

**All India Institute of Medical Sciences
Rishikesh, India**



Infection Prevention & Control Policy

For

COVID-19

Version 2

INFECTION PREVENTION & CONTROL POLICY FOR COVID-19

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1. GENERAL INSTRUCTIONS

- i. **Mode of Transmission:** Close contact and droplet transmission mainly. Less common route is airborne transmission.
- ii. **Preventive and mitigation measures are key** in both healthcare and community settings. Most effective preventive measures in the community include:
 - **Follow standard precautions**
 - **Avoid touching FACE** (your eyes, nose and mouth) unnecessarily.
- iii. Additional precautions:
 - Cohort HCWs to exclusively care for cases to reduce the risk of spreading transmission.
 - Perform procedures in an adequately ventilated room; i.e. at least natural ventilation with at least 160 l/s/patient air flow (or negative pressure rooms) with at least 12 air changes per hour (ACH) and controlled direction of air flow when using mechanical ventilation
 - Limit the number of persons present in the room to the absolute minimum required for the patient's care and support.
 - Bundling of activity to be performed by same health care professional so as to avoid multiple encounters to isolation room etc.
 - Use either single use disposable equipment 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** (e.g. ethyl alcohol 70%);
 - Maintain a record of all persons entering the patient's room including all staff and visitors.
- iv. Administrative controls:
 - Ensuring the availability of resources for infection prevention and control measures, such as
 - ✓ appropriate infrastructure
 - ✓ clear infection prevention and control policies
 - ✓ facilitated access to laboratory testing
 - ✓ appropriate triage and placement of patients
 - ✓ Adequate staff-to-patient ratios & training of staff.
 - Environmental and engineering controls to reduce the spread of pathogens :
 - **Adequate Distancing:** Place patient beds at least 1m apart
 - Availability of well-ventilated isolation rooms for patients with suspected or confirmed COVID-19 disease
- v. **Specific additional precautions to be taken by all health care professionals (HCP) while working in hospital other than above mentioned:**



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- Hands without rings
- No thread/ Watch etc. on wrist while working in COVID-19 area
- Trim nails
- Hair tied or controlled by hair band
- No beard except with religious belief
- No mobile use while working in COVID-19 area (exceptional use allowed)
- Do not carry pen to and back from COVID-19 area
- Covered shoe (preferably washable)
- Not to hang mask on neck or keep in pocket etc.
- Not to touch front of mask while working until hand hygiene performed
- Avoid hand shakes

For further information please see Do and don't for health care professionals available at:
<http://aiimsrishikesh.edu.in/aiims/>



2. STANDARD PRECAUTIONS

Components (7):

- Hand Hygiene
- Respiratory hygiene/cough etiquette
- Personal Protective Equipment's (PPEs)
- Sharp Handling (Safe use and disposal)
- Spill Management
- Disinfection
 - Routine Environmental Cleaning
 - Reprocessing of reusable medical equipment's & Instruments
 - Appropriate handling of linen
- Biomedical Waste Handling and management

Hand Hygiene:

Has to be performed by ALL healthcare workers at ALL times regardless of suspected or confirmed status of the patient as per 5 moments described by WHO.

During the delivery of healthcare, avoid unnecessary touching of surfaces in close proximity to the patient.

What method of hand hygiene is recommended for healthcare personnel in response to COVID-2019?

- Performing **hand hygiene** as per WHO 5 moments and as per different indications with
 - alcohol-based hand rub if your hands are not visibly dirty or
 - with soap and water if hands are dirty
- Detailed procedure available at Annexure-1 & **include wrist in addition to method described**. See Video for details in <https://www.youtube.com/watch?v=L3v8oE1CT-o>

Recommended composition of alcohol-based hand rub (ABHR) to be used:

Unformulated ethanol in concentrations greater than 60% or isopropanol greater than 70%

Indications (5 Moments by WHO) for Hand Hygiene:

- Before touching a patient
- Before aseptic procedure
- After exposure to body fluids
- After touching a patient
- After touching patient's surroundings

	Alcohol Based Hand Rub	Hand Wash with soap & water	Surgical Hand Scrub
Duration	20-30 seconds	40-60 seconds	2-5 minutes
Amount (approx.)	3-5 ml (Palm full)	3-5 ml (Palm full)	15 ml



Respiratory hygiene /cough etiquette:

- Cover nose and mouth during coughing or sneezing with flexed elbow or tissue and then immediately disposing of the tissue
- Perform hand hygiene after contact with respiratory secretions.

Airway precautions are required for:

- During aerosol generating procedures
- Use alternative methods like avoid nebulising the patients wherever possible (MDI with Spacer is as good as nebulisation) and use Metered Dose Inhaler with Spacer.

3. RATIONALE USE OF PPE (Annexure II)

PPE used most commonly:

- Gloves
- Gowns (± apron)
- Masks (Surgical mask, Respirator N95, PAPR)
- Protective Eyewear (± face shield)
- Boots/ shoe cover
- Cap/ head cover

• **Components**

Components	Use depending upon indication listed & likely mode of transmission of disease
Aprons, Gowns <ul style="list-style-type: none"> • Disposable plastic aprons • Sterile, water impervious gowns 	<ul style="list-style-type: none"> • Risk of splashing with blood and/ or body fluid • Prolonged contact with patient with Multidrug Resistant organisms expected. • For use in surgical and aseptic procedures
Gloves	<ul style="list-style-type: none"> • Before a sterile procedure • When anticipating contact with blood or another body fluid, regardless of the existence of sterile conditions and including contact with non-intact skin and mucous membrane • Contact with a patient (and his/her immediate surroundings) during contact precautions. • See Annexure 2 • Number of pair of gloves to be used-- minimum one; - may use more pairs of gloves in following situation depending upon availability: <ul style="list-style-type: none"> - Procedures involving use of sharps - Procedures where likely high chance of tearing gloves like cleaning use heavy duty) etc. -In isolation area preferably wear double gloves



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<p>Mask</p> <ul style="list-style-type: none"> • Surgical Face mask • Respirator or Filtered face piece (N95 Mask) 	<p>Provide protection against droplet (>5µm size) (indicated to prevent contamination of mucous membranes of the mouth, nose and eyes during procedures likely to generate droplets or splashes of blood and/or body fluid)</p> <ul style="list-style-type: none"> • Provide protection against droplet nuclei (<5µm size) • Indicated during Aerosol Generating Procedures (mentioned below)
<p>Protective Eye Wear (Goggles & face Shield)</p>	<ul style="list-style-type: none"> • Indicated in procedures which are likely to generate droplets or aerosols of blood and/ or body fluid likely to be splashed, sprayed or splattered into face • Flexible frame of goggles should provide good seal with the skin of the face, covering the eyes and the surrounding areas and even accommodating Prescription Glasses.
<p>Caps/ Head cover</p>	<ul style="list-style-type: none"> • Cover head and neck while providing clinical care for patients. • Hair and hair extensions should fit inside the head cover.
<p>Foot Cover/ Separate Foot wear</p>	<ul style="list-style-type: none"> • In restricted area of hospital • Shoe covers of impermeable fabric to be used over shoes to facilitate personal protection and decontamination.

For procedure and sequence of PPE please see annexure-II and

Video link: <https://www.youtube.com/watch?v=DLuLzQ9JDoQ&feature=youtu.be>

Transmission Based Precautions to be taken in case of suspected COVID 19 suspects/ confirmed cases:

Person-to-person transmission of COVID-19 virus has been proven to occur via

- **Droplet and contact transmissions**
- There are few evidence of aerosol transmission of COVID-19, In view of this aerosol transmission precautions need to be taken in closed environments.

Droplet Transmission: COVID-19 is predominantly spread by Droplet Transmission. Respiratory droplets are produced when an infected person coughs or sneezes. These droplets can infect the persons (by seeding on their mouths, noses, or eyes) who are within 1-meter distance

Preventable by: Surgical mask (if within 1 meter of infected case) and Hand Hygiene

Contact Transmission: Respiratory droplets (consisting of various bacteria, fungi and viruses) settle on the floor, various surfaces and inanimate objects. Healthcare personnel, patient or attendants after touching these surfaces and objects with their hands transmit these pathogens to other areas and on their face, nose, mouth and eyes.

Preventable by: Hand Hygiene with Soap and Water or Alcohol Based Hand Rub [ABHR] (+ gown, gloves, regular cleaning & disinfection)



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Aerosol Transmission: COVID-19 transmission by Airborne Transmission from person-to-person over long distances has been suggested in limited number of studies, however precaution must be taken while performing all Aerosol Generating Procedures (AGP), which include:

- Tracheal intubation
- Open suctioning
- Non-invasive positive pressure ventilation (BiPAP and CPAP)
- Tracheostomy and its care
- CPR: Cardiopulmonary Resuscitation
- Manual ventilation before intubation
- Bronchoscopy
- Airway suction
- Chest physiotherapy
- Nebulizer treatment
- Pulmonary function testing
- Sputum induction or
- Collection of lower respiratory specimens (Bronchial & Tracheal aspirates)
- Autopsy, clinical, surgical, and laboratory procedures that may aerosolize pathogens, such as operating bone saws, blenders, aspiration equipment and performing centrifugation in centrifuge without safety hood, shaking/vortexing sample

- **Preventable By: At least N95 Respirators (with preferably full PPE set) to be used in addition to droplet and contact precautions**
- **Hand Hygiene is the SINGLE MOST EFFECTIVE and SCIENTIFICALLY PROVEN method for Infection Prevention and Control in All Health Care Settings and at Home**
- **Refer to Annexure II for Donning and Doffing of PPE**
- **NOTE:** For deciding type of precaution in Non COVID area of hospital refer to Annexure V



Personal protective equipment (PPE) to be used in the context of COVID-19 disease, according to the setting, personnel and type of activity in addition to following general instructions as mentioned in page no 3-4.

