

Summer Training
At
National Health Mission, Rajasthan

Reference outline for covid-19 hospital set-up

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MBA Hospital & Health Management 2019-2021

Under the guidance
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ACKNOWLEDGEMENT

The success and outcome of this project required a lot of direction and help from a lot people and I am greatly favored to have got this all along the completion of my work. All that I have done is due to guidance and help hence I would not forget to thank them.

I would firstly respect and thank **Dr. Samit Sharma, (MD-NHM)** for giving me an opportunity to do the summer training work in NHM Rajasthan.

I owe my heartfelt gratitude to our State Program supervisor and my organizational coach Dr. Jalaj Vijay to give me all support all through the project. I also respect and thank Dr Ravi Prakash Sharma state surveillance officer (IDSP) for giving such a decent support and direction, in spite of the fact that he was having a really busy routine during COVID 19 outbreak.

I am grateful to and blessed sufficient to urge consistent support, back and direction from **Dr. Richa Chaturvedy** (Consultant-Medical RCH) and **Mr Ejaz Khan** (Research officer - SHIFW).

It will be my pleasure to address the name of **Dr P.R. Sodani** (Pro president, Dean Academics, and Dean Training -IIHMR UNIVERSITY) in my report for his relentless guidance and his patience to guide me during this time.

My special thanks to our alumni **Dr Ashish Manocha** (Assistant professor-JNU) for his encouragement and suggestions during Process Documentation of the project work.

I am grateful to and blessed sufficient to urge consistent support, back and direction from my mentor **Dr D.K. Mangal** (Dean Research, Professor – IIHMR UNIVERSITY

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ABBREVIATIONS

NHM- National Health Mission

NUHM- National Urban Health Mission

NUHM- National Rural Health Mission

ASHA-Accredited Social Health Activist

SARI- Severe Acute Respiratory Infection WHO-World Health Organization

CCC-COVID Care Centre

DCHC-Dedicated COVID Healthcare Centre

DCH- Dedicated COVID Hospital

CHC-Community Health Centre

AIIMS-All India Institute of Medical Science

MOHFW-Ministry of Health and Family Welfare

AYUSH-Ayurveda Yoga & Naturopathy Unani Siddha and Homeopathy

IPC-Infection Prevention and Control

HCW-Health Care Worker

NIOSH-National Institute for Occupational Safety and Health

BMW- Bio Medical Waste Management

ISCCM-Indian Society of Critical Care Medicine

IPCT-Integrated Primary Care Team

SNCU-Special Newborn Care Unit

CBMWTF- Common Biomedical Waste Treatment and disposal Facility

CPCB-Central Pollution Control Board

SPCB-State Pollution Control Board

PCC-Pollution Control Centre

About the Organization

The National Rural Health Mission (NHM), now under National Health Mission is a great and wide initiative taken by the GOI to address FOR the needs RELATED TO HEALTH of under-served rural areas. It was launched on 12 April 2005 by Indian prime minister and till that time it was only confined for the health needs of 18 states including only those who were having the poor health indicators only.

The Union Cabinet headed committee made its decision on date 1 May 2013, and approved the launch of National Urban Health Mission (NUHM) as a Sub-mission and the being the other sub-mission National Rural Health Mission (NRHM) comes under the National Health Mission (NHM).

Goals of NHM: -

- Reduction in Infant Mortality Rate and Maternal Mortality Ratio by at least 50% from existing levels in next seven years
- Universalize access to public health services for Women's health, Child health, water, hygiene, sanitation and nutrition
- Prevention and control of communicable and non-communicable diseases, including locally endemic diseases
- Access to integrated comprehensive primary healthcare
- Ensuring population stabilization, gender and demographic balance.
- Revitalize local health traditions and mainstream AYUSH
- Promotion of healthy life styles.

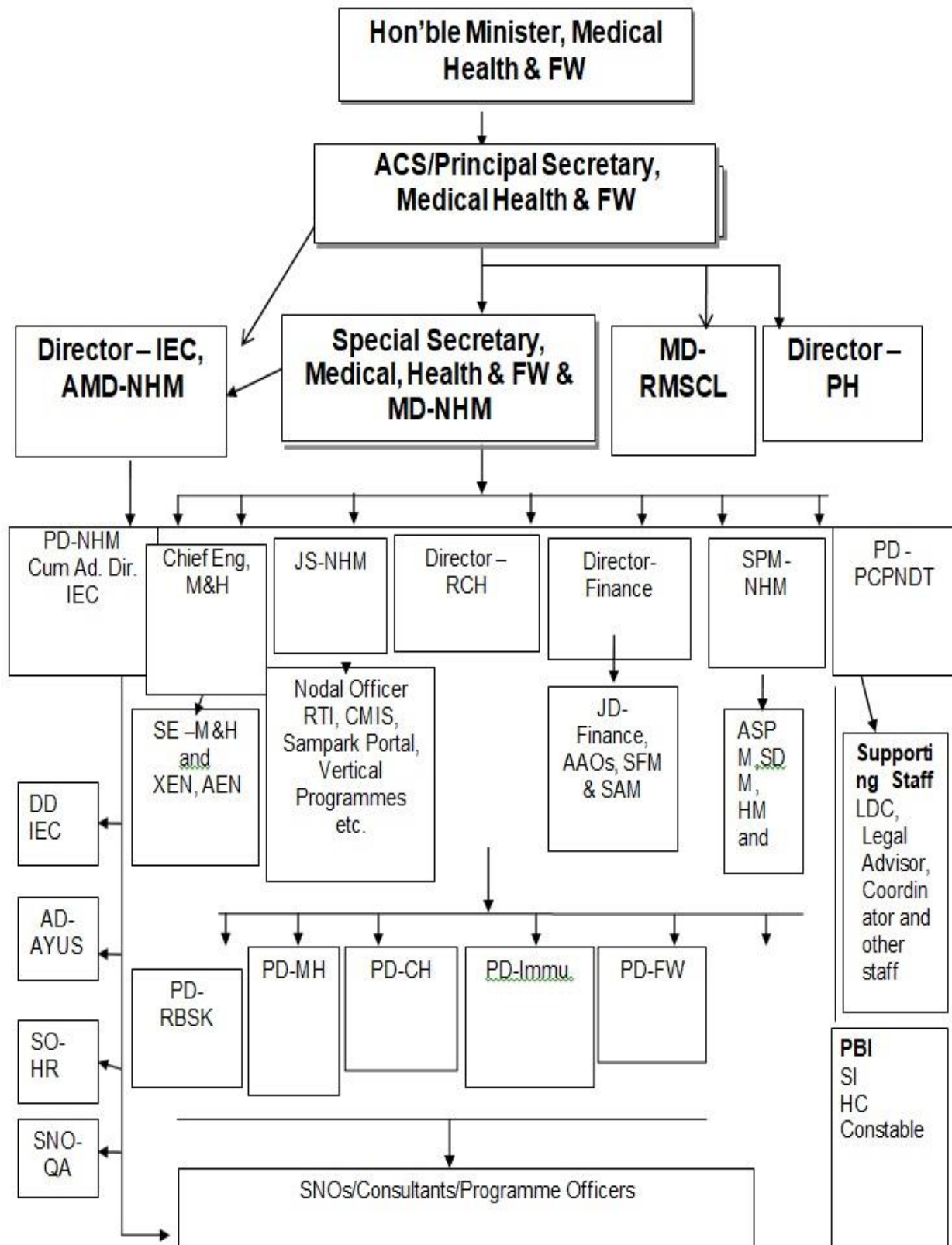
Core strategies of NRHM: -

- Increasing Community ownership by vesting responsibility with PRIs
- Decentralized village and district level health planning and management
- Appointment of Accredited Social Health Activist (ASHA) to facilitate access to health services
- Strengthening the public health service delivery infrastructure, particularly at village, primary and secondary levels

- Mainstreaming AYUSH,
- Improved management capacity to organize health systems and services in public health
- Emphasizing evidence-based planning and implementation through improved capacity and infrastructure,
- Promoting the non-profit sector to increase social participation and community empowerment, promoting healthy behaviors, and improving intersectional convergence.



ORGANISATIONAL STRUCTURE OF NHM



PART 1

PROJECT

Reference outline for covid-19 hospital **set-up**

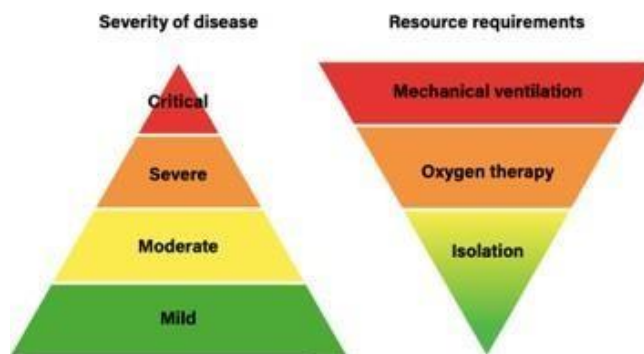
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INTRODUCTION

On 11th March 2020 WHO has declared the COVID-19 outbreak as a pandemic, this virus has affected people of almost 210 nations worldwide. COVID-19 is a highly infectious disease hence it is necessary to isolate all suspect and confirmed cases. Because of the migration of people from the other nations and states Rajasthan has reinforced the observation and has already taken all the measures to control community transmission of the disease.

As this COVID-19 transmission is progressing, it became mandatory and crucial for the state to be ready for giving the best quality of health care services to the patients. The strict nation Lockdown has given the time and made all the states to recheck their health care infrastructure and be ready for the worst scenario towards the community spread of the disease if it occurs. Hence it is vital to set up a plan and framework for triaging and clinical choices in preparing the best dedicated facility for the treatment of COVID-19 patients. The MOHFW has already given the COVID-19 case definitions as a suspect case and a laboratory-confirmed case. It becomes very important at the time to segregate and prioritize the COVID-19 cases and provide the best health care facilities accordingly.



Reference: SARI treatment Centre, WHO March 2020

Figure 1 showing the disease spectrum according to the severity of the disease at hierarchical level (coded in the colors as red, orange, yellow, green) and the resources required corresponding to that particular level.

As of now, the spread of the disease is very low and restricted mostly to the urban areas of the nation only. Maharashtra is the highly affected state and Rajasthan seems in very control

until now compared to the other states in terms of the spread of the disease. The state has implemented and adapted various appropriate measures to prevent the further community transmission of COVID 19. In which the Bhilwara model got very popular for preventing the rapid spread.

CURRENT STATUS OF THE DISEASE IN RAJASTHAN

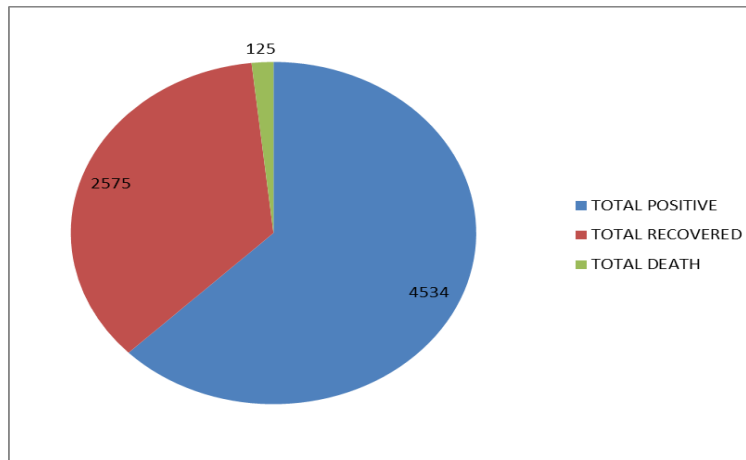


Figure 2 showing the current situation of COVID 19 disease in Rajasthan till 14th of May

Till May 14th number of total positive cases was 2575 from which 2575 has already recovered and 125 deaths have noted till now. Jaipur, Jodhpur, Udaipur, Kota, Ajmer are the highly top 5 affected districts of the state as shown in figure 3.

