

SOP FOR DECONTAMINATION AND DISINFECTION OF COVID -19 CONTAMINATED AREA

The purpose of decontamination and disinfection is to neutralize and kill COVID-19 (SARS-CoV-2) virus through process of cleaning, disinfection and decontamination. This is done to prevent further infection to other people.

Materials and Equipment Required

1. Personal Protective Equipment

A person carrying out disinfection and decontamination should wear Personal Protective Equipment (PPE) which include:

- Coverall
- N-95 respirator
- Surgical masks
- Goggles/face shield
- Inner gloves (non-sterile medical gloves)
- Outer gloves (utility gloves)
- Plastic apron
- Gumboots

Criteria for use of PPE for disinfection and decontamination for different facilities

PPE requirement	Isolation Room (Ward, ICU)	Quarantine Facilities	Vehicles and other carriers
Inner Gloves	√	X	X
Outer Gloves	√	√	√
Plastic apron	√	√	√
Coverall	√	X	X
N95 mask	√	X	X
Surgical mask	X	√	√
Face shield/ Goggles	√	√	√
Gumboot	√	√	√

Note: In case any individual in the quarantine room tests positive, it should be treated as infected and all the procedures recommended for disinfection including use of PPE for isolation room should be followed.

2. Disinfectants

- **0.5% bleaching** (sodium hypochlorite) solution (Refer preparation section 7) .
- **2% Glutaraldehyde solution** (if bleaching solution not appropriate to prevent corrosion of surfaces)
- **70% alcohol**

3. Decontamination supplies

- Mop and bucket
- Hand-operated knapsack sprayer OR Power sprayer
- Waste bins
- Alcohol wipes
- Sharps container
- Bucket to prepare disinfectant
- A red biohazard bag for placing your used PPE in as you remove it

4. Procedures for Cleaning and disinfection of room

Preparation for disinfection and decontamination

- Rings, wrist watches and jewellerys must be removed
- Use soap and water to wash hands or an alcohol-based hand rub
- Wear appropriate PPE following the donning procedures (as per the PPE requirement for recommended facilities)

Routine disinfection of isolation room

- Body fluid spills should be decontaminated promptly
- Clean the room with neutral detergent and water
- Mop the floor using 0.5% bleaching solution to disinfect the room
- The rooms should be cleaned and disinfected at every shift (three times a day) and as required
- There should be more frequent cleaning and disinfection of commonly used hand-touched surfaces and of anteroom or lobby areas (at least three times per day)
- Remove PPE following proper doffing procedures

- Put all disposable used PPE in red waste bins and secure it properly
- Segregate waste as per the National Guidelines on Infection Control and Medical Waste Management 2018.
- Put the reusable PPE (goggles/ face shields and gumboot) in 2% Glutaraldehyde solution, soak for 10 minutes
- Perform hand hygiene with soap and water and alcohol-based hand rub
- Reusable equipment (such as mop handles, buckets) must be decontaminated after use with a chlorine-based disinfectant
- Segregate waste as per the National Guidelines on Infection Control and Medical Waste Management 2018.
- Put all the waste generated from the patient's room into a red waste bin, spray bleaching solution over the waste and secure it properly and store it in the waste storage area.

Decontamination of isolation room once the patient has been discharged or demise

- Following transfer (recovery) and/or or demise of the patient, it is recommended that the room is kept vacant for one hour with doors closed
- Before entering the room, perform hand hygiene then put on PPE following the donning procedures
- Collect all cleaning equipment and healthcare waste bags before entering the room
- Remove all healthcare waste and any other disposable items
- Bedding and bed screens should be treated as infectious linen. Do not shake linen and avoid all necessary agitation and soak in 2% Glutaraldehyde solution for 30 minutes before taking for washing
- Mattress and pillows – Disinfect with (spray) 2% Glutaraldehyde solution and sundry until it is completely dried
- Patient care equipment should be cleaned with 2 % Glutaraldehyde solution.
- Clean all surfaces, beds and bathrooms with a neutral detergent, followed by a 0.5% chlorine-based disinfectant solution
- Segregate waste as per the National Guidelines on Infection Control and Medical Waste Management 2018.
- Reusable equipment (such as mop handles, buckets) must be decontaminated after use with a chlorine-based disinfectant as described above
- Reusable PPE items such as goggles and gumboots should be soaked in 0.5% bleaching solution for at least 10 minutes
- Put all the waste generated in the patients room in red waste bin, spray bleaching solution over the waste and secure it properly and store it in the waste storage area.