Levels	Area	Health care professionals	PPE Required
	From Gate no 3 till outside of COVID 19 screening area	Security Guard	Triple layer Surgical Mask
	Temperature recording station COVID 19	Security Guard	Mask (N95) Gloves
Level 1 Protection	Screening Area/Help desk/Registration counter for COVID suspects	Health Care Professionals	Head Cover Mask (N95) Own scrub suit ±Surgical Gown ±Shoe Cover (No aerosol generating procedure allowed here)
		Patients & their attendants	Triple layer Surgical Mask
Level 2 Protection	COVID-19 AREA (TRAUMA CENTRE): Emergency Triage Area Cohort Area Isolation Room	Health Care Professionals	Complete PPE: Head Cover Mask (N95) Gown (Preferably disposable, leak proof) Eye goggles (±Face shield) Shoe Cover scrub suit
		Patients	Triple layer Surgical Mask Body Cover Surgical Cap
Level 3 Protection	COVID -19 area: Isolation room with patient on ventilator/ Operation theatre/ Virology laboratory processing diagnostic COVID-19 disease specific sample	Health Care Professionals	Complete PPE as mentioned above (N95 mask to be preferably replaced by PAPR- if available) (Powered, air-purifying respirator)
		Patients	Triple layer Surgical Mask Body Cover Surgical Cap



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Risk as per profile of patients	Non- COVID treatment areas of hospital	Health Care Professionals	Decide on basis of annexure V. Not to venture into COVID-19 restricted area.
	OPD other than Screening area	No aerosol generating procedures	N 95 mask Gloves
	All areas	Visitors/ Caretaker	Triple layer medical mask, Should practice hand hygiene
	Administrative Block, Medical college Block except Virology Laboratory & other laboratory	All administrative staff, faculty, residents	No PPE (Unless risk assessment as mentioned in Annexure V)

Other Supportive/ Ancillary Services

Setting	Activity	Risk	Recommended PPE	Remarks
Other Laboratory testing non virology COVID 19 patients ample	Processing samples without aerosol generating procedures	Moderate risk	Triple layer surgical mask and gloves	other PPE based on risk assessment as mentioned in Annexure V
	Aerosol generating procedure	High risk	N95 and gloves Full PPE (if processing respiratory sample)	---do---
Mortuary	Dead body handling of COVID 19 patient	Moderate Risk	N 95 mask Gloves	No aerosol generating procedures should be allowed. No embalming.
	While performing autopsy of COVID-19 patient	High Risk	Full complement of PPE	No post-mortem unless until specified.
CSSD/Laundry	Handling linen of COVID-19 patients	Moderate risk	N-95 mask Gloves	Other PPE depending upon risk assessment as mentioned in Annexure V
Other supportive services	Administrative Financial Engineering Security staff in administrative and non-patient care areas	No risk	No PPE	No possibility of exposure to COVID patients. They should not venture into COVID-19 treatment areas.

*Hand hygiene using alcohol based hand rub preferred for contact transmission precaution in view of false sense of security with gloves and touching various area with gloved hands



4. CLEANING AND DISINFECTION OF COVID-19 AREAS

- Appropriate personal protective equipment's (PPE) for the cleaning staff for all environmental cleaning procedures as indicated in section 3- PPE. Housekeeping staff will require additional wearing of heavy duty gloves.

Frequency and sequence of cleaning of surfaces:

- 1. Floor: Every 4 hour, first mopping by phenolic solution followed by 0.5 % Sodium hypochlorite solution**
- 2. High touch surfaces: Every 4 hour**, disinfection of high touch surfaces like (doorknobs, telephone, call bells, bedrails, stair rails, light switches, wall areas around the toilet)
- 3. Low-touch surfaces:** For Low-touch surfaces (walls, mirrors, etc.) mopping should be done **once a week**.

Cleaning agents and disinfectants

1. Sodium Hypochlorite used as a disinfectant for cleaning and disinfection in concentrations of 0.05%, 0.1%, 0.5% and 1% as required as mentioned in subsequent section (For details see tables and video link mentioned subsequently in this section, Annexure III & IV)
2. Alcoholic preparation containing at least 70% alcohol can be used to wipe down surfaces where the use of bleach is not suitable, e.g. external surfaces of equipment like stethoscopes, thermometers and ventilators.
3. Phenolic germicidal detergent solution for mopping

Before cleaning:

- Gather materials required for cleaning before entering the room.
- Hand Hygiene should be done before entering the room.
- Where possible, seal off areas, before carrying out cleaning and disinfection
- Place a cautionary 'Wet Floor' sign at the entrance of the room.
- Follow the manufacturer's instructions for proper dilution and contact time for cleaning and disinfecting solutions.

During cleaning:

- Sweep with damp mop to remove surface dust.
- Progress from the least soiled areas (low-touch) to the most soiled areas (high-touch) and from high surfaces to low surfaces.
- Remove gross dust/ waste (visible to naked eye) prior to cleaning and disinfection.
- Minimize turbulence to prevent the dispersion of dust that may contain microorganisms.
- Never shake mops.
- Wash the mop under the running water before doing wet mopping.

Triple bucket mopping method for floor cleaning should be used in all areas:

1. Use 3 bucket system for mopping
 - a. 1st bucket: keep soap/ and detergent water
 - b. 2nd Bucket: clean water
 - c. 3rd Bucket: disinfectants (phenol, hypochlorite)
2. Apart from 3 buckets,



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4th bucket: To Prepare working solution of 0.5% Sodium hypochlorite

5th bucket: Filled with 0.5% Sodium hypochlorite: Used to dip used mops after cleaning for 30 minutes (to be replace every days with new one)

- Do not double dip mop as dipping it multiple times may lead to recontamination of mop.
- An area of 120 square feet to be mopped before re-dipping the mop in the solution.
- Cleaning solution and mop to be changed after cleaning **an area of 240 square feet**.
- The used mop should be dipped in 0.5% sodium hypochlorite solution after washing for 30 minutes and then dried before re-using.

**CLEANING OF COVID-19 SCREENING, TRIAGE, COHORT, ISOLATION AREAS,
Virology laboratory (in summary) (Details mentioned in annexure VI)**

AREAS	DISINFECTANT	CONTACT TIME	FREQUENCY
Floor Cleaning	0.5% Sodium Hypochlorite	≥1 minute*	Every 4 hourly & spot cleaning as required.
Mops used for cleaning, Re-utility gloves	0.5% Sodium Hypochlorite	Soaked for 30 minutes	After every 240 square feet
High Touch areas:			
➤ Metallic Surfaces	70% isopropyl alcohol (v/v) based hand- rub	Till it dries	Every 4 hourly
➤ Non-metallic Surfaces	0.1% Sodium Hypochlorite	≥1 minute*	Every 4 hourly
Low Touch surfaces:			
➤ Ceilings	0.1 % Sodium Hypochlorite	≥1 minute*	Once a week
➤ Side walls	-If greasy 1 st use detergent/ phenolic solution than hypochlorite		
Toilet			
➤ Floor	0.5% Sodium Hypochlorite	≥1 minute*	After every use
➤ Toilet pots	1% Sodium Hypochlorite		
➤ Bed Pan	1% Sodium Hypochlorite		
BMW Container/ Bin- Inner and outer surface	1% Sodium Hypochlorite	≥1 minute*	After each discard of waste
BMW waste bags	0.5-1% sodium Hypochlorite	≥1 minute*	Before discarding (On outer surface)
Ventilator(exterior), Infusion pump, USG machine, Pulse oximeter, Telephone, computer, keyboard, printer, Bed side monitor, ECG probes, etc.	70% isopropyl alcohol (v/v) based hand- rub	Till it dries	
Stethoscope	Alcohol-based rub/ Spirit swab	Till it dries	In between each patient



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SURFACES	DISINFECTANT	PROCEDURE/ CONTACT TIME
Thermometer : • Preferably one thermometer for each patient.	Detergent and water Alcohol rub	<ul style="list-style-type: none"> • Should be stored dry in individual holder. • Clean with detergent and tepid water and wipe with alcohol rub in between patient use. • Store in individual holder inverted.
BP cuffs and covers	Detergent Hot water	Cuffs should be wiped with alcohol based disinfectant. Regular laundering recommended for the cover.
Injection and dressing trolley	Detergent and water Disinfectant (70% alcohol)	<ul style="list-style-type: none"> • To be cleaned daily with detergent and water. • After each use should be wiped with alcohol (70%) rub.
Used linen /Slightly soiled reusable linen (eg surgical scrubs)	0.1 % Sodium Hypochlorite	30 minute
Liquid waste	1% Sodium Hypochlorite	30 minute
Terminal Cleaning (COVID-19 confirmed case) - Linen ,Mattress cover	1% Sodium Hypochlorite	30 minute
Dead Body of COVID-19	Patient's body in leak-proof plastic body bag External surface of bag by 1% Sodium Hypochlorite All the orifices are to be plugged with cotton plug dipped in 1% sodium hypochlorite- # See dead body management page no 19-22 & Annexure VII	≥ 1 minute*

*Contact time of 10 minutes is preferred however ≥ 1 minute is must



5. TERMINAL CLEANING

After room or area occupied by COVID 19 patient is discharged /shifted/ LAMA the area is to be kept closed for 30 minutes to get all air exhausted (& replaced with fresh air).

Terminal cleaning to be done by housekeeping staff need to enter area after 30 minutes and all inanimate objects must be cleaned as mentioned above.

- **Surface cleaning/ Floor cleaning by 1% Sodium hypochlorite working solution by applying** to surfaces using a damp cloth.
- **Metallic surfaces** to be cleaned using **70 % alcohol based hand rub**.
- Linen, Mattresses, beddings contaminated with blood or body fluid for final discard is to be treated with 1-2% sodium hypochlorite for 30 min chemical disinfection.
- All linen material reusable to be soaked in 0.05% Sodium hypochlorite for at least 30 min
- Place a cautionary ‘Wet Floor’ sign at the entrance of the room.
- Prepare fresh hospital-grade disinfectant solution according to manufacturer’s instructions.
- Clean hands and put on PPE.
- Collect and remove waste and all soiled linen.
- Clean hands and change gloves.
- Clean and disinfect lights and ceiling-mounted tracks.
- Clean and disinfect all door handles, push plates, light switches and controls.
- Clean and disinfect telephones and computer keyboards.
- Spot-check walls for cleanliness.
- Clean and disinfect all exterior surfaces of machines and equipment (e.g., anaesthesia carts), allowing adequate drying time for the disinfectant before storage.
- Clean and disinfect all furniture including wheels/ casters.
- Clean and disinfect exterior of cabinets and doors, especially around handles.
- Clean and disinfect all surfaces, scrub sinks and surrounding walls.
- Mop floor, making sure the patient’s bed is moved and the floor is mopped underneath; move all furniture to the centre of the room and continue cleaning the floor; apply a sufficient amount of disinfectant/ detergent to ensure that the floor remains wet for 10 minutes (Contact time of 10 minutes is preferred however ≥ 1 minute is must); use a fresh mop/ mop head and fresh solution for each room.
- Replace all furniture and equipment to its proper location.
- Discard the waste and clean waste bin as described in section 8 (BMW management).
- Clean and store cleaning equipment, remove gloves and clean hands.
- Mattresses / pillows after spraying with 1% hypochlorite should be allowed to get dry (both sides) in bright sunlight for up to 3 hrs each.
- Fogging to be done as per Institute policy and protocol for fogging Annexure VIII



6. LAUNDRY SERVICES

Soiled linen can be a source of large amounts of microbial contamination which may cause infections in hospital patients and personnel. (Flow chart in Annexure-IX)

Principles and Key Steps in Processing Linen

- i. Housekeeping and laundry personnel should wear gloves and other PPE and follow standard precautions as indicated when collecting, handling, transporting, sorting, and washing soiled linen.
- ii. Consider all cloth items (for example, surgical drapes, gowns, wrappers) as infectious.
- iii. Carry soiled linen in covered containers or leak-proof plastic bags to prevent spills and splashes, and confine the soiled linen to designated areas (interim storage area) until transported to the laundry.
- iv. Any solid waste in linen should be carefully removed and kept in covered bucket to dispose of in the toilet or latrine
- v. Carefully sort all linen in the laundry area before washing.
- vi. Disposable bed sheets to be discarded in yellow bin as per BMW rules.
 - Washing by machine with warm water (70-90°C) with laundry detergent is recommended.
 - **Machine Washing:**
 - Step 1: Wash heavily soiled linen separately from non- soiled linen.
 - Step 2: Adjust the temperature and time cycle of the machine according to manufacturer's instructions and the type of soap or other washing product being used.
 - Step 3: When the wash cycle is complete, check the linen for cleanliness.
Rewash if it is dirty or stained. (Heavily soiled linen may require two wash cycles.)
 - Step 4: Finally dry fully in sunlight
 - **If machine washing is not possible**, linen soaked in **0.1% hypochlorite for approximately 30 minutes** in a large drum, using a stick to stir, avoiding splashing. Hand over the linen thereafter to outsourced laundry facility.
 - All grossly soiled reusable linen is to be discarded in yellow bin. (Preferably linen single use disposable type is to be used.
 - At outsourced laundry facility, routine process of laundering final to be done.
- vii. If the towels are single use, they should be treated as infectious waste and if they are re-usable they should be treated as soiled linens for reprocessing. The area should then be cleaned and disinfected (with 0.5% hypochlorite)

7. SPILL MANAGEMENT

In area having COVID-19 suspects or confirmed cases/ laboratory, all spill to be treated as blood or body fluid spill of >10cm.