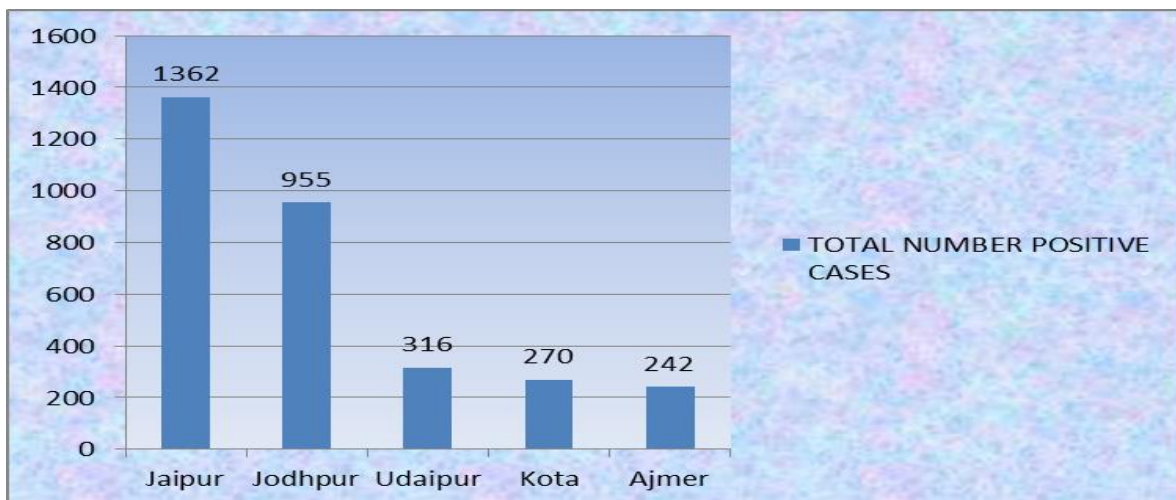


Figure 3 showing the top five affected districts of Rajasthan till 14th May

Though the numbers of positive cases are 4534 the recovery rate observed is approx. 57% and the death rate is 2.7% in the state which led the active cases only to 1771.

OBJECTIVE OF THE REPORT

- To arrange all the various leveled structures for COVID 19 treatment
Category 1-COVID Care Centre (CCC)
Category 2-Category 1Dedicated COVID Healthcare Center (DCHC)
Category 3-Dedicated COVID Hospital (DCH)
- To prepare an outline of COVID 19 hospital setup.
- To situate how all the other (Non COVID) patients will be dealt with.

GUIDELINE STRUCTURE

All the dedicated facilities should be devoted for the purpose of COVID 19 management only.

For COVID 19 COVID Care Centre, Dedicated COVID Health Center, and Dedicated COVID Hospital are the 3 types of facilities observed.

All three COVID 19 dedicated facilities will have different marked areas for suspect cases, cases that test negative and the cases which are laboratory confirmed hence they should not be allowed to mix under any situation.

State to convert 60 DCH, 300 DCCC and 60 DCHC till July.

Every single speculate case (regardless of seriousness) must be consider for COVID 19 and the administration of these cases will rely upon their:

- (1) Clinical status/case definition according to rules gave by government of India or state government time to time.
- (2) Result of COVID 19 testing.

COVID CARE CENTRE

- The CCC will give consideration just for cases that are clinically relegated as the mild or as exceptionally mild cases or COVID suspected case.
- The COVID Care Centers are temporary facilities these can be arranged in hostels, schools, lodges, hotels and so on both open and private. If needed the existing quarantine offices could likewise be changed over into COVID Care Centers. Functional hospitals like CHC's and so on which might be dealing with normal, non-standard cases can

likewise be assigned as COVID Care Centers as final retreat, when no cases go unsubstantially.

- This is very essential as basic non COVID clinical facilities like for those ladies who are pregnant, newborn, other co-dismal conditions and so on are to be kept up.
- COVID Care Center is wherever assigned for admitting both the suspected and the confirmed cases; these facilities must have separate area for suspect, negatively tested cases and confirmed cases with preferably separate entry and exit. Suspect and confirmed cases should not be allowed to mix under any circumstances.
- To any speculate cases are admitted in COVID 19 Care Center ideally individual rooms with attached toilet facility should be assigned as far as possible. When such facility is not possible, they may be kept in halls or wards maintaining at least two meter distance between beds. All the patients must use triple layer surgical masks and be counseled for hand washing and/or use of sanitizer, respiratory etiquettes. They should not be allowed to share utensils, mobile phones, laptops etc.
- All dedicated CCC should likewise have a devoted Ambulance with BLSA fitted with adequate oxygen support facility on 24*7 premise, for ensuring safe transport of a cases if the symptoms changes.
- The HR to main at CCC may also be drawn from AYUSH doctors. Their work can under the guidance of an allopathic doctor.

DEDICATED COVID HEALTH CENTRE

- DCHC will provide care to clinically moderate cases.
- It can be a full hospital or a block separated in the hospital with preferably different entry\exit/zoning.
- Private hospitals can also convert into a COVID Dedicated Health Centers.
- Wherever a DCHC is assigned 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.
- These hospitals should have bed sided oxygen support.
- Every DCHC must be located near one or more Dedicated COVID Hospitals.

- Every DCHC should also have BLS ambulance equipped with sufficient oxygen support for ensuring safe transport of a case to a Dedicated COVID Hospital

DEDICATED COVID HOSPITAL

- The DCH will provide comprehensive care primarily for the clinically severe patients.
- It can be a full hospital or a block separated in the hospital with preferably different entry\exit/zoning
- Private hospitals can also convert into a COVID Dedicated Hospitals.
- These hospitals must have ICUs with all the necessary equipment's needed, Ventilators and bed sided full Oxygen support.
- These facilities must have separate area for suspect and confirmed cases with preferably separate entry and exit. Suspect and confirmed cases should not be allowed to mix under any situation.
- The DCH going to be the referral center for the Dedicated COVID Health Centers and the COVID Care Centers.

MANAGEMENT CONSIDERATIONS OF DEDICATED COVID HOSPITALS

Principles of IPC strategies associated with health care with suspected COVID, to prevent or restrict further spread of infection in health-care settings include:

a. Early recognition and source control

- Clinical triage having early recognition and quick arrangement of patients in a separate isolated zone from other patients is an important measure for rapid identification and suitable isolation and care of COVID suspected patients.
- For the facilitation off early recognition of suspected cases, healthcare facilities must:
 - Facilitate the staff to have a top level of clinical info.
 - A screening questionnaire of institute and in the public areas post signage for reminding patients with COVID symptoms to alert staff.
 - Promotion of preventative measure like respiratory hygiene is important.
 - Suspected COVID case should be isolate at different place from non COVID patients,

and additional Infection prevention and control measure should be taken strictly.

b. Application of Standard Precautions for all patients

- Standard Precautions includes
- hand and respiratory hygiene
- Use of PPE depending on risk
- Prevention of needle-stick or sharps injury
- Safe waste management
- Environmental cleaning and sterilization of patient-care equipment and linen

➤ Hospital should ensure the respiratory hygiene and hand hygiene measure like:

Staff should provide medical mask for suspected COVID cases, ensure their nose and mouth are covered during coughing or sneezing by flexed elbow or tissue for others and after contacting with the respiratory secretions hand hygiene measures should be performed.

➤ Use of PPE

➤ Correct and regular use of PPE will help in reduce further spread of COVID infection
PPE Proper hand hygiene and proper staff straining plays an imp. Role in effective use of PPE Staff should be trained on how to use the PPE.

➤ Staff should ensure the Proper environmental cleaning and disinfection procedures with disinfectant like sodium hypochlorite are followed consistently and rightly.

➤ Ensure that the Waste management protocols are followed strictly.

Implementation of extra safeguards for suspected nCoV diseases

Considerations contact and droplets for suspected COVID infection:

- All the individuals like the family members, visitors and Health workers should follow the contact and droplet measures. And their visit should be limited and recorded must be maintained.

- Ventilation should be 160L/second/patient
- Cohorting of COVID patient should be done when single rooms are unavailable
- Bed distance should be maintained as 1 m
- Use of medical masks, face shield, gowns , PPE, gloves should be done and single use disposable equipment are preferred if not then the equipment should be properly sterilized
- Patient movement should be restricted and routinely disinfect the surfaces which came in contact by the patients.

Airborne considerations for aerosol-generating procedures for suspected nCoV infection:

Some aerosol generating procedures increases the risk of spreading of the infection such as non- invasive ventilation, tracheal intubation, cardiopulmonary resuscitation, tracheotomy, manual ventilation before intubation and bronchoscopy.

In addition to the contact and droplet precautions for the airborne prevention:

- Use of N95, EUFFP2 or equivalent masks is recommended and seal check should be performed before using the respirator.
- Long sleeved gloves should be used and the gowns should be water proof.
- Up to the absolute minimum required for the patient's care the number of person present in room should be in limit.

c.Administrative controls

Administrative controls include the implementation of the IPC infrastructure and performing all the activities related to it;

- Training of staff
- Patient care taker's health education
- Making Policies on early detection of the ARI symptoms due to COVID 19, ensure access to the lab testing of the contact cases, crowd should be minimized in number in the emergency zone.
- Adequate patient to staff ratio can be maintained by providing the large dedicated

- waiting areas for symptomatic patients.
- Monitoring the effective use of supplies.
- Monitoring of staff capabilities, along with mechanisms for improvement as needed

d. Environmental and engineering controls

These controls are required to prevent the further spread of the infection.

- Environmental and engineering controls are important in maintaining the ventilation in the required areas in the hospital facilities.
- A well maintained 1 m separation should be there in between the suspected patient and the other people.

RESPONSIBILITIES, RIGHTS AND ROLES OF HCW'S

HCW's are the front line workers of the outbreak of any disease and are exposed to the greatest risks of the infection. Risks include long working hours, mental and physical stress and wellbeing, long duty hours, weariness, stigma, and occupation burnout, etc.

HCW's includes employees, doctor, nurse technicians, and managers in the health care facilities. Therefore;

- Proper IPC training should be given in a specific period on how to use PPE and ensuring the adequate supplies of the materials required such that the worker does not have to expense for occupational concerned safeties.
- Provide all the appropriate devices for evaluation, testing, triaging, and treatment of the patients.
- Maintain suitable working shifts and hours according to their work.
- Provide all the support for cooperation between the managers and the workers with their representatives.

