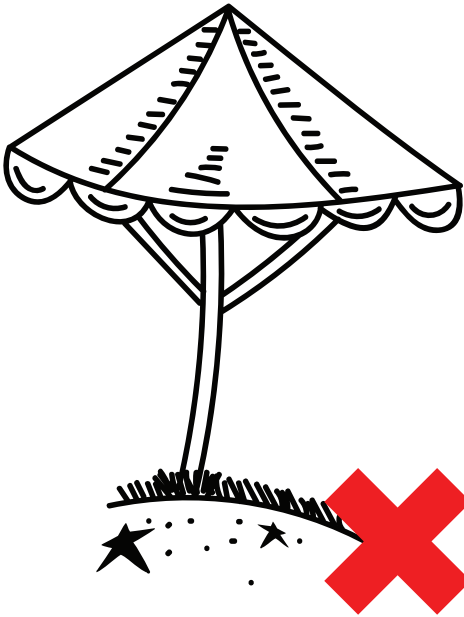
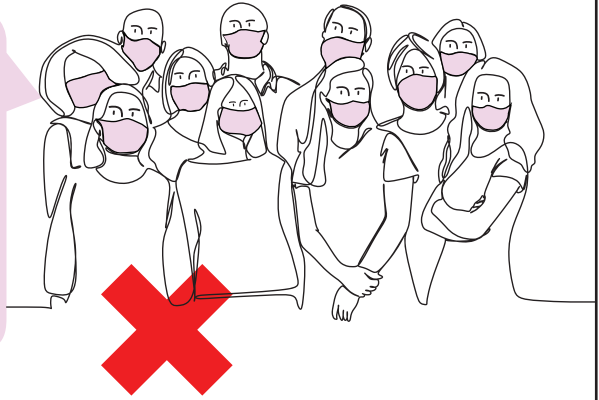


**It is time to show CARE
Compassion
Assurance
Respect
Encouragement**

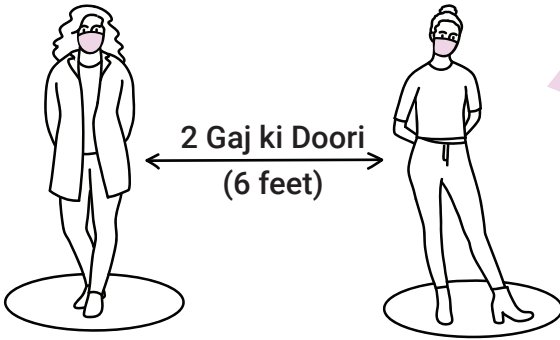
11. Discourage crowd - Encourage safety



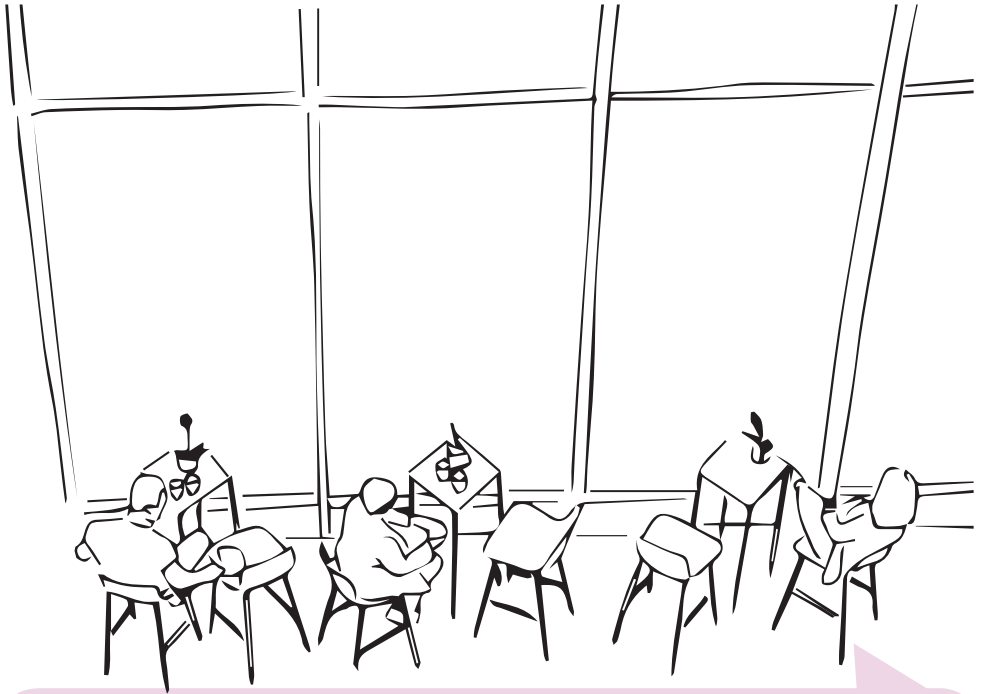
Limit going to social gatherings and say no to crowded places.