Spillage	Blood and/or other body fluids e.g. CSF, peritoneal stool, urine, sputum with or without visible blood present etc
Procedure to be followed: Wear PPE	<ul style="list-style-type: none"> • Place paper towel/other absorbable material on spillage. • Apply 1 % Sodium hypochlorite to the spillage, and/or the disposable paper towels saturated with the hypochlorite solution. • Leave solution on for 30 minutes' contact time. • Wipe up excess fluid and dispose of paper towels into appropriate waste bag. • Clean the area with detergent and water using disposable cloth and dry thoroughly. • Remove PPE and dispose with cloths used into appropriate waste bag. • Wash basin/bucket in hot soapy water, dry and store. • After completing procedure carry out hand hygiene.



8. BIOMEDICAL WASTE MANAGEMENT (ANNEXURE VI)

Guidelines for Handling, Treatment, and Disposal of Waste Generated during Treatment/Diagnosis/ Quarantine of COVID-19 Patients

Biomedical waste **segregation, collection and pre-treatment** will be done at **AIIMS Rishikesh** and final disposal of waste will be done by **Municipal Corporation (MPCC), Roorkee.**

a. COVID-19 ISOLATION WARDS/ TRIAGE AREA:

- **Safe management of health-care waste:** Keep separate colour coded covered, foot operated bins/bags/containers in wards and **maintain proper segregation of waste as per BMW Rules, 2016, BMW (Amendment) rules 2018 and CPCB guidelines for implementation of BMW Management Rules.** (Segregation shown in Annexure VI)
- As precaution double layered bags (using 2 bags) should be used for collection of waste from COVID -19 isolation wards to ensure that there is no leaking of wastes.
- External surface of waste bags used for COVID -19 area should **be cleaned with 0.5% hypochlorite solution** before handling over to waste collection team.
- Use a dedicated collection bin labelled as “COVID-19” for waste generated in Isolation wards/triage area for COVID -19 and keep separately in temporary storage room prior to handling over to authorized staff of MPCC, Roorkee.
- Maintain separate record of waste generated from COVID-19 isolation wards
- The **inner and outer surface of containers/ bins /trolleys** used for storage of COVID-19 waste should be disinfected with **1% sodium hypochlorite solution for a contact period of 1 minute.**
- Dedicated sanitation workers will be required for BMW and general solid waste collection so that waste be collected timely to temporary waste storage area.
- **Discarded items:** Linen, Mattresses, beddings contaminated with blood or body fluids: **1-2% sodium hypochlorite for 30 min** chemical disinfection followed by shredding and customised to fit in **non-chlorinated yellow bag** for incineration.
- **Liquid waste:** Disinfected by **1-2% sodium hypochlorite solution for a contact period of 30 min** and directed to **effluent treatment system**
- General waste not having contamination should be disposed as solid waste as per SWM Rules, 2016
- Clean utility gloves or heavy duty, reusable plastic aprons with soap and water followed by soaking in **0.5% sodium hypochlorite** (for 30 minutes) after each use. Single-use gloves (nitrile or latex or nitrile) or gowns should be discarded after each use and hand hygiene should be performed after removal of PPE.



b. Sample Collection Centres & Laboratories:

Guidelines given in section a. for isolation wards/ triage should be applied suitably in case of test centres and laboratory also. All infectious waste generated in laboratory is to be microwaved/autoclaved first and then given to BMW collection team for disposal team through MPCC Roorkee.

c. Quarantine Camps/ Home care for COVID-19 suspected patients:

Less quantity of biomedical waste is expected from quarantine centres / home stay. However, following steps to be taken to ensure safe handling and disposal of waste:

- Treat the routine waste generated from Quarantine centres or camps as general solid waste and should be disposed of as per BMW Guidelines.
- **Biomedical waste** from Quarantine centres or camps should be collected separately in **YELLOW coloured bags and bins.**
- As per WHO, any Biomedical Waste produced during the **home care** of patients with suspected or confirmed 2019-nCoV infection should be **disposed of as infectious waste** and collected separately in **YELLOW bags** and the same shall be handed over to authorized waste collectors engaged by MPCC, Roorkee.
- Designated place to be earmarked outside the building for collection of yellow and black bags. It should be collected at least twice daily by biomedical waste management vehicle/any other local established practice.

9. QUARANTINE

Quarantine is the separation and restriction of movement or activities of persons who are not ill but who are believed to have been exposed to infection, for the purpose of preventing transmission of diseases.

Quarantine can be applied to

- An individual or to a group of persons who are exposed at a large public gathering or to persons believed exposed on a conveyance during international travel.
- A wider population- or geographic-level basis

The recommended duration of quarantine for Covid-19 based on available information is up to 14 days from the time of exposure.

(Note: Duration of home quarantine period is for 14 days from contact with a confirmed case or earlier if a suspected case (of whom the index person is a contact) turns out negative on laboratory testing.)

The purpose of quarantine during the current outbreak is to reduce transmission by

- ❖ Separating contacts of COVID-19 patients from community
- ❖ Monitoring contacts for development of sign and symptoms of COVID-19, and
- ❖ Segregation of COVID-19 suspects, as early as possible from among other quarantined persons



Instructions for suspected case home quarantine

- Stay in well ventilated room separated from other people & pets
- Should preferably have attached/separate toilet
- Restrict his/her movement within the house.
- In shared spaces, maintain a distance of at least 1-2 meters and wear a medical mask when in proximity with other people
- Take special care to stay away from elderly people, pregnant women, children and persons with co-morbidities
- Do **NOT** attend any social/religious/public gathering e.g. wedding, condolences, etc.
- Hand hygiene to be followed
- Avoid sharing household items (e.g. dishes, drinking glasses, cups, eating utensils, towels, bedding etc.)
- If symptoms appear (cough/fever/difficulty in breathing), he/she should immediately inform the nearest health centre.

Instructions for the family members of person being home quarantined

- Household members should stay in a different room and be separated from the person as much as possible
- Only an assigned family member should be tasked with taking care of the person and should help with groceries, prescriptions and other personal needs
- Avoid shaking the soiled linen or direct contact with skin
- Pets should be cared for by household members and should be kept separate from the person
- Use disposable gloves when cleaning the surfaces or handling soiled linen
- ***Stay at least 1-2 metre away from those who are coughing***
- Wash hands before and after eating, drinking and using the washroom with soap and water
- All non-essential visitors should be prohibited
- In case the person being quarantined becomes symptomatic, all his close contacts will be home quarantined for 14 days and followed up for an additional 14 days or till the report of such case turns out negative on lab testing.

Environmental sanitation

- Immediately remove and wash clothes and bedding that have blood, stool or other body fluids on them
- Clean and disinfect frequently touched surfaces in the quarantined person's room (e.g. bed frames, tables etc.) daily with ***Sodium Hypochlorite solution (1%)***
- Clean and disinfect toilet surfaces daily with regular household bleach solution/phenolic disinfectants
- Wash laundry used by the person separately using common household detergent and dry thoroughly using the warmest temperatures recommended on the clothing label
- Place all used disposable gloves, masks and other contaminated waste in a lined container (yellow bin) before disposing of them with other household waste and wash hands with soap and water/alcohol-based hand rub
- Use dedicated carts / trolleys / vehicles for transport of biomedical waste. Ensure sanitization of vehicles with 1% hypochlorite after each trip.
- Waste collectors arriving at quarantine centre or at home care shall disinfect bin used for yellow bag with 1% hypochlorite solution.



10. DEAD BODY MANAGEMENT (ANNEXURE VII)

Standard Precautions to be followed by health care workers while handling dead bodies of COVID.

- Disinfect bag housing dead body; instruments and devices used on the patient as mentioned in cleaning section
- Disinfect linen. Clean and disinfect environmental surfaces as mentioned in cleaning section
- See Annexure VI for detailed flow.

Removal of the body from COVID-19 Ward

- The health worker attending to the dead body should perform hand hygiene, ensure proper use of PPE (water resistant apron, goggles, N95 mask, gloves).
- All tubes, drains and catheters on the dead body should be removed.
- Any puncture holes or wounds (resulting from removal of catheter, drains, tubes, or otherwise) should be disinfected with 1% hypochlorite and dressed with impermeable material.
- Apply caution while handling sharps such as intravenous catheters and other sharp devices. They should be disposed into a sharps container.
- **Seal oral, nasal orifices, puncture or therapeutic wounds of the dead body with cotton plug dipped in 1 % sodium hypochlorite solution to prevent leakage of body fluids.**
- If the family of the patient wishes to view the body at the time of removal from the isolation room or area, they may be allowed to do so with the application of Standard Precautions.
- Wrap the dead body in cloth sheet soaked in 1% sodium hypochlorite solution.
- Place the wrapped dead body in leak-proof plastic body bag or a double layered plastic wrapping. The exterior of the body bag can be decontaminated with 1% hypochlorite. The body bag can be wrapped with a mortuary sheet or sheet provided by the family members.
- The body will be either handed over to the relatives or taken to mortuary.
- All used/ soiled linen should be handled with standard precautions, put in bio- hazard bag and the outer surface of the bag disinfected with hypochlorite solution.
- Used equipment should be autoclaved or decontaminated with disinfectant solutions in accordance with established infection prevention control practices or mentioned in cleaning and disinfection section of this document.