Do's

- Health workers follow all the protocols related to health procedures and occupational safety. So that it can avoid risk for exposing and safety to others.
- Participate in the training for the new guidelines and the IPC's.
- Treat patients with respect, dignity, and passion irrespective of their religion and race.

- Maintain all the ethics and confidentiality of the patients
- They must self-monitor their illness, self-isolate themselves, or report illness if needed.

DEPARTMENTAL RESPONSIBILITIES OF HCW's AS PER THEIR OPERATIONAL FUNCTIONING WITHIN THE HOSPITAL (SEE FIGURE 5,6)

Setting	Personnel Required	Inventory/Activity/ Skills to be tested
1. Outpatients facilities/ Initial Triage		
Consultation Room	Healthcare workers (Doctors and Nurses)	Physical examination of patients with respiratory symptoms. Inventory PPEs & Medicines, hand washing and sanitizer facility.
	Healthcare workers (Doctors and Nurses)	Physical examination of patients without respiratory symptoms but based on self-declaration and /or history
	Cleaners	After and between consultations with patients with respiratory symptoms; Disinfectants.
2. Emergency /Inpatient facilities/Isolation Rooms and Duty Stations		
	Healthcare workers (Doctors and Nurses)	• PPE • Drugs & Disposable • Oxygen Apparatus • Suction Machine • Hand washing and Hand sanitizer facility
	Cleaners	Entering the room of COVID-19 patients with proper PPE
Laboratory	Lab Technician	Collection of Respiratory samples
Administrative Areas	All staff, including healthcare workers	Administrative tasks that do not involve contact with COVID -19 patients but work on logistics and supply and record maintenance. Hand washing and hand sanitizer facility.

FIGURE 5

3. ICU Facilities		
ICUs	Respiratory specialists Anesthesiologist • ICU Nurses • OT Technician	• PPEs • Knowledge and skill as per treatment protocols • Oxygen supply • Emergency medicines • Monitors • Defibrillators • Ventilators
4. Ambulance or transfer vehicle (For shifting to Tertiary Care Centre)		
	Healthcare workers	Transporting suspected COVID-19 patients to the referral healthcare facility.
	Driver with Paramedical workers	Involved only in driving the patient with suspected COVID-19 disease and the driver's compartment is separated from the main compartment. Assisting with embarkation /disembarkation of patient with suspected COVID-19 disease.
	Cleaners	Cleaning and disinfection after and between transport of patients with suspected COVID-19 disease to the referral healthcare facility
5.Details of Tertiary Care Centre (Contact No. of Nodal Person and Emergency No.) are available		

FIGURE 6

ASSESSMENT OF THE HCW's

The essential training should be provided to fill the voids. Like a Microbiologist must be posted for overseeing the tests collection from the patients in a legitimate way and guaranteeing the transportation of test to assigned laboratories for testing beneath appropriate conditions including support of cold chain for this reason.

PUBLIC HEALTH SPECIALISTS

They should be engaged to supervise the reduction of the infection and to report the state surveillance team for monitoring and tracking of the discharged patients till their crucial time is over.

INFRASTRUCTURAL MANAGEMENT

For efficient patient management and infection control hospitals can be divided into zones and Floor plan can be prepared by recognizing all stairs, utility areas, corridors etc. And note the same must be noted in floor plan.

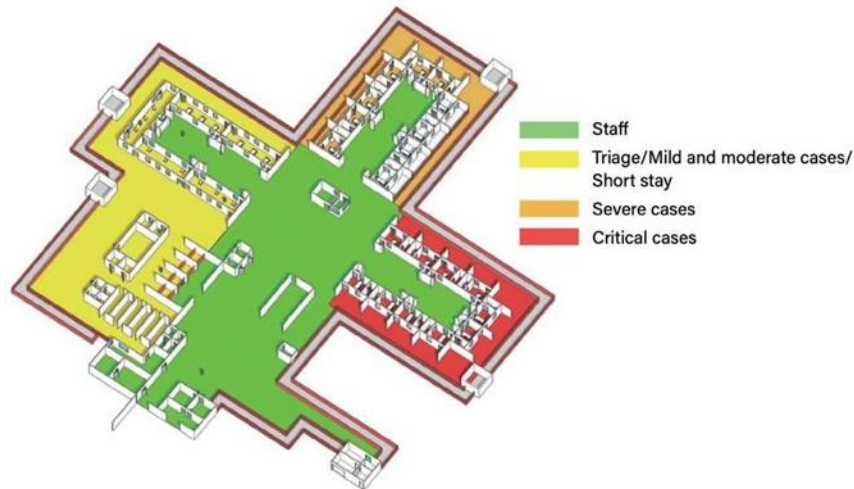


Figure 7 Reference: SARI treatment Centre, WHO March 2020.

The above Figure 7 showing the different areas distribution for a COVID dedicated Hospital according to the WHO standards.

SITUATIONAL ASSESSMENT OF HOSPITAL FACILITY FOR COVID PATIENTS

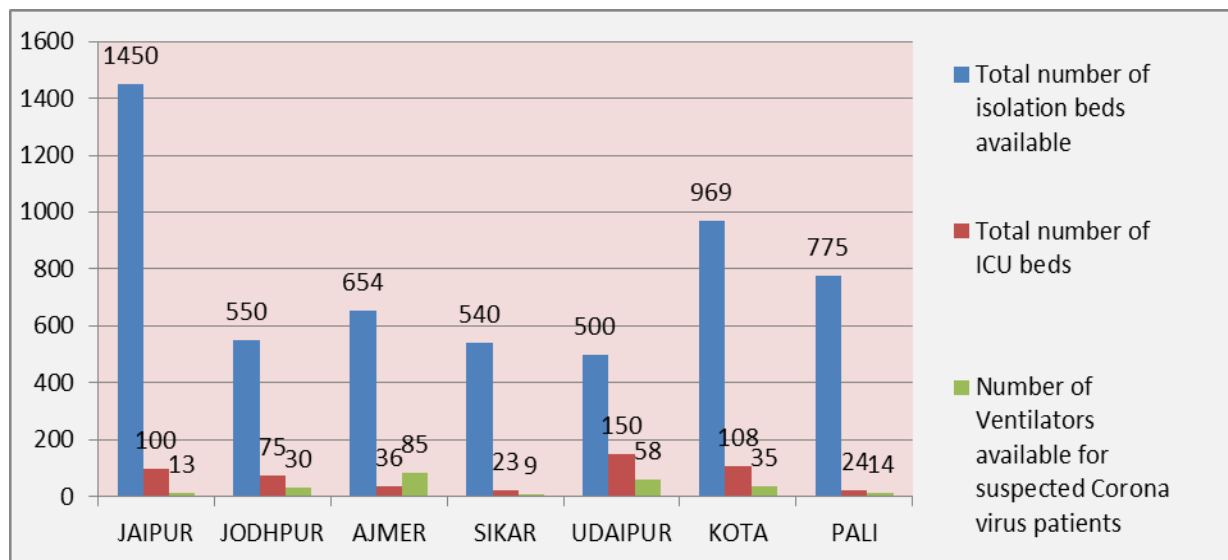


Figure 8

Figure 8 is showing the top 7 districts having a maximum number of bed facilities available for dedicated COVID hospitals.

Maximum numbers of the beds are available in Jaipur for isolation of COVID patients while Ajmer is having the maximum number of ventilators available for the COVID patients. Udaipur has the highest number of ICU beds available for COVID patients in the state.

MANPOWER OPERATIONAL DISTRIBUTION

- Make a list of all the HR available in the hospitals with their details like name, designation and contact numbers.
- Prepare a framework for the positioning of the HR while maintaining the
Physician patient ratio as 1:12 (for the ICU)
Nurse to patient ratio 1: 3 (for ventilated patients)
Nurse to patient ratio 1:6 (HDU)
Patient to nurse ratio is 1: 10 (For the wards)
- Make the list of HR district or zone wise from all the private and the govt. institution's based on their specializations
- Make the groups of the workforce as Group of action (on duty group), One group quarantined (on standby), and last One reserve group and make a roster of their duties assigned of 14 days.
- Monitoring of all the staff should be done if there is any absenteeism and pull the reserve group accordingly.
- Job cards can be prepared
- Proper training should be done based on their job cards.

1. SETTING UP OF ISOLATION/FACILITY WARD

Suspect of COVID 19 cases should be taken care of in the isolation rooms a detailed algorithm for selection of cases can be seen in figure 9.

The aim of the isolation ward is to control the flow of air for the reduction of the airborne particles that can cause infection up to a level that can guarantee the cross-infection of the other people in the health facility very unlikely. 50 beds minimum is advised for isolation ward at the state level. And for the district level, 10 beds minimum are recommended for setting up of isolation wards.

All the non-essential equipment and furniture should be removed so that the left out is easy to clean and doesn't contain the dirt or moisture in it or around it.

COVID patient should be allotted a single room if it's not possible 3 feet distance between the beds should be maintained

A minimum of 2000 sq. feet area is recommended for creating a 10-bed isolation ward facility with attached toilets to 5 per bed.