Unnecessary travel to crowded places or large gatherings increases the risk of COVID-19 transmission!



Keep a reasonable distance of atleast 2 Gaj(6 feet) from others



For important events which cannot be postponed, keep the number of guests to minimal

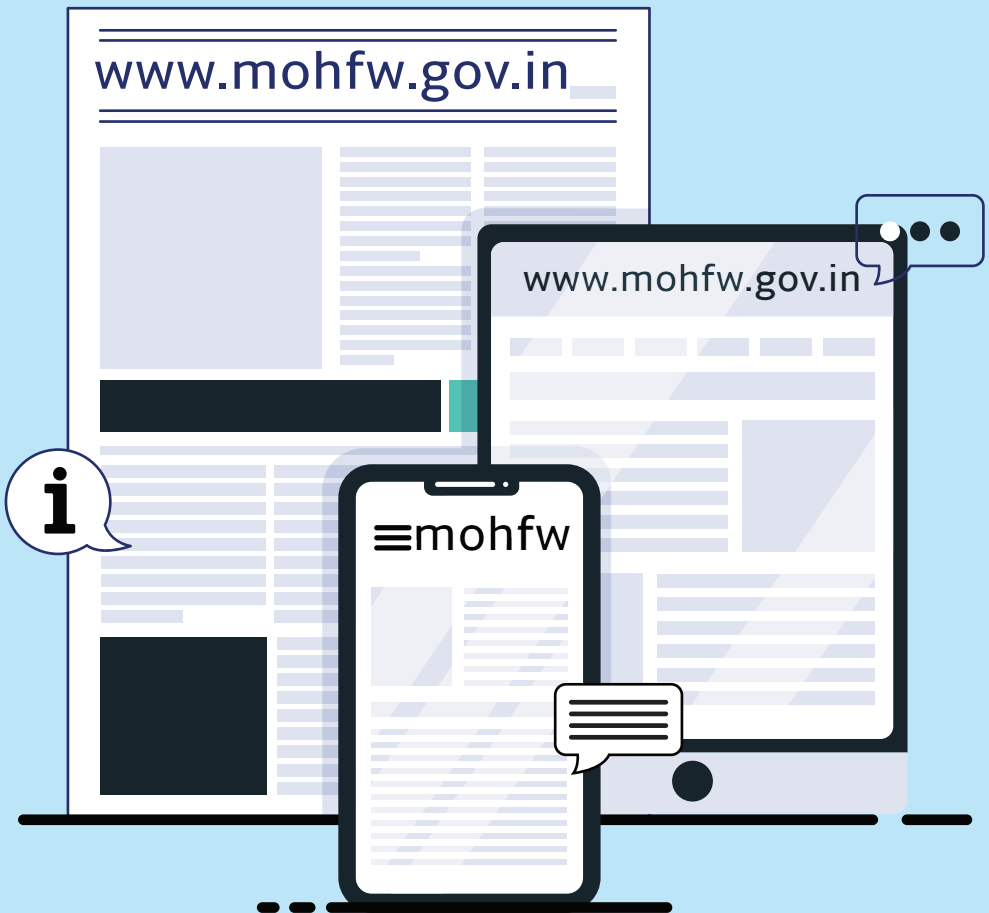


**Oh, have you tried connecting with your loved ones and colleagues virtually?
Try it, it is much safer!**

12. Do not circulate social media posts which carry unverified or negative information



13. Seek information on COVID-19 from credible sources





There is COVID-19 related information coming in from so many sources. Which one should I rely on?

The most credible source for COVID-19 information is Ministry of Health and Family Welfare's website (www.mohfw.com). You will receive all updated information and facts related to COVID-19 here.