INFECTION PREVENTION & CONTROL POLICY FOR COVID-19

- All medical waste must be handled and disposed of in accordance with Bio- medical waste management rules.
- The health staff who handled the body will remove personal protective equipment and will perform hand hygiene.
- Provide counselling to the family members and respect their sentiments.
- Embalming of dead body should not be allowed.
- **Autopsies should be avoided**

Transportation of Dead Body

- The body, secured in a body bag, exterior of which is decontaminated (0.5-1% Sodium hypochlorite) poses no additional risk to the staff transporting the dead body.
- The personnel handling the body may follow standard precautions (surgical mask, gloves).
- The vehicle, after the transfer of the body to cremation/ burial staff, will be decontaminated with 1% Sodium Hypochlorite.

At the crematorium/ Burial Ground

- The Crematorium/ burial Ground staff should be sensitized that COVID 19 does not pose additional risk.
- The staff will practice standard precautions of hand hygiene, use of masks and gloves.
- Viewing of the dead body by unzipping the face end of the body bag (by the staff using standard precautions) may be allowed, for the relatives to see the body for one last time.
- Religious rituals such as reading from religious scripts, sprinkling holy water and any other last rites that does not require touching of the body can be allowed.
- Bathing, kissing, hugging, etc. of the dead body should not be allowed.
- The funeral/ burial staff and family members should perform hand hygiene after cremation/ burial.
- The ash does not pose any risk and can be collected to perform the last rites.
- Large gathering at the crematorium/ burial ground should be avoided as a social distancing measure as it is possible that close family contacts may be symptomatic and/ or shedding the virus.



11. Ambulance and its disinfection

When COVID-19 is suspected in a patient needing emergency transport, prehospital care providers and healthcare facilities should be notified in advance that they may be caring for, transporting, or receiving a patient who may have COVID-19 infection and the following precautions should be taken by ambulance personnel accompanying the patient:

On arrival of ambulance:

- **Decontaminate hands (alcohol gel/rub)**
- **Wear Personal Protective Equipment (PPE):** A patient requiring Aerosol Generating Precaution: level II Protection (Wear PPE as mentioned earlier)
- **Inform the hospital of the admission/transfer of a potentially infectious person**

Before leaving the house/healthcare facility

- Request patient to wear a surgical mask (if tolerated) and advise on Respiratory Hygiene and Cough Etiquette
- A patient with suspected or confirmed **2019 nCoV- Acute Respiratory Disease** should not travel with other patients **in ambulance**
- Remove gloves, decontaminate hands and put on new gloves before touching the patient and before a clean or aseptic procedure, if required. Wearing gloves does not replace hand hygiene.
- Use single use or single patient use medical equipment where possible
- Use disposable linen if available

Arrival to the referral hospital

- Before the patient leaves the ambulance ensure arrangements are in place for receipt of the patient
- Transfer patient to the care of hospital staff
- After transfer of patient remove PPE
- Perform hand hygiene

Before ambulance is used again

- **Cleaning and disinfecting** (Wear PPE as outlined above should be worn while cleaning)

Surfaces (stretcher, chair, door handles etc.) should be cleaned with a freshly prepared 1% hypochlorite solution or equivalent

a. Disinfections for surfaces frequently touched by hands

- In the ambulance, door handles, straps, hand rails, seats, chairs and all the surfaces frequently touched by hands should be cleaned with Lysol or 1% Hypochlorite Solution periodically after every trip.
- 5% Lysol, (1 litre of Lysol in 9 litres of water) or concentrations can be prepared according to manufacturer's instructions.



b. Disinfections for floors/ambulances

- 1% Hypochlorite solution should be used for cleaning the floors

Sprayers:

- o Different kinds of sprayers including power sprayers and water wash pumps can be used for spraying, and cleaning can be done by wet mopping.
- o Metal sprayers should not be used for spraying hypochlorite solution.

In the ambulance, if the driver’s chamber is not separate, driver should also use PPE.

- Drivers, if they provide direct patient care (e.g., moving patients onto stretchers), should wear all recommended PPE.
 - o After completing patient care and before entering an isolated driver’s compartment, the driver should remove and dispose of PPE and perform hand hygiene to avoid soiling the compartment.
 - o If the transport vehicle does **not** have an isolated driver’s compartment, the driver should remove the face shield or goggles, gown and gloves and perform hand hygiene. A respirator or facemask should continue to be used during transport.

- All personnel should avoid touching their face while working.

Setting	Activity	Risk	Recommended PPE	Remarks
Ambulance Transfer to designated hospital	Transporting patients not on any assisted ventilation	Moderate risk	N-95 mask Gloves	
	Management of SARI patient while transporting	High risk	Full complement of PPE	When aerosol generating procedures are anticipated
	Driving the ambulance	Low risk	Triple layer medical mask Gloves	Driver helps in shifting patients to the emergency



12. Biosafety guidelines for handling and processing specimens from COVID -19 patients

- The clinician may decide diagnostic samples for specific diagnosis of CoVID-19 as per latest guidelines issued by Govt of India or competent authority and decide accordingly.
- Laboratory processing such samples should follow standard guidelines for collection transport and processing as recommended by Govt of India or authorities.
- After collection of diagnostic sample from patient suspected to be suffering from CoVID-19 disease, next patient to area need to be called, preferably after 30 min of last sample collection. The sample for virology testing to be packed in triple layer.
- **For samples other than diagnostic virology samples** of CoVID-19 suspected/ confirmed cases following precautions should be considered over and above than other required (As per procedure and policy) for processing of such samples in concerned laboratory:
 - Only trained health care worker should perform specimen collection in presence of a clinician.
 - Consider **all specimens as potentially hazardous / infectious**.
 - All the health care professionals who handle and collect specimens associated with COVID-19 infections should follow level 2 protections as mentioned previously.
 - Clinician should restrict samples to minimum essential which will be helpful for patient management.
 - Sample collection to be done as per respective laboratory protocol.
 - After sample collection, samples to be labelled with alcohol resistant markers/pen. Requisition copy should be preferentially mailed and respective laboratory informed regarding sample prior to collection.

Sample packing and transport:

Package, label, and ship high-risk specimens as a **Category A** infectious substance affecting humans

- i. Leak proof primary receptacle **should be individually wrapped or separated**. Sample to be collected in leak proof container. After labelling, disinfect the outer surface of container.
- ii. All such samples collected from one area and to be transported to one laboratory should be collected in another leak proof secondary receptacle e.g. sample collected from different patient for haematology placed inside one zip lock plastic pouch after labelling and decontamination of outer side of primary sample container.
- iii. This zip lock secondary container to be kept outside COVID area in a third hard container.
- iv. One ward boy will be designated to transport samples at a specific time from each area for transport of samples.



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- Level II PPE for all healthcare workers handling the specimen in all laboratory.
- Restrict visitor's and maintain a log-book (including date and time) of all staff working in the laboratory
- Those samples/procedures which can generate potentially aerosols and droplets **enhanced biosafety precautions** are warranted based on situational needs (e.g. high testing volumes) **Biosafety Cabinet level II A2 or better is to be used.** All such procedure is to be done in area maintaining 15-20 Air changes per hour (HVAC system recirculating air should not be used in such areas). **Some of the Aerosol generating procedure are mentioned below:**
 - centrifugation, pipetting, vortexing, mixing, shaking, sonicating,
 - removing caps
 - decanting liquids,
 - preparing smears, flaming slides,
 - Aliquoting and/or diluting specimens
 - Inoculating bacterial or mycological culture media
 - Performing diagnostic tests that do not involve propagation of viral agents in vitro or in vivo
 - Nucleic acid extraction procedures involving potentially infected specimens
 - Preparation and chemical- or heat-fixing of smears for microscopic analysis
 - loading syringes, manipulating needles, syringes or sharps, aspirating and transferring blood and body fluids,
 - spilling specimens and cleaning up spills
- Other non -diagnostic test should be performed with wearing PPE of Level 2 protection
- When handling and processing specimens, including blood for serological testing good laboratory practices and procedures of concerned laboratory should be followed.
- Specimens like sputum for culture, BAL, stool routine examination, urine routine examination, cytology etc. better to be avoided if not affecting treatment protocol.
- Frozen section biopsy to be avoided
- Sample send for histopathology using formalin should be changed after 24 hours and replaced with fresh formalin solution or as required for processing.
- Sterile body fluid requiring culture to be send in automated blood culture bottle system.
- All biochemistry samples to be sent to POCT Lab.
- Follow biomedical waste management guidelines for sample disposal.
- All cleaning protocol mentioned earlier for isolation or triage area should be followed in laboratory
- **Personal handling samples should process using good laboratory practices (GLP) and additional measure suggested above will supplement but are not replacement of GLP.**



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HICC/AIIMS/RIS/2

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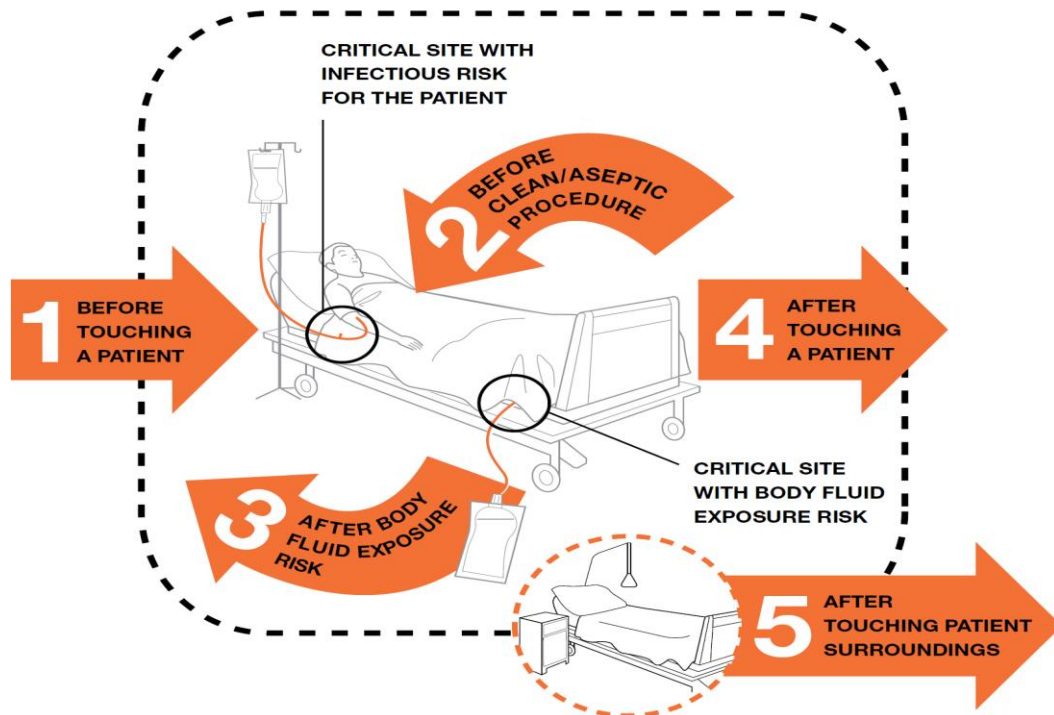


ANNEXURE I

HAND HYGIENE

WHEN?

YOUR 5 MOMENTS
FOR HAND HYGIENE*



*NOTE: Hand hygiene must be performed in all indications described regardless of whether gloves are used or not.