Algorithm for isolation of suspect/confirmed cases of COVID-19

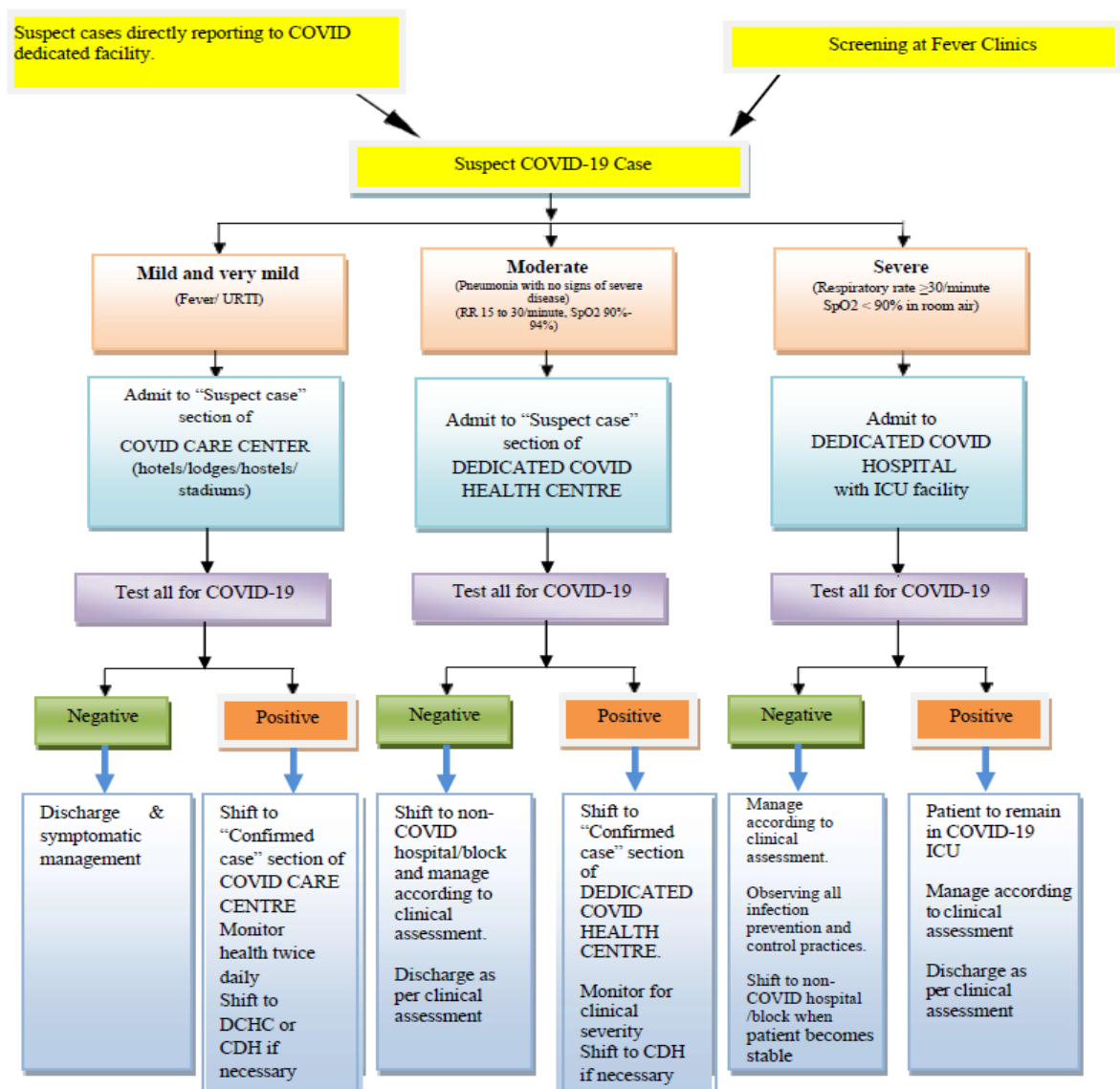


Figure 9

ISOLATION WARD CONVENTIONAL MANAGEMENT

Following are the precautionary measures need to be considered in the isolation wards

- Patient placement will be an essential measure in reducing the spread of the infection in the isolation wards hence patient will be managed in a single negative pressure room with toilet facility attached in the CCU or if a negative pressure room is not available then a room with closed doors should be provided.
- If there is an unavailability of the attached toilets then a commode should be arranged for the safe removal of bedpan and placed at an appropriate point of disposal.
- Anterooms should be disinfected regularly as per the environmental decontamination protocols for COVID 19
- Staff should follow all the respiratory and hand hygiene protocol while entering and exiting the anterooms.
- If anterooms are not available in the facility then local IPC teams will have to consider the other ways according to their suitability.
- Only staff should be permitted in the isolation rooms and if required only the essential visitors should be permitted with all the protective measures to avoid the crowding and reduce the chances of transmission.
- Precautions while using the Ventilators :
Only closed suctioning should be used
Circuits of the ventilators must not be broken if not required
Ventilators should be placed for the stand by use
A heat and moisture exchange mechanism should be used
All the hand hygiene protocols must be followed while using
- Only use the essential equipment's in the room and avoid the placing and use of extras
- Chlorine-based disinfectant should be used as a solution mix of 1000 ppm
- Isolation room should be cleaned twice a day and lobby for at least once a day
- The health care devices should not be left in isolation rooms like USG, x-ray machines, etc.
- For transferring the patient a well-sanitized trolley should be used and the department should be informed prior only to the arrival of the patient.
- During transferring of the patient if the people are not wearing the PPE then they should

have to maintain at least 2-meter distance from the patient

- Unnecessary transfers to the other hospitals must be avoided.

2. CONVENTIONAL MANAGEMENT OF QUARANTINE CENTRES

Due to the rapid increase in the number of cases and less availability of the health care MOHFW recommended converting the schools, hotels, hostels, and other places like stadiums for the quarantine centers.

1. We call a contact as a person while the quarantine is been implemented:

- COVID-19 patients provided with direct care who have no proper personal protective equipment (PPE);
- Remaining in the equivalent near the condition of a COVID-19 patient (this can include workplaces, classroom, large people meetings)

2. Traveling along with a COVID-19 staying nearby at a close distance (say around 1 meter):

- The case is taken into consideration if patients by any means of travel in the duration of the last 14 days after the symptoms are seen.

3. Quarantine Centre Arrangements:

- Well airy spaces, large rooms with a single bed also having attached washrooms are given to those in quarantine. Beds are kept with a minimum distance of 1 meter apart, if single rooms are not available.
- Proper air ventilated, systems of filtration and guidelines of managing wastes for efficient control of infection;
- For the persons quarantined social distance Maintenance is done (1 meter or more);
- Proper level of comfort for Accommodation, includes:
 - a. Food, water and hygiene facilities
 - b. Security of the bags and other things
 - c. Medical treatment
 - d. Communication in a language that they can understand explaining: their rights; provisions that will be made available to them; how long they will need to stay; what will happen if they get sick; contact number info of their known

people.

- e. For public health purposes different methods used to help for isolated travelers, segregated or subject to clinical assessments;
 - f. For family members outside the quarantine facility help through communication;
 - g. Access to internet facilities, news, etc. if feasible;
 - h. Psychosocial support
 - i. For older people and individuals who have any co-morbid conditions, because of which they have increased risk for severe COVID-19 disease, are given special considerations.
4. Contact's home, hotel can be an option for quarantine. Keeping the setting aside, for protected and effective quarantine a check is must to guarantee that.
5. When choosing home as quarantine a proper aerated single room provided for a person , maintaining a distance of 1m minimum from all the other members in house if no single room available, using same places in share and utensils needs to be minimized also proper aeration of places used in common.(like kitchen, bathroom etc.).
6. Quarantine centers with IPC measures

A suspected case of COVID-19 is any person who develops some respiratory illness during quarantine period and treated accordingly.

- Before eating meals, and coming in contact with any kind of respiratory secretions regular proper hand hygiene practices are implemented this could include hands cleaning with soap and water or with an alcohol-based hand rub.
- Keep examining if all persons who are quarantined should be practicing respiratory hygiene, awareness of covering mouth nose during sneezing and coughing or covering through flexing elbows /use of tissue paper, also having knowledge of its proper disposal after use of tissue;
- Mouth and nose should not be touched frequently
- Individuals with no symptoms don't require wearing masks. Evidences are not present currently that individuals who are not sick protected by wearing a mask of any kind.

- The IPC policies for administrative within the quarantine facilities include, but may not be limited to:
 - Establishing IPC infrastructures and activities that are sustainable;
 - Individuals quarantined and quarantine personnel are given knowledge regarding IPC
 - Training is needed on standard precautions is given to those working in the quarantine facility before the implementation of quarantine measures
 - On arrival of those quarantined individuals, similar standard precautionary advice are given
- If symptoms are developed personnel and quarantined persons both require to know the importance and should immediately be asking for medical care.
- Policies on the early recognition and referral of a suspect COVID-19 case should be developed.
- Follow regular and proper cleaning and disinfection of surroundings.
- COVID- 19 infection knowledge and understanding should be taught to the person who cleans and make sure surfaces in the surrounding are completely and frequently cleaned during quarantine period:
- Time to time cleaning and disinfecting of surfaces that are touched such as tables, bed-frames, and furniture daily with disinfectant having a diluted bleach solution (1-part bleach to 99 parts water). 70% ethanol can be used for bleach intolerable surfaces.
- Bathroom and toilet surfaces must be cleaned and disinfected at least once daily with disinfectant having a diluted bleach solution (1- part bleach to 99 parts water)
- Clothes, bed sheets, bath and hand towels, etc. Should be cleaned with general laundry soap and water at 60–90 °c with common laundry detergent and then dry them
- Make sure a sanitary landfill (not in areas that are open) should be used for the hospital waste disposal :
- During surface cleaning the person should wear gloves that can be degraded; proper hand washing should be there before and after infected clothes are touched

even after removing the gloves.

7. For health monitoring of quarantined person min. Requirements in quarantine period are
 - Follow-up daily including daily body temperature and symptom screening should be there for quarantined individuals
 - Additional surveillance for chronic conditions or specific medical treatments for high-risk groups.
 - At quarantine facilities resting period of staff and resources should be considered. Limited public health resources should be prioritized towards health care facilities and case-detection activities is of utmost importance.
 - During end of quarantine period it is usually advised to do laboratory testing of a respiratory sample from quarantined persons, keeping symptoms aside.
8. Quarantine measures introduced early during outbreak may delay onset of disease to the areas where local transmission is seen. Quarantine can also become additional sources of contamination of disease if proper implementation is not there.
9. Containment strategy incorporates fast diagnosis of laboratory confirmed cases, and isolation and managing them in a medical facility or home.
10. 14 days of quarantine from day of exposure to a COVID-19 patient is required for individuals with laboratory-confirmations.

3. CONVENTIONAL MANAGEMENT AND PLANNING OF HOSPITAL INFECTION CONTROL

The HICC has an important and active role in execution; implementation and planning of the COVID dedicated hospital. IPC should be given the very most priority while making the plan and implementing it. All the necessary precautions should be considered for preventing the further spread of the COVID infection. And well guided training should be arranged for all the health care workers according to their categorization as medico and non-medical staff on COVID and Infection Prevention and Control.

Provide proper direction on how to use the PPE's shown in figure 10

- Personal protective equipment (PPE) is specialized clothing or equipment, worn by an employee for protection against infectious materials

- All of the PPE presented here, avert the contact with deadly nCoV and even the body fluids by creating an obstruction between the individual wearing PPE and the infection.
- Components of PPEs – glove, gown/apron, mask, respirators, goggles, face shields and shoes
- Gloves secure the hands, skin is protected by gowns and aprons, respirators and masks ensure the nose and mouth, goggles secure the eyes, and face shields ensure the whole face and shoes to protect feet. The respirator has been designed to protect the respiratory tract from airborne transmission of infectious agents
- The way gloves are used can impact the danger of ailment transmission. Therefore, Care to be taken while wearing gloves, contaminated gloves invite infection.