Routine disinfection of Quarantine Room

- Clean the room with neutral detergent and water
- Mop the floor using 0.5 % bleaching solution to disinfect the room
- The rooms should be cleaned and disinfected at least once a day and as and when required
- There should be more frequent cleaning and disinfection of commonly used hand-touched surfaces and of anteroom or lobby areas (at least twice a day).
- Remove PPE following proper doffing procedures
- Put all disposable used PPE in red waste bin and secure it properly
- Put the reusable PPE (goggles, and gumboot) in 2% Glutaraldehyde solution, soak for 10 minutes
- Perform hand hygiene with soap and water and alcohol-based hand rub
- Reusable equipment (such as mop handles, buckets) must be decontaminated after use with a chlorine-based disinfectant as described above.
- Segregate waste as per the National Guidelines on Infection Control and Medical Waste Management 2018.
- Put all the waste generated in the quarantine room in red waste bin, spray bleaching solution over the waste and secure it properly and store it in the waste storage area.

Procedures for decontamination and disinfection of motor vehicles/aircraft

- Use PPE following donning procedures
- Vehicles, aircraft and helicopters that are used for transporting suspected or infected person should be thoroughly disinfected using **2 % *Glutaraldehyde solution***.
- All under parts and wheels of cars should be sprayed with water and disinfectant. Lower pressure power sprayer or hand hold knapsack sprayer will be used for disinfecting, wheels and outer surfaces of the vehicles.
- Vehicles/aircraft interiors can be wiped down with disinfectants on cloths or by spraying disinfectants as required.
- Remove PPE following the doffing procedures

5. Waste disposal from Isolation and Quarantine facilities

All waste generated from the quarantined facilities should be treated as infectious and treated accordingly.

Waste from the Isolation Room

- Waste generated from the isolation room should be treated as infectious
- Biohazard bag should not be filled more than $\frac{3}{4}$ of its capacity

- Use **double bag** for the biohazard waste and secure it tightly
- Spray the disinfectant on waste plastic bag using 0.5 % bleaching powder and keep it for 20 minutes
- The ward boy will collect all the plastic bag in larger plastic bags
- Spray disinfectant over the large plastic bag and keep it for 20 minutes
- Waste from the isolation room should be sent for incineration or autoclaving and disposal

Waste from the Quarantine Facilities

- Waste generated from the quarantine facilities should be treated as infectious
- Waste bin with biohazard bag will be provided to all quarantined individuals
- Each individual at the quarantine facilities should keep waste in front of the door daily at the fixed time decided by the Quarantine Facility Coordinator
- The ward boy will spray the disinfectant on waste plastic bag containing wastes and keep for 20 minutes
- The ward boy will collect all the plastic bag in larger plastic bags
- Spray disinfectant over the large plastic bag and keep for 20 minutes
- Waste from the quarantine facilities should be sent for incineration or autoclaving and disposal

6. Preparation of disinfectants

Procedure for preparation of 0.5% bleaching solution (Sodium hypochlorite)

Formula for preparation of 0.5% bleaching solution

$$\text{No. of gm of powder in 1 litre of water} = \frac{\% \text{ chlorine desired} \times 1000}{\% \text{ chlorine in in bleaching powder}}$$

Example: To make 0.5 chlorine solution from calcium hypo-chloride powder containing 30% active chlorine

$0.5\% \times 1000 / 30\% = 16.67$ grams per 1 litre of water

Therefore add 16.67 grams per litre of water

Procedure for preparation of 2% Glutaraldehyde solution

Reseal the container holding 2% Glutaraldehyde solution

Add activator proportionately as recommended by the manufacturers before its use

7. Management team

- Health Official
- Ward boy
- Cleaner

Roles and responsibilities

Health Official

- Overall management and supervision of the decontamination and disinfection of the infected premises
- Responsible for monitoring the health of ward boy and providing counselling service if required
- The health staff shall wear basic PPE + N95 where necessary

Ward Boy

- Responsible for preparation of disinfectant
- Conduct disinfection and decontamination of rooms (at least 3 times a day) as per the directives of the health official.
- Any other work assigned by the health official

Cleaner

- Responsible for cleaning, collection and disposal of waste
- Conduct cleaning of rooms and other areas (every shift)
- Any other works assigned by the health officials