How to Handwash?

WASH HANDS WHEN VISIBLY SOILED! OTHERWISE, USE HANDRUB

Duration of the entire procedure: 40-60 seconds



0 Wet hands with water;



1 Apply enough soap to cover all hand surfaces;



2 Rub hands palm to palm;



3 Right palm over left dorsum with interlaced fingers and vice versa;



4 Palm to palm with fingers interlaced;



5 Backs of fingers to opposing palms with fingers interlocked;



6 Rotational rubbing of left thumb clasped in right palm and vice versa;



7 Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;



8 Rinse hands with water;



9 Dry hands thoroughly with a single use towel;



10 Use towel to turn off faucet;



11 Your hands are now safe.



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May 2009



How to Handrub?

RUB HANDS FOR HAND HYGIENE! WASH HANDS WHEN VISIBLY SOILED

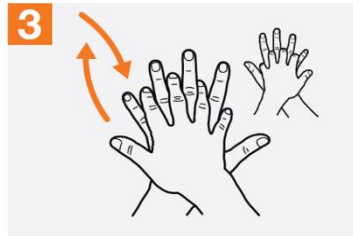
🕒 Duration of the entire procedure: 20-30 seconds



Apply a palmful of the product in a cupped hand, covering all surfaces;



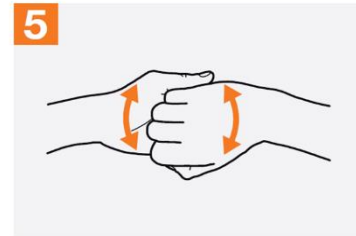
Rub hands palm to palm;



Right palm over left dorsum with interlaced fingers and vice versa;



Palm to palm with fingers interlaced;



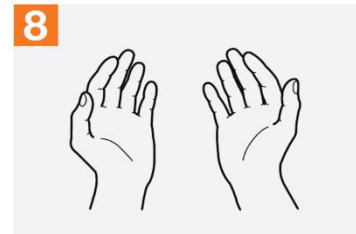
Backs of fingers to opposing palms with fingers interlocked;



Rotational rubbing of left thumb clasped in right palm and vice versa;



Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;



Once dry, your hands are safe.



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Surgical Handrubbing Technique

- Handwash with soap and water on arrival to OR, after having donned theatre clothing (cap/hat/bonnet and mask).
- Use an alcohol-based handrub (ABHR) product for surgical hand preparation, by carefully following the technique illustrated in Images 1 to 17, before every surgical procedure.
- If any residual talc or biological fluids are present when gloves are removed following the operation, handwash with soap and water.



1 Put approximately 5ml (3 doses) of ABHR in the palm of your left hand, using the elbow of your other arm to operate the dispenser.



2 Dip the fingertips of your right hand in the handrub to decontaminate under the nails (5 seconds).



Images 3-7: Smear the handrub on the right forearm up to the elbow. Ensure that the whole skin area is covered by using circular movements around the forearm until the handrub has fully evaporated (10-15 seconds).



Images 8-10: Now repeat steps 1-7 for the left hand and forearm.

11 Put approximately 5ml (3 doses) of ABHR in the palm of your left hand as illustrated, to rub both hands at the same time up to the wrists, following all steps in images 12-17 (20-30 seconds).

12 Cover the whole surface of the hands up to the wrist with ABHR, rubbing palm against palm with a rotating movement.



13 Rub the back of the left hand, including the wrist, moving the right palm back and forth, and vice-versa.



14 Rub palm against palm back and forth with fingers interlinked.



15 Rub the back of the fingers by holding them in the palm of the other hand with a sideways back and forth movement.



16 Rub the thumb of the left hand by rotating it in the clasped palm of the right hand and vice-versa.



17 When the hands are dry, sterile surgical clothing and gloves can be donned.

Repeat this sequence (average 60 sec) the number of times that adds up to the total duration recommended by the ABHR manufacturer's instructions. This could be two or even three times.



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ADVICE ON THE USAGE OF PPE IN THE CONTEXT OF COVID-19

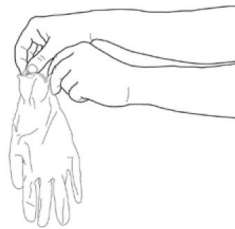
Technique for donning and removing non-sterile examination gloves

When the hand hygiene indication occurs before a contact requiring glove use, perform hand hygiene by rubbing with an alcohol-based handrub or by washing with soap and water.

I. HOW TO DON GLOVES:



1. Take out a glove from its original box



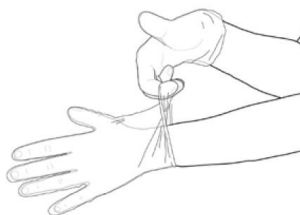
2. Touch only a restricted surface of the glove corresponding to the wrist (at the top edge of the cuff)



3. Don the first glove



4. Take the second glove with the bare hand and touch only a restricted surface of glove corresponding to the wrist

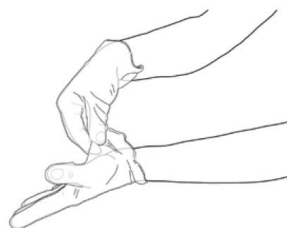


5. To avoid touching the skin of the forearm with the gloved hand, turn the external surface of the glove to be donned on the folded fingers of the gloved hand, thus permitting to glove the second hand

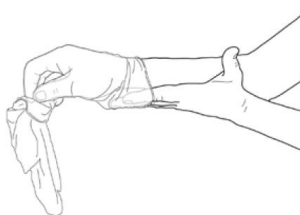


6. Once gloved, hands should not touch anything else that is not defined by indications and conditions for glove use

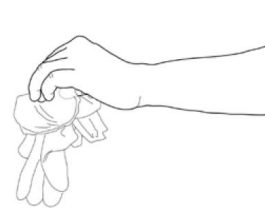
II. HOW TO REMOVE GLOVES:



1. Pinch one glove at the wrist level to remove it, without touching the skin of the forearm, and peel away from the hand, thus allowing the glove to turn inside out



2. Hold the removed glove in the gloved hand and slide the fingers of the ungloved hand inside between the glove and the wrist. Remove the second glove by rolling it down the hand and fold into the first glove



3. Discard the removed gloves

4. Then, perform hand hygiene by rubbing with an alcohol-based handrub or by washing with soap and water



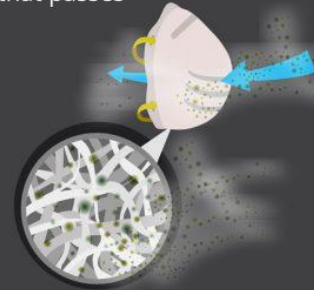
Three Key Factors Required for a Respirator to be Effective



- ① The respirator must be put on correctly and worn during the exposure.
- ② The respirator must fit snugly against the user's face to ensure that there are no gaps between the user's skin and respirator seal.



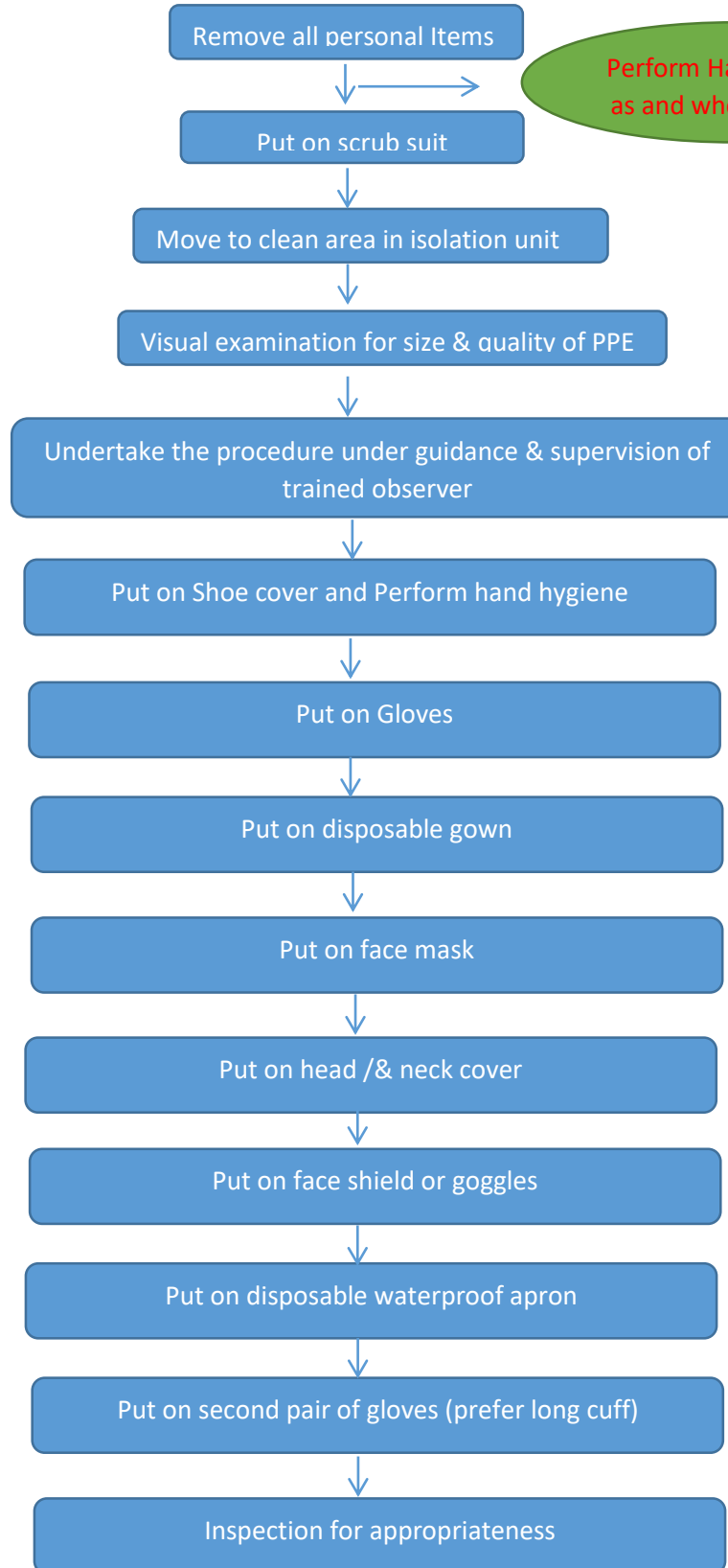
- ③ The respirator filter must capture more than 95% of the particles from the air that passes through it.



*If your respirator has a metal bar or a molded nose cushion, it should rest over the nose and not the chin area.