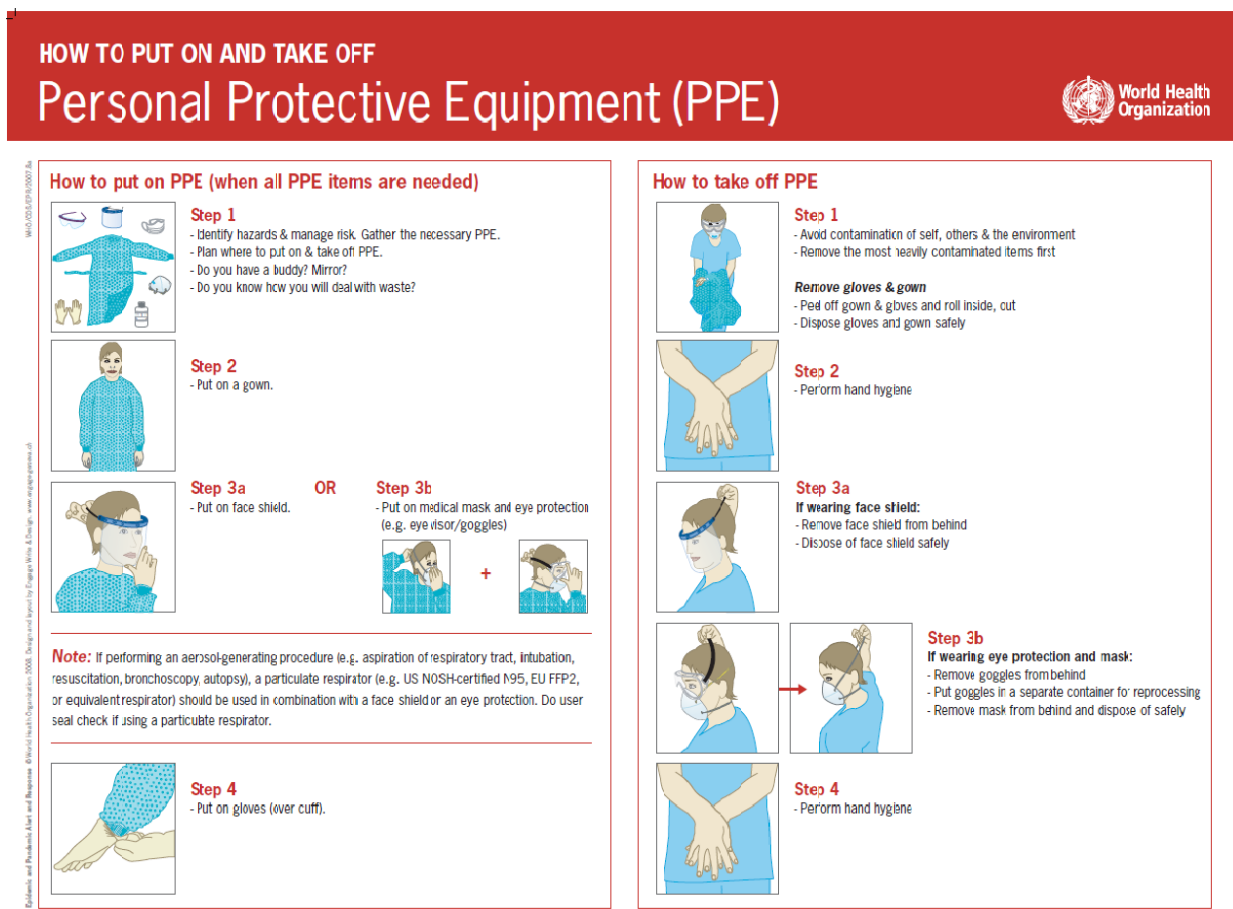


Figure 10: Source WHO 2020

4. CONVENTIONAL MANAGEMENT OF LABORATORY

After all the planning done as described above COVID dedicated hospitals will be ready.

Now rapid testing is required hence laboratory management is the key element in it and further forestalling the spread of disease. So it becomes very important to follow the protocols in the laboratories as per the guidelines.

➤ Responsibilities of HCW's:

- Following all the case definition clinician will decide the necessity for collection of sample for lab testing for corona virus.
- Samples must be collected by the trained pulmonologist with the microbiologist aside with taking all the safety precautions.
- Standard triple packaging is recommended for the clinical samples to be sent for the lab testing.

➤ Selection of the patient:

Person having the COVID 19 symptoms and any one of the following i.e. a history of travel from COVID affected countries in 14 days prior to symptoms onset; disease in healthcare worker working in an environment of COVID 19 patients; unusual or unexpected clinical course, especially sudden deterioration despite appropriate treatment; should be urgently investigated.

➤ Labeling of samples

Proper labeling (name/age/gender/specimen ID) should be done on container containing sample and on the outer container other details of sender like (name/address/phone number) and mention "To be tested for COVID 19" on it.

➤ Samples to be collected are from

- Nasopharyngeal swab OR Nasal Swabs – 2
- Throat Swab
- It requires to ensure that neck is in extended position before collecting the samples
- Nasopharyngeal swab will be collected with the per nasal swab provided in the sample tool kit, after taking out the swab it is passed along the floor of nasal cavity and left there for about five second and transferred into VTM and transported to the designated lab at 4 degree Celsius as soon as possible (same day).
- For collection of samples from throat area the other sterilized swab is swabbed over the tonsillar area and posterior pharyngeal wall and finally transferred into Viral Transport Medium, VTM and stored and transported to the designated lab at 4 degree

Celsius as soon as possible (same day).

- It is recommended that Checklist of things for readiness for collection of sample from suspected new COVID-19 cases need to be followed up into an isolated room with thorough ventilation with HEPA filters and exhaust fan.

Protocol for sample collection and transportation

- All the respiratory and hand hygiene PPE
- Patient Performa for 2019-nCoV testing
- Viral Transport Medium Vial
- Sterile the packed swabs individually with flocked nylon/Dacron/polyester tips with a synthetic shaft with break point
- Permanent markers
- Tongue depressors
 - i. Triple layer packaging materials having a Paraffin tape or equivalent for sealing individual VTM vials
 - ii. Cotton or absorbent material
 - iii. Clear zip lock bags
 - iv. Ice packs
 - v. Vaccine carriers
 - vi. Thermocol boxes
 - vii. Biohazard labels
 - viii. Refrigerators
- If samples are to be stored beyond 48 hours then deep freezers are required.
- Must have Facilities for the disposal BMW as per latest rules for bio medical waste management
- Colored bags and dustbins must be available at the anteroom for

bio medical hazard

- i. Puncture proof container
 - ii. SPILL KIT
 - iii. PPE KIT
 - iv. Warning labels like Biohazard, DO NOT ENTER sign
 - v. Marker or Chalk
 - vi. 1% freshly prepared sodium hypochlorite
 - vii. Cotton, Tissue paper rolls, Blotting paper or Absorbent material
 - viii. Tongs /Forceps and Dust pan
 - ix. Disinfectants
- Documents that are required to be maintained for sample testing
- All the details of samples need to be maintained in the lab.
 - Detailed packaging list and the invoice Performa
 - All the bills need to be mentioned and attached if transport of the sample done through rail, road, airway or sea transport.

Sample collection details like from where the sample needs to be collected where to be stored how to transport and measures to be taken is shown in figure 11

Specimen type	Collection materials	Transport to laboratory	Storage till testing	Comments
Nasopharyngeal and oropharyngeal swab	Dacron or polyester flocked swabs*	4 °C	≤5 days: 4 °C >5 days: -70 °C	The nasopharyngeal and oropharyngeal swabs should be placed in the same tube to increase the viral load
Broncho alveolar lavage	sterile container*	4 °C	≤48 hours: 4 °C >48 hours: -70 °C	There may be some dilution of pathogen, but still a worthwhile specimen
Tracheal aspirate, nasopharyngeal aspirate or nasal Wash	sterile container*	4 °C	≤48 hours: 4 °C >48 hours: -70 °C	Not applicable
Sputum	sterile container	4 °C	≤48 hours: 4 °C >48 hours: -70 °C	Ensure the material is from the lower respiratory tract
Tissue from biopsy or autopsy including from lung	sterile container with saline	4 °C	≤24 hours: 4 °C >24 hours: -70 °C	Autopsy sample collection preferably to be avoided
Serum (2 samples – acute and convalescent)	Serum separator tubes (adults: collect 3-5 ml whole blood)	4 °C	≤5 days: 4 °C >5 days: -70 °C	Collect paired samples: acute – first week of illness convalescent – 2 to 3 weeks later

Figure 11: Source WHO guidelines for nCoV

- Equipment's required for Clinical Samples Collection, Packaging and Transport
- All the Requirement for the Sample collection, Packaging and Transport and things to be noted are Shown in Table 1

Sample vials and VTM	Adsorbent material	A leak-proof secondary container (50 ml centrifuge tube)	
			
Hard-frozen Gel Packs	A suitable outer container (minimum dimensions: 10 x 10 x 10 cm)		
			
Procedure for Specimen Packaging and Transport 1. Use PPE while handling specimen	2.Seal the neck using Para film	3.Cover the vials with the absorbent material	4.Put and Arrange VIAL in secondary container
			

5.Place the centrifuge tube inside a zip-lock pouch 	6.Place the zip-lock pouch inside a sturdy plastic container and seal the its neck 	7.Use the Thermocol box as an outer container place the secondary container, ion it and surround it by hard- frozen gel packs 	
8.Use a hard card- board box as an outer container and place the secondary container and the gel packs in it 	9.Place the completed Specimen Referral Form and request letter inside a leak-proof, zip-lock pouch 	10. Secure the zip-lock pouch with the Specimen Referral Form on the outer container 	11Attaching the labels with all the required details of sample 

Table 1

5. CONVENTIONAL MANAGEMENT OF BMW

On the basis of BMW management rules, Guidelines for BMW in the corona patient wards.

Only pre-treatment and separation will be done in the hospital and the final disposal should be done by common biomedical waste treatment and disposal facility (CBMWTF)

Following are the color coding's used for the BMW disposal.

➤ Yellow Category

- Human Anatomical Waste: Human tissues, biopsies are to be disposed of in yellow colored non-chlorinated plastic bags.
- Soiled Waste: Items contaminated with blood, body fluids like dressings, casts of plaster, cotton swabs and bags with discarded blood and the blood components disposed of in yellow bag.
- Cytotoxic drug vials handling should not be done to person who is unauthorized. Incineration at temp. More than 1200°C by manufacturer/supplier of returned cytotoxic drugs that are expired. Common biomedical waste treatment facility is used for incineration at temp. More than 1200 °C in yellow bag/container with cytotoxic label for Leftover cytotoxic drugs and items contaminated by it.
- Chemical Waste: Disposal using incineration by CBMWTF in yellow colored non-chlorinated containers done for chemicals used in production of biological and discarded solid disinfectants, and chemical.
- Liquid waste - As per BMW (Principal) rules, 2016. Separate collection of liquid waste generated from chemicals use in production of discarded disinfectants, samples of patients infected secretions, aspirated body. Chemical disinfection by use of sodium hypochlorite solution (1-2%) with contact period of 30 min followed by effluent treatment then directed to drains.
- Discarded items Incineration in non-chlorinated yellow bag done after chemical disinfection with non-chlorinated (lime/alcoholic: 5 % Lysol for 30 minutes, 5% Phenol for 30 min) or 1- 2% sodium hypochlorite and then shredding.
- Microbiology, biotechnology waste: Pre-treatment by autoclaving of laboratory cultures, specimens of micro-organisms, live/attenuated vaccines, humans and animals cell culture used in research, residual toxins culture plate's dishes. Then

disposal in respective color category to CBMWTF. At site counting, sealing, weighing and making records these are autoclaved. These goes for incineration to CBMWTF after they are packed in yellow bag.

➤ **Red Category**

Contaminated Waste (Recyclable): this includes disposable items such as tubing, oxygen mask, bottles, IV tubes and sets, catheters, urine bags, and gloves that are nicked, wherever applicable and put in red bag. The needles are cut with the needle destroyer/needle cutter preferably. The cut/mutilated syringe is disposed finally in red colored non-chlorinated plastic bags or containers.

➤ **White Category(translucent)**

Waste sharps (also metals): Needles, scalpels, blades or any other contaminated sharp object that may cause puncture and cuts. The needles are cut with the needle destroyer/needle cutter preferably. This includes used, discarded and contaminated metal sharps. These are stored in tamper proof, leak proof and puncture proof containers for sharps storage. Collect and send for final disposal when 3/4 full. These are sent to central common waste site in tamper proof, leak proof and puncture proof containers for final disposal to CBMWTF.

