

Hospital Infection Control Committee
AIIMS, New Delhi

Infection Prevention & Control Guidelines for
2019-nCoV (COVID-19)



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1. Introduction

Coronaviruses (CoV) belong to a family of viruses that cause illness ranging from the common cold to more severe diseases. A novel coronavirus (2019-nCoV) is a new strain that has not been previously identified in humans. The infection is spread through respiratory route i.e. respiratory droplets and direct human contact. Healthcare personnel (HCP) are at risk of infection through respiratory routes and direct contact with infectious patients.

In view the current situation regarding COVID -19 disease in India, we need to be prepared for the handling of suspect and confirmed cases, who might present to the AIIMS hospital.

These guidelines are supplementary to the existing Hospital Infection control Manual of AIIMS. The guidelines have been adapted from the existing WHO & CDC recommendations.

Standard recommendations to prevent infection spread include standard precautions, contact precautions and respiratory precautions.

Patients suspected of having 2019-nCoV infection should be shifted to the isolation facility from the triage area as soon as possible. The HCP should do this after donning appropriate PPE. The patient should wear mask/respirator.

Standard precautions

Health-care workers caring for PUI (Patient under investigation) patients should implement standard infection control precautions. **These include basic hand hygiene, use of personal protective equipment, respiratory etiquettes, and environmental disinfection.**

Patient placement

The PUI has to be admitted in an isolation room with negative pressure and at least 6 air changes per hour.

- Only essential personnel should enter the room. Implement staffing policies to minimize the number of HCP who enter the room.
- Facilities should keep a log of all persons who care for or enter the rooms or care area of these patients.
- Use dedicated or disposable noncritical patient-care equipment (e.g., blood pressure cuffs). If equipment will be used for more than one patient, clean and disinfect such equipment before use on another patient according to manufacturer's instructions.
- HCP entering the room soon after a patient vacates the room should use respiratory protection.

2. Advice on the usage of PPE in the context of COVID-19

The following are recommendations for the rational use of personal protective equipment (PPE) at health care facilities. PPE includes gloves, medical masks, goggles or a face shield, and gowns, as well as for specific procedures, respirators (i.e., N95) and aprons. It is intended for HCPs, infection prevention and control (IPC) professionals and health care managers.

General Advice

Hand hygiene remains one of the most important measures for all persons for the prevention and control of majority of the respiratory viral infections -, including 2019-nCoV infections or COVID-19. This can be performed with soap and water or alcohol-based hand rubs. Wearing a medical mask is one of the prevention measures to limit spread of certain respiratory diseases, including 2019-nCoV, is useful when worn by the persons suffering from the disease or contacts of the patients. These measures must be combined with other IPC measures to prevent the human-to-human transmission of COVID-19, depending on the specific situation.

Community setting (Applicable to all staff)

Individuals without respiratory symptoms should:

- i. avoid agglomerations and frequency of closed crowded spaces;
- ii. maintain distance of at least 1 meter from any individual with 2019-nCoV respiratory symptoms (e.g., coughing, sneezing);
- iii. perform hand hygiene frequently, using alcohol-based hand rub if hands are not visibly soiled or soap and water when hands are visibly soiled;
- iv. if coughing or sneezing, cover nose and mouth with flexed elbow or paper tissue, dispose-off tissue immediately after use and perform hand hygiene;
- v. refrain from touching mouth and nose;
- vi. a medical mask is not required, as no evidence is available on its usefulness to protect non-sick persons. However, masks might be worn according to local cultural habits. If masks are used, best practices should be followed on how to wear, remove, and dispose of them and on hand hygiene action after removal (see below advice regarding appropriate mask management).

Individuals with respiratory symptoms should:

- i. wear a medical mask and seek medical care if experiencing fever, cough and difficulty breathing, as soon as possible or in accordance with to local protocols;
- ii. follow the below advice regarding appropriate mask management.

Health Care Facilities

Individuals with respiratory symptoms should:

- i. wear a medical mask while waiting in triage or waiting areas or during transportation within the facility;
- ii. wear a medical mask when staying in cohorting areas dedicated to suspected or confirmed cases;
- iii. do not wear a medical mask when isolated in single rooms but cover mouth and nose when coughing or sneezing with disposable paper tissues. Dispose them appropriately and perform hand hygiene immediately afterwards.

Health care workers should:

- a. wear a medical mask when entering a room where patients suspected or confirmed of being infected with 2019-nCoV are admitted and in any situation of care provided to a suspected or confirmed case;
- b. use a particulate respirator at least as protective as a US National Institute for Occupational Safety and Health (NIOSH)-certified N95, European Union (EU) standard FFP2, or equivalent, when performing aerosol-generating procedures such as:
 - tracheal intubation
 - non-invasive ventilation
 - tracheotomy
 - cardiopulmonary resuscitation
 - manual ventilation before intubation and
 - bronchoscopy

Masks management

If medical masks are worn, appropriate use and disposal is essential to ensure they are effective and to avoid any increase in risk of transmission associated with the incorrect use and disposal of masks.