14. Call national toll free helpline numbers 1075 or State helpline numbers for any COVID-19 related queries





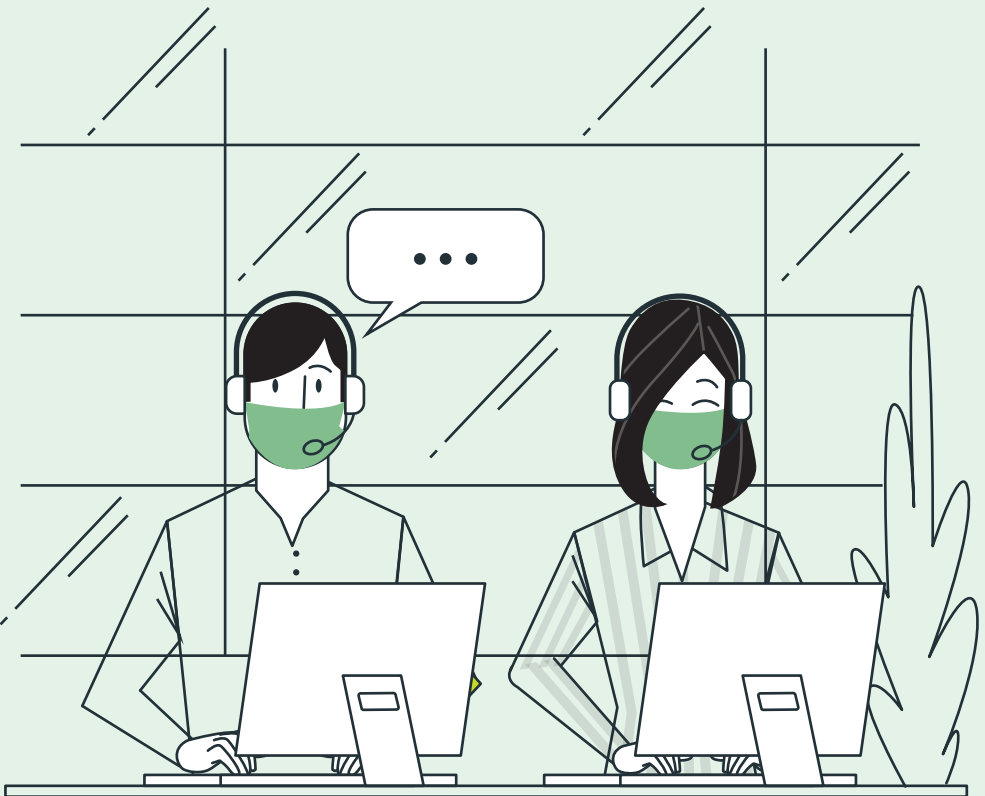
If you have any COVID-19 related queries or observe any COVID-19 related symptoms like fever, cough, or difficulty in breathing, call the national helpline number 1075 (toll free)



Do not hesitate to disclose your symptoms

**The earlier you seek help, the faster you will beat
the disease!**

15. Seek psychosocial support in case of any distress or anxiety





Coping with any public emergency or outbreak can be a testing time for people and their families – both affected or unaffected



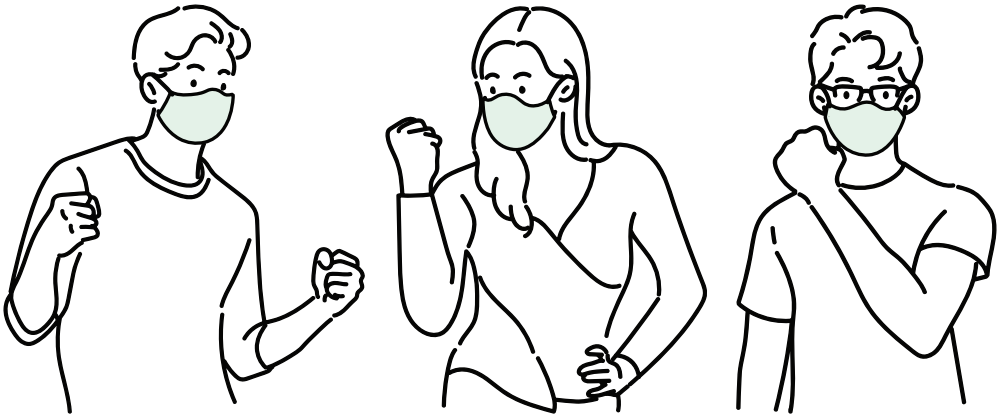
Do not ignore or suppress any feelings of anxiety or distress



**Psychosocial support services are available
at all times for you,
to address any stress or distress related
queries and concerns**

**Call on national psychosocial
toll-free helpline number
08046110007**





**Together,
we will fight COVID-19!**