➤ **Blue category:**

Metallic and glass implants: The blood sample glass vials discarded and contaminated glass like slides etc. have to be disinfected (1-2% sodium hypochlorite for 30 minutes at least) to be packed in puncture proof and leak proof boxes or containers with blue colored marking and then sent to common central waste site for final disposal to CBMWTF. The uninfected glass like medicine bottles or ampoules which are not infected are put in puncture proof and leak proof boxes or containers with blue colored marking. The metallic implants are pre-treated in the same manner and are to be packed in separate puncture proof and leak proof containers with blue colored marking.

- Articles (bins, bags, trolleys)
 1. Bags
 - Storing and transporting BMW shall be in compliance with the Bureau of Indian Standards using bags. Until publishing of Standards, as per Plastic Waste Management Rules, (2016) bags should be carried.
 - Biohazard symbol, hospital logo and with barcoding to be supplied by CBMWTF are marked on Yellow, Blue, Red and translucent bags
 2. Bins
 - Containment of waste: In clinical areas different color and size bins are placed at identified sites also which are foot operated, closed, convenient to use and closed.
 - Disinfection of Bins: Washing facility of hospital, should be used for Chemical disinfection of the waste bins using hypochlorite solution (1-2%) on day to day basis.
- Segregation, package and then transport and storage to common waste site
 - Before transportation Labeling of BMW based on waste type, generation site is done.
 - For final treatment and disposal at CBMWTF, the storage is done at identified safe sites at area of its generation for temporary duration.
 - The administration, sanitation and security staff is responsible to make sure of safety and prevention of thefts and recycling of the waste in that duration.
 - After 48 hours the BMW that isn't treated should not be kept stored.
- Segregation, package and then transport and storage to common waste site
 - Before transportation Labeling of BMW based on waste type, generation site is done.
 - For final treatment and disposal at CBMWTF, the storage is done at identified safe sites at area of its generation for temporary duration.
 - The administration, sanitation and security staff is responsible to make sure of safety and prevention of thefts and recycling of the waste in that duration.
 - After 48 hours the BMW that isn't treated should not be kept stored.

- Collection
 - For wards/laboratories its done 2 or more times on regular basis each day.
 - Waste collectors get it with labeling done by on duty staff.
 - Quantity /number of bags given to HCW records a waste log book for the for every patient care area .
 - BMW register every day has to be filled by clear label on the basis of color and category wise by staff and for further record signing the slip.
- Transportation
 - Generation area send to central waste storage from hospital waste that is tightly packed via designated route, using Trolleys that have color coded, covered and leak proof wheel barrows.
 - Before disposal sanitation staff verifies number/size of bags for every trolley which follows recording, quantification and barcoding.
 - Central waste storage cleaned every day.
 - At waste storage area trolleys are chemically disinfected every day by hypochlorite.
- Transportation to CBMWTF
 - Vehicles labelled according to BMWM 2016 rules are used by CBMWTF operator to carry BMW from premises to any other treatment facility of BMW.
 - Both SPCB Nd Motor Vehicles Act, 1988 (59 of 1988) rules made for taking infectious waste from one place to other should be followed to carry by any vehicles.
 - CBMWTF added Global positioning system.
- According to CPCB guidelines Barcode label should be there on each bag.
- Use freshly prepared 1-2% Sodium hypochlorite For of BMWM article disinfection.
- 1% Sodium hypochlorite is 1:100 dilution (525-615 ppm of available chlorine)
- Sodium hypochlorite 10% or 4% for Hospital supply.

- pre-treatment devices done prior taking any of lab waste, patient's samples, blood bags, toxins, cultures (liquid/solid) to other place.

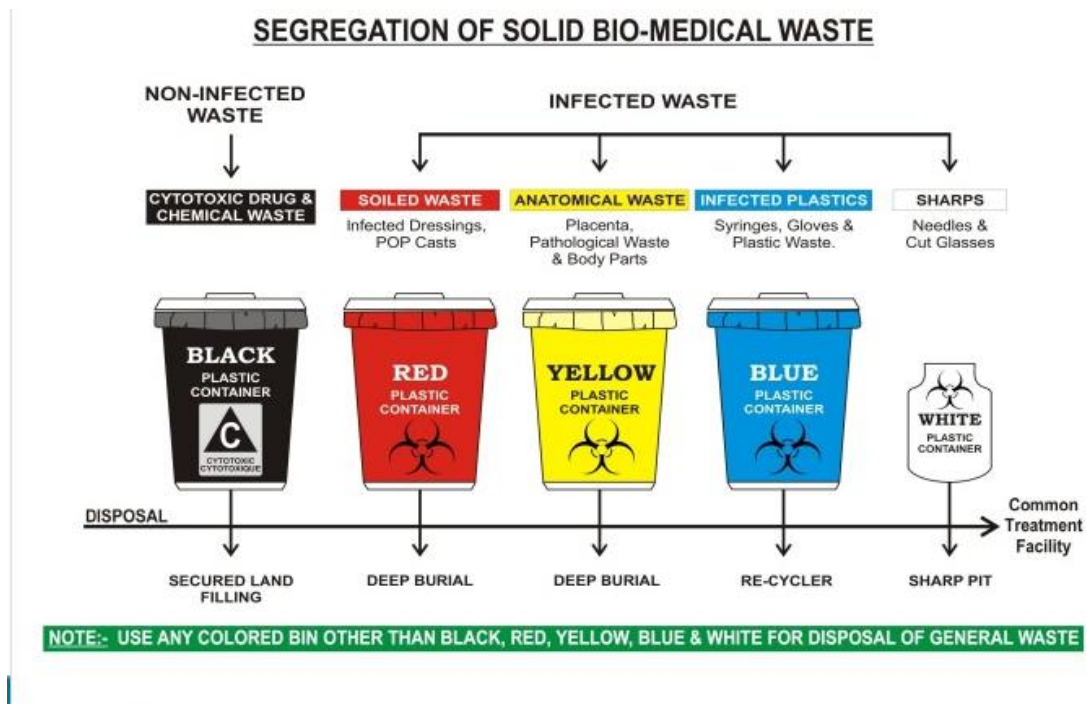


Figure 12

6. CONVENTIONAL MANAGEMENT OF HOSPITAL PHARMACY

- Identification of modal person for the pharmacy, he will ensure the preparedness and training of all pharmaceutical staff present in store.
- If needed volunteers from Rajasthan Pharmacist associations can be used.
- List out all the essential medication for each center.
- Identify multiple vendors in advance and Acquirement, obtaining, storage, stock of the drug store ought to be done.
- Periodic consumption (daily /weekly) of medicines should be estimated and planned.
- As per past consumption, Plan and estimate the future requirements
- Update records daily.

- Plan the record feedback with the help of procurement system.
- Staff screening to be done on daily basis
- Staff training on IPC practices /PPE usage should be done.

7. CONVENTIONAL MANAGEMENT OF HOUSEKEEPING

- List out the required manpower and plan their duties accordingly 24*7 in each center.
- Standard operating procedures for disinfection to be followed by everyone.
- Training should be done on Standard operating procedures.
- IPC practice training.
- Daily screening of staff must be done for infection control
- Estimate the daily consumption of disinfectants.
- Daily record update
- As per past consumption, Plan and estimate the future requirements
- Decide each role by Job card

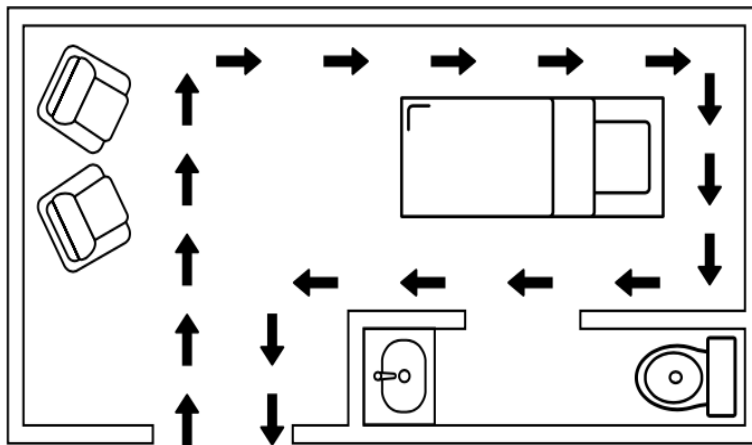


Figure 11 Courtesy: WHO

Figure 11 showing the cleaning strategy for environmental surfaces, moving in a systematic manner around the patient care area.

8. CONVENTIONAL LOGISTICS MANAGEMENT

- A centralized procurement system for each district will be for procurement, transport, warehousing, stock monitoring, tracking and reporting of essential equipment's.
- Make a record of all the fundamental equipment's, consumables and medications for each district region (Includes ventilator with inbuilt blowers, NIV with hood (NOT veil), screens, needle, respiratory pumps, intravenous pumps, blood gas machines)

9. CONVENTIONAL MANAGEMENT OF SECURITY SERVICES

- Identify and recruit the potential applicants from Ex military administrations
- List out all the significant security issues that can happen and give training on the best way to handle it.
- IPC practices and PPE usage training.
- Training towards traffic control
- Plan how to associate with the Governmental associations like police, emergency vehicle administrations, fire and so forth and communicate with them at whenever required.

DEAD BODY MANAGEMENT

The main cause of spread of the COVID infection is through the mode of droplets. But the risk is very unlikely to be increased while handling the dead body of the COVID patients by the HCW's or other members including the family ones. For the doctors or the paramedics the lungs of the dead patient can be infectious if handled during the autopsies.

1. Standard Precautions to be followed by health care workers while handling dead Bodies of COVID 19 patients.

Standard infection prevention control practices should be followed at all times. These include:

- Hand hygiene measures.
 - Use of PPE
 - Safe handling of sharp instruments.
 - Disinfect the bag, instruments and devices used for dead body used on the patient.
 - Disinfect the used linen
 - Clean and disinfect environmental surfaces.
2. Training in infection and prevention control practices
All staff identified to handle dead bodies in the isolation area, mortuary, ambulance and those workers in the crematorium / burial ground should be trained in the infection prevention control practices.
 3. Removal of the body from the isolation room or area
 - If any (tubes, drains, and catheter) are on the dead body must be removed in the isolation rooms.
 - Use to disinfectant agent 1% hypochlorite on the holes or wounds and dressed it with impermeable dressing material.
 - All the sharp devices should be handled very carefully and need to be disposed in the sharp containers.
 - Leakage of the dead body should be prevented by plugging the oral and nasal orifice.
 - Family members can be allowed to see the dead body in the isolation rooms with following the protocols
 - Body must be packed in a tight leak proof plastic body bag.
 - Provide the necessary counseling to the family members and respect their sentiments.
 4. Handling of dead body in the mortuary
 - Body must be stored in 4°C cold chamber
 - After removing the body doors, handles, floor should be cleaned with the disinfectant solution
 5. Embalming of the body should not be allowed and the autopsies should be avoided
 6. Transporting of dead body
 - The bag used for the dead body should be decontaminated from the outer side to reduce risk of staff
 - Vehicle used for dead body transportation for cremation/burial should be disinfected

with 1% sodium hypochlorite solution

PROTOCOL FOR PREGNANT WOMEN

➤ Guidelines for obstetric health care providers

- National protocol should be followed by health personnel towards investigation on suspected individuals.
- In the case of PUI in COVID-19, immediate notification should be given to state/local health departments and infection control personnel should be notified if positive pregnant or PUI women arrive.
- Record along with registry to be maintained of all pregnant women admitted with confirmed COVID-19. FOR FUTURE PURPOSE Maternal and neonatal records SHOULD BE SAVED
- To forestall transmission of the infection care should be taken regarding facility space and needs of staff.
- Social distancing and hand hygiene practice among pregnant women should be checked out timely.
- Safe Intrapartum services to be provided.
- Asymptomatic, single person as an assistant is allowed to stay with the pregnant women, ensuring of proper preventive measure is undertaken by the assistant and other family members.