The following information on correct use of medical masks derives from the practices in health-care settings:

- a. place mask carefully to cover mouth and nose and tie securely to minimise any gaps between the face and the mask;
- b. while in use, avoid touching the mask;
- c. remove the mask by using appropriate technique (i.e. do not touch the front but remove the lace from behind);
- d. after removal or whenever you inadvertently touch a used mask, clean hands by using an alcohol-based hand rub or soap and water if visibly soiled
- e. replace masks with a new clean, dry mask as soon as they become damp/humid;
- f. do not re-use single-use masks;
- g. discard single-use masks after each use and dispose-off them immediately upon removal.

3. Rational use of personal protective equipment

PPE use is based on the risk of exposure (e.g., type of activity) and the transmission dynamics of the pathogen (e.g., contact, droplet or aerosol). Observing the following recommendations will ensure rational use of PPE.

1. The type of PPE used when caring for COVID-19 patients will vary according to the setting and type of personnel and activity (Below Table).
2. Healthcare workers involved in the direct care of patients should use the following PPE:
 - a. gowns,
 - b. gloves,
 - c. medical mask and
 - d. eye protection (goggles or face shield).
3. Specifically, for **aerosol-generating procedures** (e.g., tracheal intubation, non-invasive ventilation, tracheostomy, cardiopulmonary resuscitation, manual ventilation before intubation, bronchoscopy) healthcare workers should use respirators (N95), eye protection, gloves and gowns; aprons should also be used if gowns are not fluid resistant.
4. Respirators (e.g., N95, FFP2 or equivalent standard) have been used for an extended time during previous public health emergencies involving acute respiratory illness when PPE was in short supply. This refers to wearing the same respirator while caring for multiple patients who have the same diagnosis without removing it, and evidence indicates that respirators maintain their protection when used for extended periods. However, using one respirator for longer than 4 hours can lead to discomfort and should be avoided.
5. Among the general public, persons with respiratory symptoms or those caring for COVID-19 patients at home should receive medical masks.
6. For asymptomatic individuals, wearing a mask of any type is not recommended.
7. **Wearing medical masks when they are not indicated may cause unnecessary cost and a procurement burden and create a false sense of security that can lead to the neglect of other essential preventive measures.**

Table 1: Guidance for use of PPE in different settings⁴

Setting	Target personel/patients	Activity	PPE
DESIGNATED COVID AREAS			
ICU	Healthcare workers (Doctor/Nurses/Technician)	Aerosol Generating procedures	N95 Goggles or Face shield Gown (Water resistant) Gloves (Double) Apron (optional) Shoe cover Hood
	Cleaner/Sweeper/HA	Disinfection	N95 Goggles Gown(Water

			resistant) Heavy Duty Gloves Boots Hood
Ward	Healthcare workers (Doctor/Nurses/Technician)	Non-Aerosol Generating Procedure	N95 Goggles Gown(Water resistant) Gloves (Double) Shoe cover Hood
	Cleaner/Sweeper/HA	Disinfection/Patient Shifting	N95 Heavy Duty Gloves/ Gloves (Patient shifting) Goggles Gown(Water resistant) Boots Hood
Screening (Burns and plastic surgery)	Healthcare workers (Doctor/Nurses)	Screening	N95 Goggles Gown(Water resistant) Gloves (Double)
	Healthcare workers (Doctor/Nurses)	Sampling	N95 Goggles Gown(Water resistant) Gloves (Double) Shoe cover Hood
	Cleaner/Sweeper/HA	Disinfection/Patient Shifting	Triple layer mask Gloves(Patient shifting) Heavy Duty Gloves
DESIGNATED SCREENING AREAS			
Screening (New RAK OPD)	Healthcare workers (Doctor/Nurses)	Screening	N95 Gloves (Single)
	Cleaner/Sweeper/HA	Disinfection	Triple layer mask Gloves(Patient shifting) Heavy Duty Gloves
Screening (Emergency)	Healthcare workers (Doctor/Nurses)	Screening	N95 Goggles