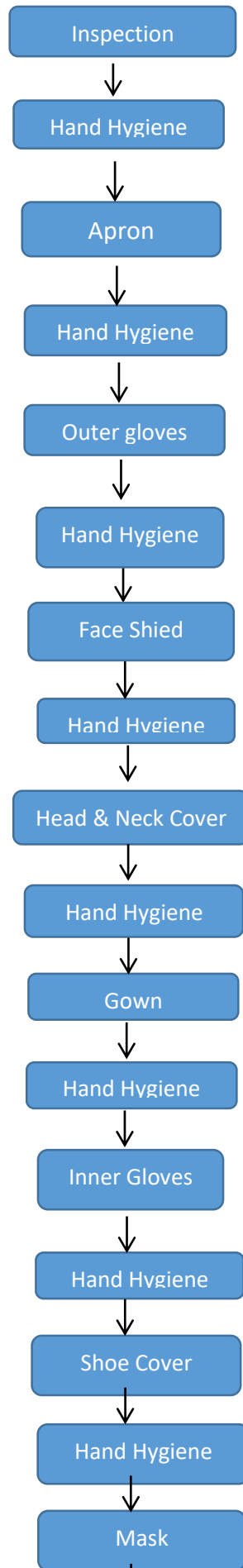
Steps of Donning as per WHO guideline



Perform Hand hygiene
as and when required



Steps of Doffing as per WHO guideline

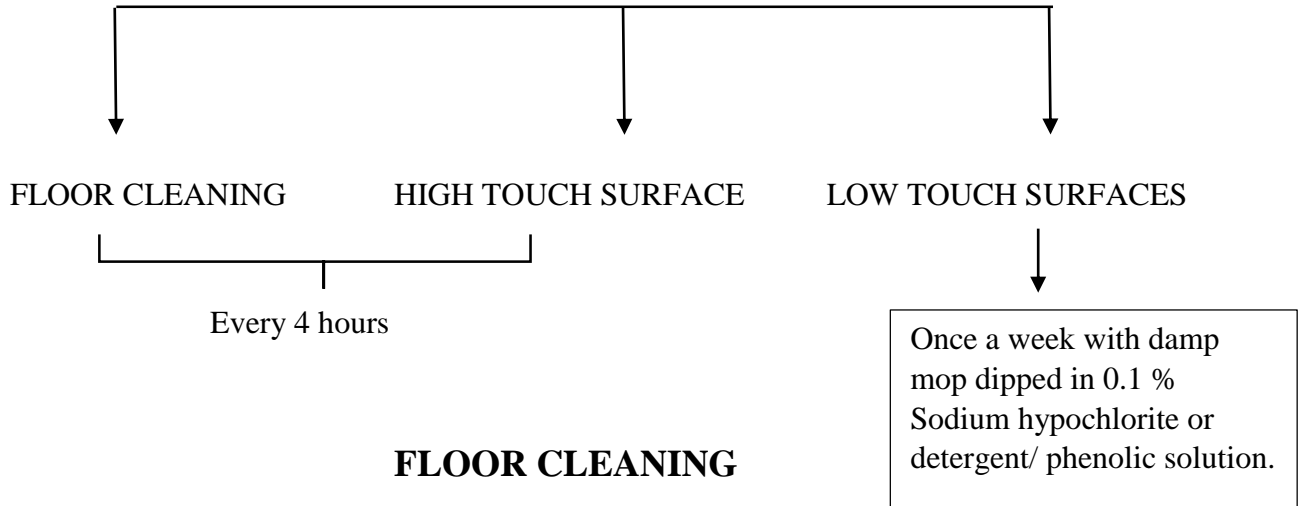




ANNEXURE III

CLEANING IN COVID-19 AREAS

FREQUENCY OF CLEANING



FLOOR CLEANING



- Perform hand hygiene
- Wear appropriate PPE before cleaning

First by Phenolic disinfectant prepared as per manufacturer's instructions



Let dry and keep a WET SIGN-BOARD



Second mopping by **0.5% Sodium Hypochlorite** solution

Contact period for minimum 1 minute



To prepare **10 litre 0.5 % Sodium hypochlorite** working solution, add
1 litre 5% Sodium hypochlorite + 9 litre water.

(To be kept in covered buckets)

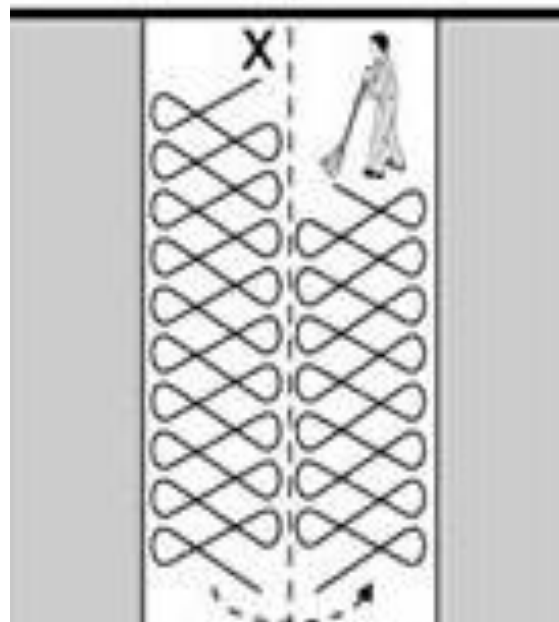
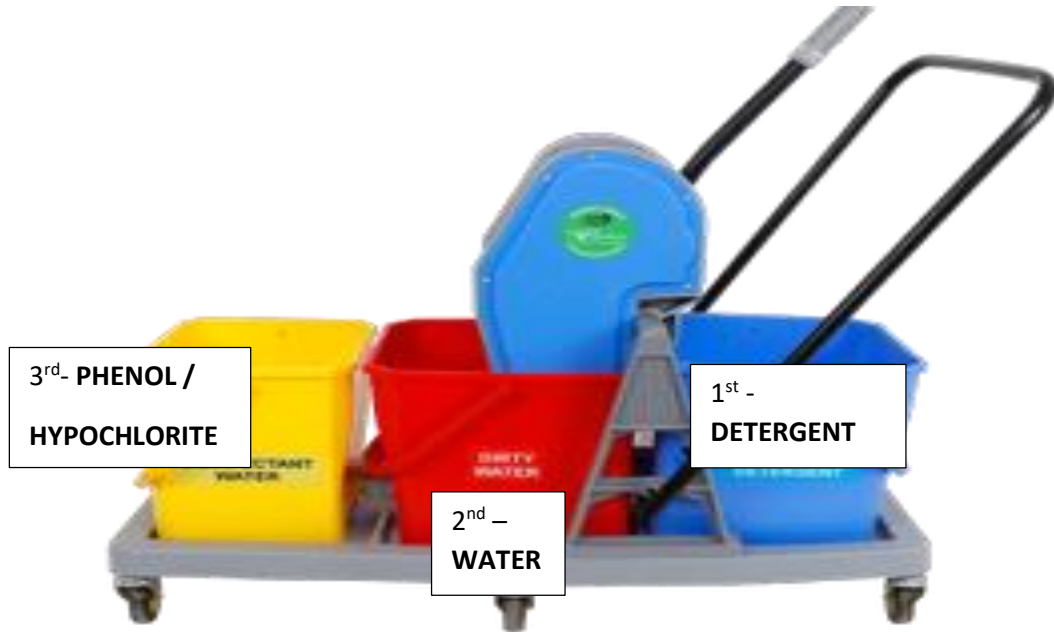


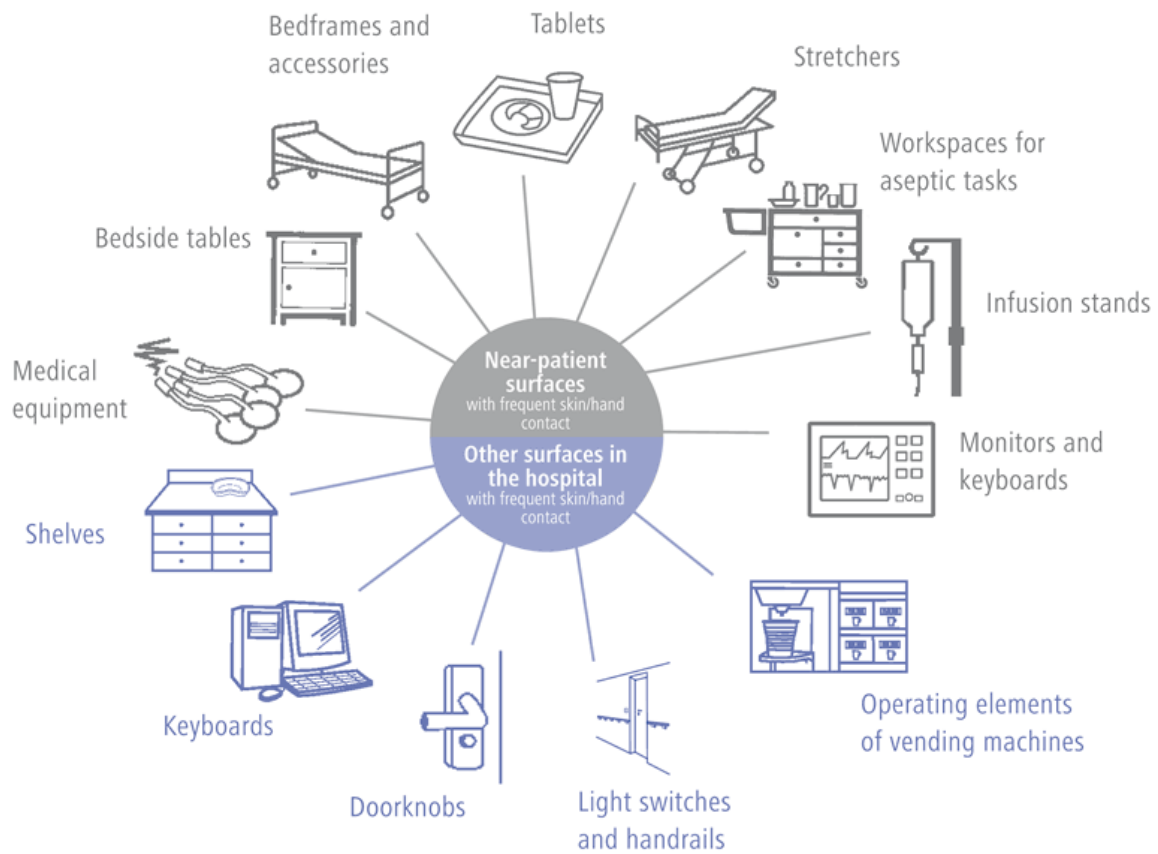
Figure of eight stroke technique for mopping