➤ Specific obstetric management considerations

1. Medical history

For all pregnant women obtain the following information:

- A detailed travel history
 - History of exposure to confirmed or suspected COVID-19 cases
 - Symptoms of COVID-19
 - Coming from hot spot area
 - Immunocompromised conditions
- #### **2. Information to be shared with pregnant women**

Pregnant women should be informed as follows:

- In the event that you are infected with COVID-19 you are still well on the way to have no side effects or a gentle disease from which you will make a full recovery.
- In the event if you grow progressively serious indications or your recuperation is deferred, this might be an indication that you are building up an increasingly chest infection that requires upgraded care; you should contact your maternity care group right away.
- There might be a need to lessen the antenatal visits. Be that as it may, don't decrease your number of visits without concurring with your maternity care givers.

➤ Do's and Don'ts for Obstetric care providers in COVID-19 Pandemic

- Testing should be done, if women is suspected of COVID-19
- Routinely follow ups for obstetric care should be undertaken, if found suspect of COVID-19
- Elective procedures should be reduced to minimum like inducing of labour pain.
- Ultrasound instrument should be disinfected after every use.

➤ Antenatal care

- Routine visits of follow ups should be maintained.
- Women who are suspected, routinely visits can be put off till 7 days. Kick count of foetal to be maintained.

➤ Management of COVID-19 in Pregnancy

- If needed to visit health Centre, should go on own private transport Or call 108 for assistance if needed.
- Pregnant women who are self-isolated in light of the fact that somebody in their family unit has potential manifestations of COVID-19, arrangements ought to be delay for 14 days.
- Women whose routine check-ups are postponed for over 3 weeks should be informed (In rural areas ANMs/ASHAs can contact by telephone/ routine household visits with PPE).

- If women has recently tested negative for COVID-19, on the off chance that she presents with manifestations again, COVID-19 ought to be suspected.

For more details see figure 12

➤ Care in labour

- Oxygen immersion >94%, titrating oxygen treatment likewise.
- If the lady has indications of sepsis, examine and treat according to direction on sepsis in pregnancy, yet in addition consider COVID-19 as a reason for sepsis and research as indicated by direction.
- Regular observing of fetal electronically in labor is suggested
- Presently there is no proof to support one method of birth over another. Method of birth ought not to be impacted by the means of COVID-19, except if the lady's respiratory condition requests urgency of delivery.
- There is no proof that epidural or spinal analgesia of pain or sedation is contraindicated within the sight of coronaviruses. Epidural analgesia can be prescribed in labor to ladies with suspected/affirmed COVID-19 to limit the requirement for general sedation if urgency of delivery is required.
- When cesarean birth or other usable system is prompted, it ought to be done in the wake of wearing PPE.
 - An individualized choice ought to be made in regards to shortening the length of the second phase of labor with elective instrumental birth in a suggestive lady who is getting depleted or hypoxic.
 - Radiographic examinations ought to be proceeded just like non pregnant ladies. This incorporates chest X-beam and CT of the chest. Chest imaging, particularly CT chest, is basic for the assessment of the patient with COVID-19 and ought to be performed when demonstrated, and not postponed because of fetal concerns.
 - Fetal heart rate monitoring should be considered on a regular basis.

➤ Post natal management

It is NOT known whether the new-born are infected with COVID-19 or at risk of getting being infected .Transmission after birth by means of contact with irresistible respiratory discharges is a matter of concern. Facilities ought to consider isolating strictly (for example

separate rooms) for the mother who has affirmed COVID-19 or is a PUI, from her infant until the mother's transmission are brought to an end.

Temporary separation guideline:

- Brief discussion is required with mothers over temporary separation by health team.
- The choice to cease temporary separation of the mother from her child ought to be put forth on in a consultation with disease avoidance and infection and control teams, and public health authorities. Choice should consider disease seriousness, disease signs and manifestations, and result reports of laboratory testing for infection that causes COVID-19, SARS-CoV-2 of mother and child.
- Implementation measures should be undertaken to prevent worsening of Virus infection (If colocation) of the new born is unavoidable may be due to desire of mother, or due to limited space in health facility.
- Consider utilizing designing controls like physical hindrances (e.g., a curtain/shade between the mother and new-conceived) and keeping the new-conceived ≥ 6 feet from the infected mother.
- If no assistant is available to take care of the new-conceived a mother who has affirmed COVID-19 or is a PUI should put on a facemask and practice hand hygiene before making close contact with her baby.

➤ Breast feeding

- If possible, breast pump should be provided. Hand hygiene practice should be followed prior to breast feed. All parts that come in contact during breast feed should be altogether washed and pump should be disinfected after every use.
- In the event if mother wishes to take care new-born and wish to breast feed, facemask and practice hand cleanliness protocols should be followed before each taking.

➤ Hospital discharge

Same guidelines should be considered as for discharge of hospital patients to be followed for discharge of postpartum women.

➤ General Advice for Obstetric/Emergency Gynecology Theatre

- Elective obstetric methodology (for example cervical cerclage or cesarean) ought to be planned toward the end of the list
- Non-elective methodology ought to be done in a second obstetric theater
- The number of staff in the operating area ought to be kept to limited, and all must wear PPE kit.

Further details are given in figure for management of pregnant women with COVID.

NOTE:

- The service providers can assess the feasibility of isolation for the patient at home, especially if in slums/small households, else she could be admitted in hospital or quarantine facility.
- Also, self-quarantine for close contacts of the pregnant patient tested positive for 14 days.
- Whether she has attended ANC clinic in the last 14 days before testing, if so self-quarantine of the service providers.

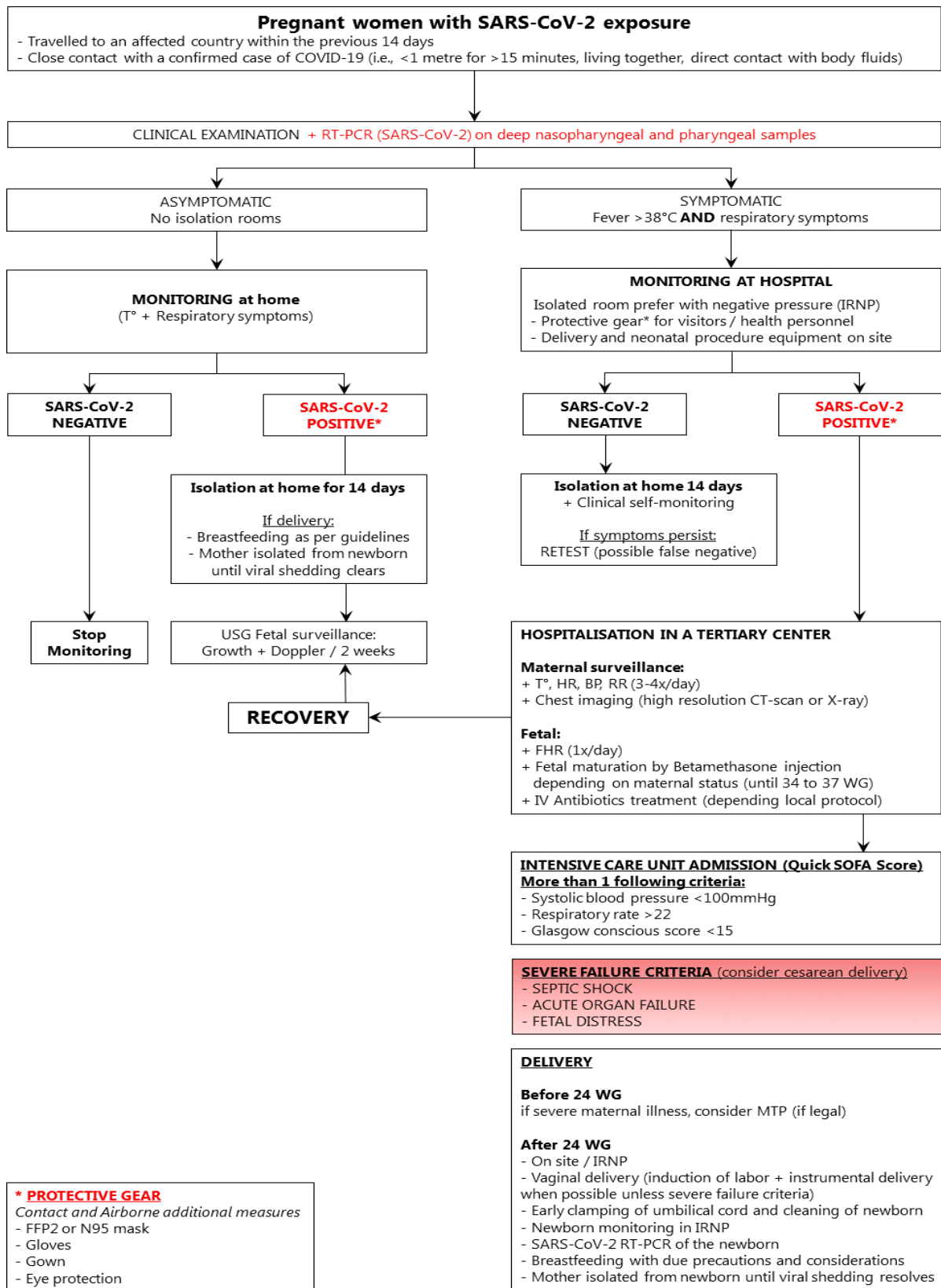


Figure 13 source ICMR

MANAGEMENT OF NON-COVID PATIENTS CURRENTLY ADMITTED IN THE HOSPITAL

- Handling is being done in same way for all the emergencies, as people know the address, keeping in mind the convenience is in attending them rather than referring to other Hospitals because time lost in travel will be injurious to the life of the patient.
- Functioning which was during normal time will remain same for all super specialty Hospitals. Emergency services should also be provided.
- Protocol should be followed for all the COVID positive patients like delivery etc. Even HIV positives deliveries have been conducted. Precautions may be taken in similar ways.
- OPD and IPD is shifted one level down in Hospitals, General Hospitals under Directorate of Health Services other than emergencies. If the HR in MCH is not involved in COVID care such Resource should be deployed to the General Hospitals to ensure proper health care is being provided to general patients if those HR are not involved in COVID care. The General Hospitals are linked to Taluka Hospitals, CHCs and FHC and PHC at the grass root level. The general population having ailment other than COVID infection are catered by health institutions.
- Districts not having medical Colleges, DH or GH and while converting District Hospital to COVID Hospital the specialties and super specialties will function in the General Hospital where the tertiary care facilities are provided. To run the Specialty and Super specialty service pooling and redeployment to General Hospital is done for Human Resources that are available in other hospital and are not involved in treating COVID.
- If require, relocation of doctors from different departments (like Orthopedics, ENT, OMFS etc.) can be done to government general hospitals on the basis of turns.
- Where facilities for dialysis are available nephrology and patients on dialysis can be relocated to major hospitals under government and private sector.
- For continuation of tertiary care to emergency patients Doctors may get shifted to the General Hospitals that aren't involved in COVID care.

DISCHARGE POLICY FOR COVID 19 CASES

First of all the samples of the suspect or probable case of COVID sent to the lab for confirmation till the time we get the results, the case is being kept in the isolation facility and symptomatic treatment should be given as per the protocols.

If the test results as negative then the clinician will decide whether to discharge the patient or to treat the patient in their provisional/confirmed diagnosis.

After the last contact with the confirmed coronavirus case the Case should be monitored up to the 14 days

Discharge of case should be done once the evidence based clearance of chest radiograph and the virus clearance seen in the sample after testing the samples twice negative in a period of 24 hours as shown in figure 14.

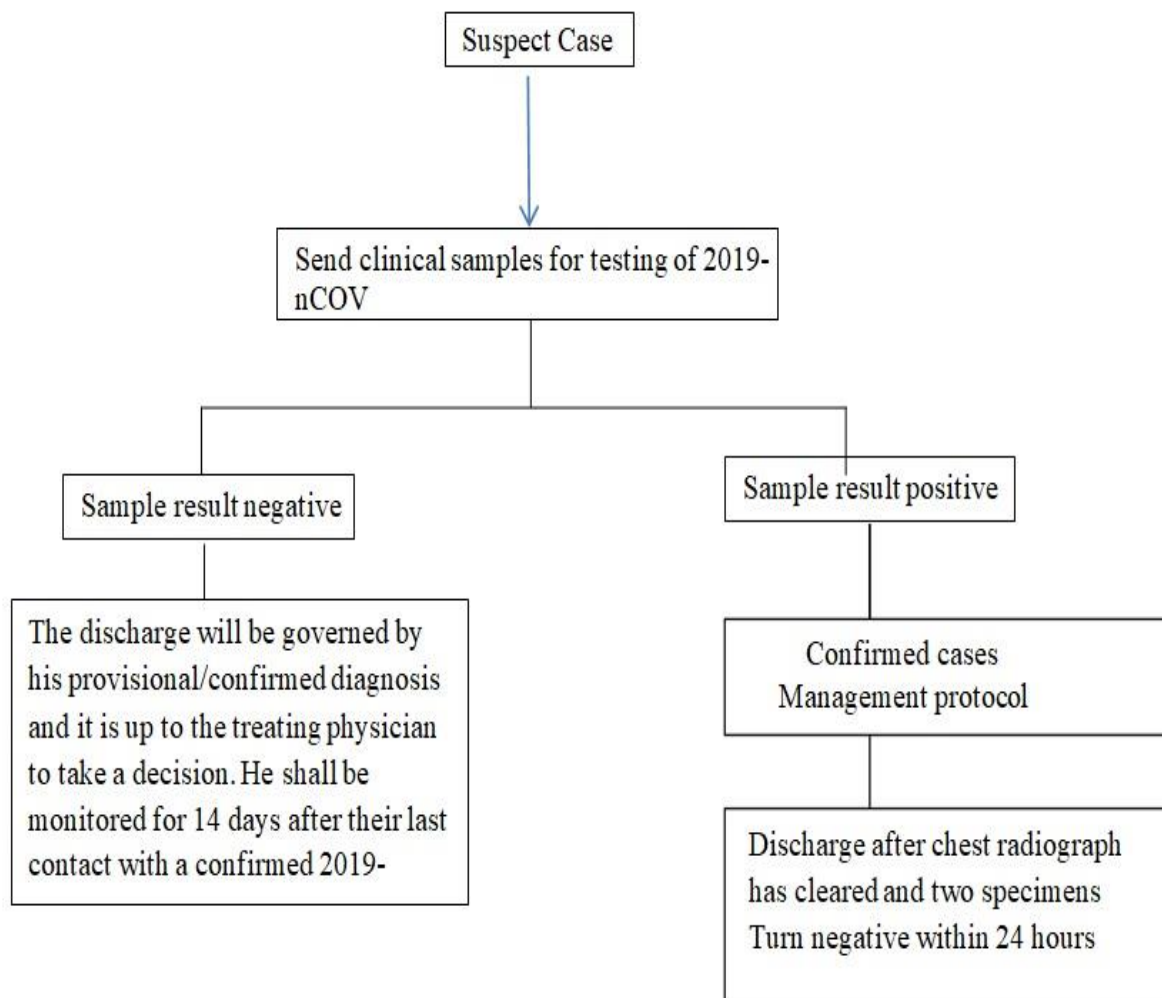


Figure 14

- List out all the concurrent emergencies that might take place in the hospitals during the COVID 19 pandemic
- Manage the work force to cover these emergencies accordingly
- This should be done with a proper planning and ensuring that there should not be mixing up of the COVID 19 emergencies with the concurrent emergencies
- Staff surveillance mechanism
- Distribute and plan HR to handle concurrent emergencies.
- Where ever the facilities are available MLC, trauma, RTA, and post mortem examinations can be conducted

INSURANCE SCHEME ANNOUNCED BY THE GOVERNMENT FOR HEALTH CARE WORKERS FIGHTING COVID 19

Govt. of India and the state govt. have announced the insurance packages for the HCW's for fighting the COVID 19 pandemic. An accidental death insurance cover of Rs 50 lakh for almost approx. 22.12 lakh HCW's is announced under the PRADHAN MANTRI GAREEB KALYAN scheme for those who die accidentally during COVID duty.

The premium of the insurance will be paid by the govt. and insurance is free for the related beneficiaries.

CONCLUSION

Covid 19 has been seen as a major health global emergency now. As it continues to spread in several countries, the epidemic has begun in India. The trajectory that the epidemic may take is not entirely clear; hence we need to do the best of our preparations to deal with the COVID 19 cases and Preparation for the worst should be put in place at war footing. We have provided insights for the preparedness of the health-care settings for the state. HCWs that are at the frontlines in the fight against infectious disease are the most vulnerable. This document deals with various ways of protecting them and ensuring that their lives and welfare are not compromised in the battle against this dreadful disease

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PART 2

ONLINE COURSE REPORT

ON

E-health

COURSE DESCRIPTION

The MOOC, "eHealth: instead of just an electronic record, it is multidisciplinary in nature, and aims to equip the world wide audience of health clinicians, students, managers, administrators, and researchers to reflect on the overall impact of eHealth on the integration of care. It explores the breadth of technology application, current and emerging trends, and showcases both local and international eHealth practice and research.

The entire eHealth Course consists of 5 modules and takes about 5 weeks to complete. Completion certificates are issued based on participation in all 5 modules. Completing the health practice assignment in Module 5 entitles you to advanced standing in some of the eHealth courses run by the Faculty of Health Sciences, University of Sydney.

Length: Self-paced 5-week course

Study time commitment: 3 hours per week

Assessable components: Assignment 1 in Module 2 (40%) and Assignment 2 in Module 5 (60%).

OBJECTIVES OF THE COURSE

- To learn the fundamentals of eHealth and where it is heading
- To understand what kind of health data we are currently collecting and how it will transform healthcare in the future
- To know how new technologies are helping health consumers participate in their own healthcare
- To understand how eHealth can improve the coordination and efficiency of healthcare and what the barriers might be.

COURSE CONTENT

This course contains 5 modules each module is having several lessons which are as follows:

Module 1 - What is eHealth?

This module makes us able to

Lesson 1: An Introduction to eHealth

Lesson 2: What the experts say

Lesson 3: Introductory learning activities

Module 2 - Health in our Hands

This module makes us able to

- Lesson 1 - Health in your hands
- Lesson 2 - Collecting your own data
- Lesson 3 - Apps, social media and health online
- Lesson 4 - Designing and evaluating eHealth solutions

Module 3 - Data and the "Quantified Self"

This module makes us able to

- Lesson 1 - Introduction
- Lesson 2 - Electronic health records
- Lesson 3 - Predictive and precision medicine
- Lesson 4 - Patient reported data Lesson 5 - Privacy and security
- Lesson 6 - Using data to improve performance

Module 4 – “Interacting with Health Professionals using New Technologies”

This module makes us able to

- Lesson 1: Improving access to healthcare
- Lesson 2: Innovations in healthcare
- Lesson 3: Supporting health professionals

Module 5 - eHealth in Professional Practice

This module makes us able to

- Lesson 1: Course review
- Lesson 2: eHealth case study examples
- Lesson 3: Assignment guide and peer review

LEARNING METHODOLOGY

The methodology used for each module in this course is:

Documentary videos for topics Readings

Practice exercises Discussion forums E-Paper reviews Assignments

Graded Peer Review Assignment

KEY LEARNING FROM THE COURSE

“This course focuses on different facets of e-health and a great introduction to how digital technology, especially apps, data, and communication technology, is being used to support health and healthcare management. This course includes an introduction to a framework to rate apps more objectively (MARS) of particular value. It also gave me multiple examples from clinicians on how digital technology is being deployed to improve healthcare delivery and quality.”

The framework OF eHealth course helped me to understand how various healthcare policies and health departments work in different countries like Australia and UK. It provided me an idea to work more on how ehealth be made feasible in implementation. This Course is having a comprehensive content for the current trends in technology.

Module 1 key learning

E health: e-health is an emerging field in the intersection of medical informatics, public health and business, referring to health services and information delivered or enhanced through the Internet and related technologies.

- Comparison of definitions of eHealth from both health consumers and professionals.
- Recognized an eHealth model which illustrates how key eHealth domains intersect to impact on health care
- Develop an insight into the fundamental principles of eHealth
- Appraise your own awareness of eHealth in current practice
- Interpret the current and future challenges of eHealth for both health consumers and health practitioners

Module 2 key learning's

- Understand the potential of mobile technology to support the shift from “healthcare” to “health”.
- To know about “wellness” and “healthcare” mobile apps currently in use.
- Consider strategies for including mobile health apps in public health professional practice.
- Be aware of issues around the design and evidence for effective health apps.

Module 3 key learnings

- It gives an idea about current trends in electronic data in healthcare
- Understand importance of privacy and security of data.
- Using data to improve our performance.

Module 4 key learnings

- Describe a range of innovative eHealth interactions between consumers and healthcare professional
- Evaluate the advantages of technology-based eHealth services in improving access and communication in healthcare.
- Appreciate the differences between online and face to face health service interactions
- Consider new models of healthcare supported by telehealth, social media and personalized apps
- Appreciate how eHealth can be used to support professional development.

Module 5 key learnings:

- Review a variety of case-based examples of eHealth in professional practice.
- Provided an evidenced based rationale for adopting an eHealth strategy suitable for your own professional practice.
- Description of anticipation the strategy improving healthcare services for both yourself and healthcare consumers.
- Used eHealth principles from previous modules to review and comment constructively on those eHealth strategies suggested by other course participants.