HIGH TOUCH SURFACE

Metallic surfaces – 70% alcohol based rub

Non-metallic surfaces - 0.1% sodium hypochlorite





ANNEXURE IV

DISINFECTANT	COMPOSITION	PREPARATION	Where to USE	CONTACT PERIOD*
SODIUM HYPOCHLORITE				
0.1 % (1,000 ppm available chlorine)	1:50 (v/v) bleach solution	To prepare 1: 50 bleach solution add one volume of 5% Sodium Hypochlorite to 50 volumes of clean water e.g. To prepare 5 litre of 0.1% from 5% initial strength use: ➤ 100ml: 5% Sodium Hypochlorite ➤ 4.9 litres of water	<ul style="list-style-type: none"> ➤ Mopping of floor in Hospital area, and medical college (Except: Isolation/Quarantine/Triage area declared COVID-19 Restricted) ➤ High touch areas: Various inanimate objects where hypochlorite may be used (Not to use on metallic surface) 	≥1 minute*
0.5 % (5000 ppm available chlorine)	1:10 (v/v) bleach solution	To prepare 1:10 bleach solution add one volume of 5% Sodium Hypochlorite to nine volumes of clean water. e.g. To prepare 10 litre of 0.5% from 5% initial strength use: ➤ One litre: 5% Sodium Hypochlorite ➤ 9 litres of water	General disinfection: -Surface cleaning in Isolation/Quarantine area/Triage	≥1 minute*
			- Mops used for cleaning in various areas - Reusable heavy utility gloves (HK Staff) - Bed pan	To be soaked for ≥30 minute
1 % (>10,000 ppm available chlorine)	1:5 (v/v) bleach solution	To prepare 1: 5 bleach solution add one volume of 5% Sodium Hypochlorite to 5 volumes of clean water. e.g. To prepare 1 litre of 1% from 5% initial strength use: ➤ 200 ml: 5% Sodium Hypochlorite ➤ 800 ml of water	Terminal cleaning of Confirmed COVID-19 :Organic material : Body fluid/ Blood spills, Discarded items: Linen, Mattresses Liquid/Chemical waste	≥30 minute
			BMW Container/bin Dead body: Surface mopping	≥1 minute*
0.1 % (1000 ppm available chlorine.)	1:50 (v/v) bleach solution	To prepare 1:50 bleach solution add one volume of Sodium Hypochlorite to forty nine volume of clean water.	Soiled linen reusable	To be soaked for ≥30 minute
Phenolic germicidal detergent	Black Phenyl Dilution: 1 % - 5 %: coal tar acid and phenolic compounds	As per manufacturer's instructions.	Floor cleaning	Until remains wet (≥1 minute*)
Hand rub	70% isopropyl alcohol (v/v) or 2- propanol, 1-propanolol		Hand hygiene Surface cleaning where sodium hypochlorite solution cannot be used	20 -30sec



PREPARATION OF SODIUM HYPOCHLORITE SOLUTION

Concentration of Sodium hypochlorite	Water	5% Sodium hypochlorite	Total Volume Prepared
0.05 %	9.9 litres	100 ml	10 litre
	990 ml	10 ml	1 litre
0.1 %	4.9 litres	100 ml	5 litre
	980 ml	20 ml	1 litre
0.5 %	9 litres	1 litre	10 litre
	900 ml	100 ml	1 litre
1 %	800 ml	200 ml	1 litre



Annexure V

Main category of specific precautions with diseases/infective organism where these are to be followed

(Decide on basis of following for non COVID area of hospital, likely pathogen suspect and risk associated in procedure performed)

- First ask yourself what is likely pathogen in the patient?
- What is likely mode of its transmission? Then decide what precautions are to be taken:

Category of Specific precautions	Description	diseases/infective organism where these are to be followed
Contact Precautions (Direct)	i) Direct skin to skin contact (hands) ii) Ingestion, iii) Injection	<ul style="list-style-type: none"> • MRSA (Methicillin Resistant Staphylococcus aureus) • CRE (Carbapenem Resistant Enterobacteriaceae)
Contact Precaution (Indirect)	Through a contaminated intermediate object or person	<ul style="list-style-type: none"> • VRE (Vancomycin resistant Enterococci) • MDR-GNB NF (Multi Drug Resistant Gram negative bacteria, non-fermenting: eg. Acinetobacter, Pseudomonas) • Agents of conjunctivitis (Eg. Adenovirus, Gonococcus, Chlamydia etc) • Any highly contagious skin lesions (Abscess, impetigo, infected ulcer), infection with group A streptococcus, Staphylococcus, HSV lesions) • Skin infestations (eg Scabies) • Agent of diarrhea (eg Rota virus, cholera, Clostridium difficile etc) • Enterically transmitted hepatitis Virus (HAV, HEV)
Droplet	<ul style="list-style-type: none"> • Coughs, sneezes or talks, and during certain procedures • Droplets are infectious particles >5µm in size • Droplet distribution - usually travels short distance (1 metre) 	<ul style="list-style-type: none"> • Diphtheria, pharyngeal • <i>Haemophilus influenzae type b</i> (epiglottitis, pneumonia, meningitis) • <i>Neisseria meningitidis</i>- meningitis, sepsis, pneumonia • Pertussis (whooping cough) • Pneumonic plague • Mycoplasma pneumonia • Pharyngitis in infants and young children • Streptococcal (group A) diseases



INFECTION PREVENTION & CONTROL POLICY FOR COVID-19

Category of Specific precautions	Description	diseases/infective organism where these are to be followed
	<ul style="list-style-type: none"> • Droplets - transmitted indirectly to mucosal surfaces (e.g. via hands) 	<ul style="list-style-type: none"> • Influenza viruses, seasonal flu • VHF due to Lassa, Ebola, Marburg, Crimean Congo Fever viruses • Other viruses: Mumps, Parvovirus B19, Rhinovirus, Rubella, Adenovirus
Airborne	<ul style="list-style-type: none"> • Small-particle (< 5µm) aerosols are created during breathing, talking, • coughing or sneezing • Aerosols can be dispersed over long distances (>1 metre) by air currents • Small particles can transmit infection into small airways 	<p>Mycobacterium tuberculosis</p> <ul style="list-style-type: none"> • Measles virus • Varicella (chickenpox and zoster disseminated or in an immunocompromised host) • Severe acute respiratory syndrome associated coronavirus (SARS-CoV) • Smallpox (variola) and monkeypox virus • Aerosolizable spore-containing powders such as Bacillus anthracis • Aspergillus (if massive soft tissue infection with copious drainage and repeated irrigations required) • Novel or emerging pathogens and any other disease for which CDC or other public health guidelines recommend airborne infection isolation such as - • Middle East Respiratory Syndrome Coronavirus (MERS-CoV), SARS-COV-2(±) • Pandemic influenza <p style="text-align: center;">Aerosol Generating Procedures (as mentioned in page 8)</p>



Annexure-VI

Disposal of BMW

Category	Type of bag/container	Type of waste	Treatment disposal options
Yellow	Non chlorinated colour coded bags in coloured bins Separate collection system leading to ETP	<ul style="list-style-type: none"> • Human anatomical waste • Animal anatomical waste • Soiled waste • Expired or discarded medicines • Chemical waste • Micro, biotech & clinical lab waste • Chemical liquid waste 	Incineration/deep burial
Red	Non chlorinated plastic bags in coloured bins/ containers	Contaminated waste (recyclable) tubing, bottles, urine bags, syringes (without needles) and gloves	Auto/micro/hydro and then sent to recycling
White	Translucent, puncture, leak & tamper proof	Waste sharps including metals	Auto/dry heat sterilization followed by shredding /mutilation/encapsulation
Blue	Water proof card board boxes/containers	Glassware waste	Disinfection or auto/micro /hydro then sent to recycling

*Disposal by deep burial is permitted only in rural or remote areas where there is no access to common bio-medical waste treatment facility. This will be carried out with prior approval from the prescribed authority



Yellow bag

- Anatomical waste – human, animal body parts & tissue
 - Soiled waste – items contaminated with blood or body fluids – like dressings, cotton swabs and bags containing residual blood/blood components
 - Chemical waste – chemicals used in production of biologicals
 - Microbiology, biotechnology and other clinical laboratory waste (to be pre-treated by autoclaving before discarding):
 - Blood bags
 - Laboratory cultures
 - Stocks or specimens of microorganisms
 - Live or attenuated vaccines
 - Human and animal cell cultures
 - Discarded linen contaminated with blood or body fluid including mask and gown
-

Red Bag

- Contaminated recyclable waste
 - Waste from disposable items:
 - Tubing and bottles
 - Intravenous tubes and sets
 - Catheters and urine bags
 - Syringes (without needles), vacutainers
 - Gloves
 - Plastic petri-plates containing infectious material to be pre-treated by autoclaving and discarded in red bags
-



DEAD BODY DISPOSAL (COVID-19 CASES)

Staff should wear PPE kit as per Donning protocol.



Remove all clothes from dead body



- Remove all catheters, Ryle's tube, endotracheal tube, drains etc. from body and discard as per BMW 2016 guidelines.
- IV lines to be disposed into sharp containers.
- Used equipment should be autoclaved or decontaminated with disinfectant solutions in accordance with established infection prevention control practices.



- Seal all orifices with cotton plugs soaked in 1% Sod Hypochlorite or rectified spirit.
- Puncture or therapeutic wounds sealed with cotton plug dipped in 1% Sod Hypochlorite with surgical tape to avoid oozing.

ANY LEAKAGE FROM THE DEAD BODY DURING THE BODY PACKING OR REMOVAL PROCESS WILL BE CLEANED BY THE BODY DISPOSAL TEAM BY CLEANING THE FLOOR WITH THE APPROPRIATE DISINFECTANT (1 % SODIUM HYPOCHLORITE SOLUTION) AND LEAVING THE AREA CORDONED OFF FOR A PERIOD OF 30 MINUTES.



BODY PACKING

Wrap the body with a single layer cloth sheet soaked in 1% sodium hypochlorite followed by second layer of impermeable plastic sheet or biohazard bag and seal



Mop the outer surface of the bag with 1% Sodium Hypochlorite solution



All used /soiled linen should be kept in biohazard bag and its outer surface be disinfected with 1% Sod Hypochlorite solution.



Dead body should be transferred to the specified vehicle with minimum movement and handling.



After handling and disposing the dead body, personal care should be taken by attending personnel according to standard protocols like removal of all PPE equipment at proper place and in proper manner.



After removal of PPE wash hand with soap and water

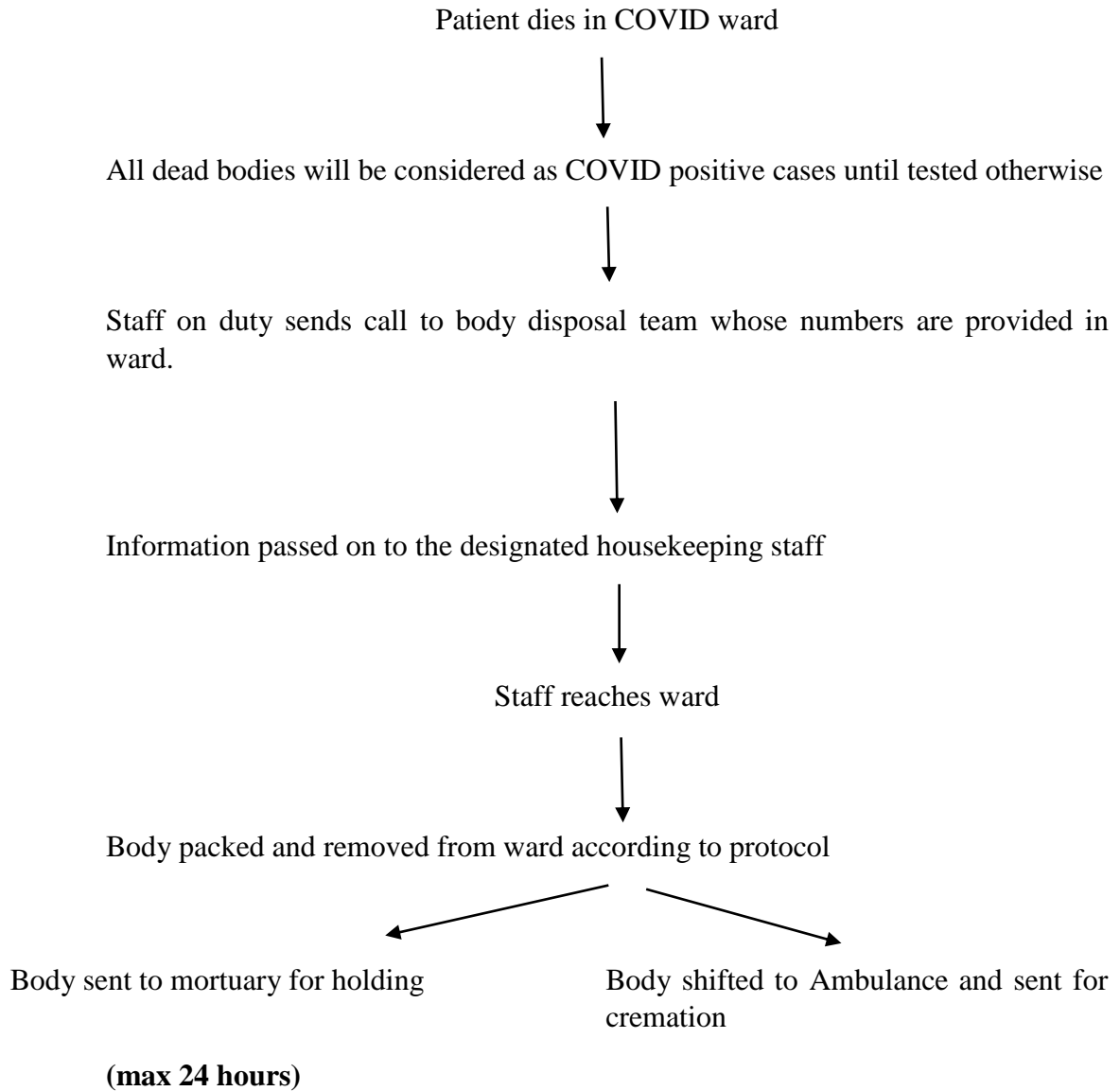


After transportation of the body, transporting vehicle should be decontaminated with 1% Sodium Hypochlorite.



CREMATION IS THE PREFERRED METHOD FOR PURPOSE OF LAST RITES IN ZIPPED BODY BAG.

COVID patient death information flow





Fumigation/ Fogging

Fumigation procedure is no longer recommended in the western literature.

It has no role in modern day Heating, ventilation, and air conditioning (HVACs). This practice gives a false sense of security. There is no substitute for vigorous washing of surfaces that come in contact with patients. Moreover, formalin has now been identified as a carcinogen. If this procedure is to be continued, it is safer to use an agent like hydrogen peroxide stabilized with a silver salt (fogging). However, it needs to be emphasized that this is not an alternative to mechanical cleaning of surfaces.

It is further emphasized that whole room disinfection cannot substitute for good physical cleaning practices, including compliance with hand hygiene and avoiding cross-contamination.

CDC and HICPAC have recommendations in both 2003 Guidelines for Environmental Infection Control in Health-Care Facilities and the 2008 Guideline for Disinfection and Sterilization in Healthcare Facilities that state : “Do not perform disinfectant fogging in patient-care areas using chemicals e.g., formaldehyde, phenol-based agents, or quaternary ammonium compounds as a way to decontaminate environmental surfaces or disinfect the air in patient rooms. Use of newer technologies involving fogging for room decontamination (e.g., ozone mists, vaporized hydrogen peroxide) recommendation says “**More research is required to clarify the effectiveness and reliability of these, hence no recommendation/unresolved issue**”.

Based on literature and guidelines available following is to be followed for fogging:

- **Indications: To be used in critical area (ICU, OT, HDU, NICU, Clean Zone CSSD, Hemodialysis Room) in following situations:**
 - Use of area following new reconstruction or repair activity
 - Environmental surveillance suggest fogging during investigation of outbreak
 - As advised by Hospital Infection control committee/ team.
 - Air surveillance report suggest fogging in sterile storage area of CSSD
- **Precautions**
 - All electronic equipment to be removed/properly covered in area to be fogged.



• **Reagent to be used for Fogging:**

1. **Stabilized 11% W/V hydrogen peroxide with 0.01% silver nitrate solution - Preferred agent** eg. Ecoshield, etc.
2. **3rd generation twin chain quaternary ammonium compound**
 - Alkyl dimethyl benzyl ammonium chloride. 2.37%
 - Alkyl dimethyl Ethyl benzyl ammonium chloride 2.37%)
(eg. D-125, Radix Guard-125 etc)

(But not preferred agent-to be used only when H₂O₂ containing agent not available and its absolutely necessary to do fogging)

(NOTE: Please consult HICC for any new product to be used.)

• **Procedure of Fogging:**

• **Calculation of amount of Reagents and time required for Fogging:**

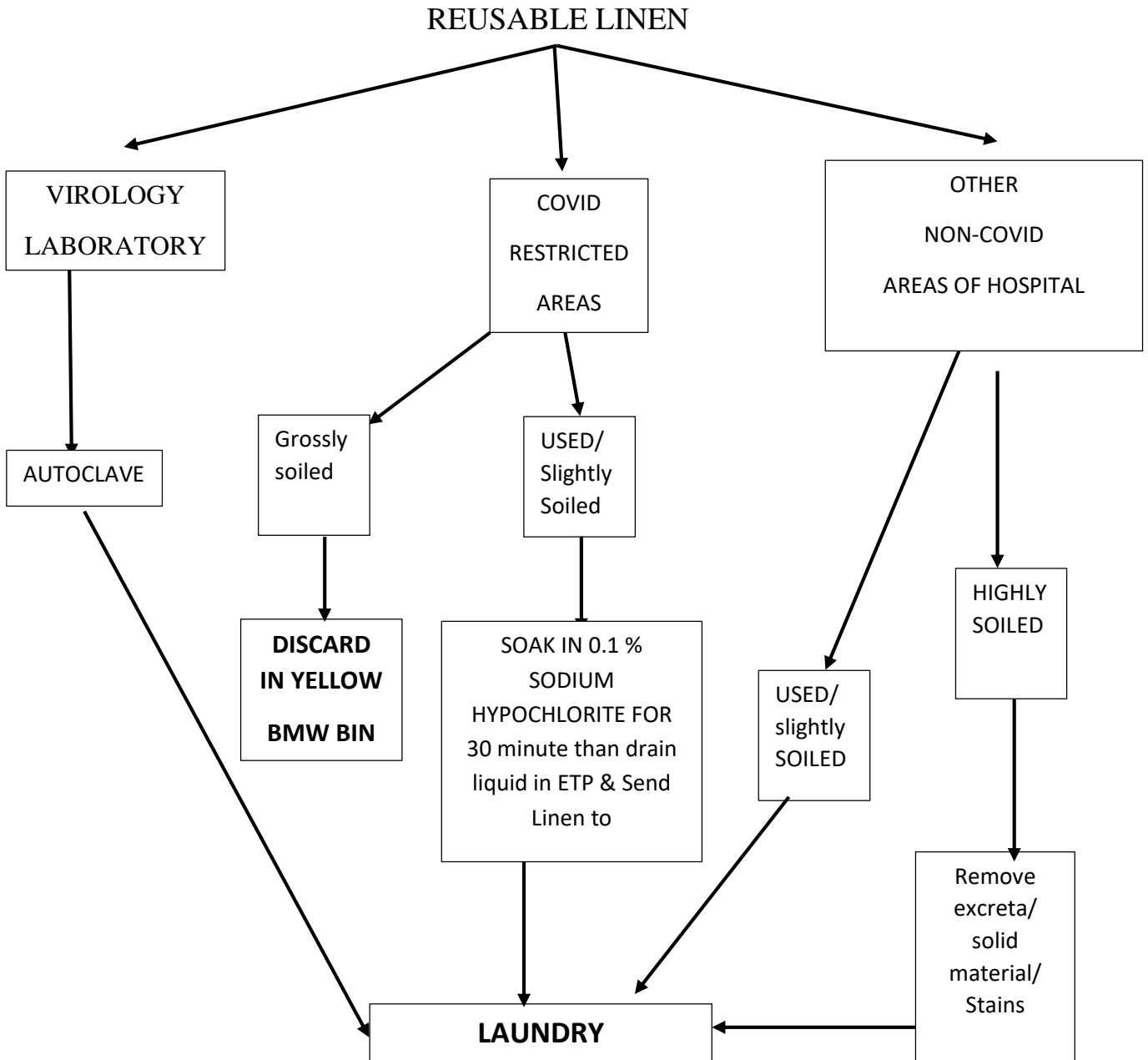
Volume of room to be fogged		Amount of Ecoshield in ml	Amount of Water in ml for Ecoshield	Amount of D125 in ml	Amount of Water in ml for D125	Fogging duration in minutes	Dwell time after fogging
Cubic Feet	m ³						
1000	28	200	800	15	1000	20	One hour
2000	57	400	1600	30	2000	40	One hour
3000	85	600	2400	45	3000	60	One hour
4000	113	800	3200	60	4000	80	One hour

• **Procedure:**

1. Cover/Remove all electrical appliances or electronic gadgets such as OT lamps, Anesthesia machine, C – arm head, Surgical microscopes, cautery machine etc. with sterile cover.
2. No AC, fan, duct, gas line should be operated during the fogging process.
3. Fill the fogger tank with prepared fogging solution
4. Place the fogger in one corner facing diagonally, Angle of fogger should be 45⁰ so that fog hits the roof of the OT and spreads equally on either sides.
5. Flow regulator to be adjusted for finer mist. While adjusting flow keep your palm at least 2 feet away, & in front of the running machine. It should just moisten your hand without water drops falling down from hand, if it is so reduce the flow rate.
6. Set the timer for approximately 20 minutes/liter of solution used and start the fogger.
7. Leave and close the room.
8. After completion of fogging ensure that no one enters the room for 60mins or till the mist settles down.
9. Ensure that the AHU is on for at least 6 hrs before using the area for patient care. (In case of fogging air ducts of HVAC, dwell time of 1 hours is to be given before fitting HEPA filter back.)
10. Store the fogger in clean and dry condition.



ITEMS FOR LAUNDRY



Note: Send all linen to Laundry in covered bag (Impermeable in case of wet).