medicine; pediatrics OPD)			Gown(Surgical Linen Gown)use with an apron Gloves (Double)
	Cleaner/Sweeper/HA	Disinfection	Triple layer mask Heavy Duty Gloves
TRANSPORT of COVID SUSPECT / CONFIRMED CASE IN AMBULANCE			
Ambulance (HCW travelling in patient compartment)	Healthcare workers (Doctor/Nurses)	Attending patient (Direct contact >15 min)	N95 Goggles Gown(Water resistant) Gloves (Double)
	Cleaner/Sweeper/HA	Disinfection	Triple layer mask Heavy Duty Gloves
	Driver	No Direct contact	Triple layer mask
Emergency Medicine (New Emergency; Pediatric Emergency; Surgical Emergency)	Healthcare workers (Doctor/Nurses/Technician) Non-Aerosol generating	Non-Aerosol generating procedure	Triple layer mask* Gown (In Red area only) Gloves (Double) *N95 [Red area only]
	Cleaner/Sweeper/HA	Disinfection/Patient Shifting	Triple layer mask Gloves (Patient Shifting) Heavy Duty Gloves
General OPD/EHS OPD	Healthcare workers (Doctor/Nurses)	Non-Aerosol generating procedure	Triple layer mask
	Cleaner/Sweeper/HA	Disinfection	Triple layer mask Heavy Duty Gloves
General Ward/Private Wards	Healthcare workers (Doctor/Nurses)	Non-Aerosol generating procedure	Triple layer mask
	Cleaner/Sweeper/HA	Disinfection/ Patient Shifting	Triple layer mask Gloves (Patient Shifting) Heavy Duty Gloves
ICUs	Healthcare workers (Doctor/Nurses/Technician)	Aerosol Generating procedures in Non-COVID Area	Triple layer mask Cap Gown(Water resistant) Gloves Shoe cover
	Cleaner/Sweeper/HA	Disinfection/Patient Shifting	Triple layer mask Cap Gown(Water resistant)

			Gloves (Patient Shifting) Heavy Duty Gloves Boots
EHS Dispensary	Pharmacist	Drug Dispensing	Triple layer mask
Laboratory personnel	Doctor/Technician	Dealing with Respiratory samples	Triple layer mask Gown(Water resistant) Gloves Goggles
Radiodiagnosis	Doctor/Technician	Non-aerosol generating procedures	Triple layer mask
Administrative offices	All staff	No direct/indirect patient contact	No PPE
COVID Confirmed case/Suspect	Patient	For Droplet prevention	Triple layer mask

Check list for PPE Donning and Doffing

1. Name of staff : _____
2. Name of observer : _____
3. Date : _____

Note:

1. Get into scrubs or comfortable clothes, remove jewellery, ensure you had water and food and visited washrooms etc. as the residents and nurses are expected to stay inside for at least 6 hrs.
2. The observer needs to be in PPE when observing doffing.
3. Two chairs should be placed in doffing area labeled **DIRTY & CLEAN**
4. Check all PPE before starting donning.

Table 2: Check list for Donning

S.No.	Procedure	YES/NO
1.	Wash hands with soap and water	
2.	Wear shoe cover	
3.	Wear 1 st pair of gloves	
4.	Wear gown	
5.	Wear the mask/respirator (check for any leaks)	
6.	Wear goggles/face shield	
7.	Wear hood	
8.	Wear 2 nd pair of gloves	
9.	Gown fitness check (ask buddy to help)	

Table 3: Check list for Doffing

S.No.	Procedure	YES/NO
1.	Check for any leak or soiling in PPE before doffing, (disinfect site if contaminated)	
2.	Disinfect the hands while wearing gloves (similar to hand hygiene procedure).	
3.	Remove shoe covers only by touching the outer surface (by sitting on DIRTY chair)	
4.	Perform hand hygiene	
5.	Remove outer gloves	
6.	Perform hand hygiene	
7.	Remove hood	
8.	Perform hand hygiene	
9.	Remove gown	
10.	Perform hand hygiene	
11.	Remove goggles/face shield	
12.	Perform hand hygiene.	
13.	Remove second pair of gloves	
14.	Perform hand hygiene	
15.	Wear new pair for gloves	
16.	Remove mask (don't touch the front of mask, handle with slings/bands)	
17.	Perform hand hygiene	
18.	Clean shoes with alcohol swabs (by sitting on CLEAN chair)	
19.	Remove last pair of gloves and perform hand hygiene	

Note: All PPE to be discarded in **RED** bag. This red bag to be placed inside another red bag and sent for treatment (“double bagging”).

Donning (putting on) PPE

These requirements apply to all staff entering the room of a corona virus infected patient. The following PPE is required to be donned prior to entry into the patient room. Donning in the following order is recommended.

1. Gown

A clean, sterile, disposable gown must be worn. Ensure that gown is tied in back and provides full coverage.

2. N-95 respirator

- a. All staff must wear approved respiratory protection (N-95 respirator).
- b. Before using an N-95 respirator, staff must be medically cleared and trained in how to wear/use each device.
- c. For N-95 respirators, staff must have been fit-tested within the past year to ensure proper size and fit.
- d. A “fit-check” (also known as a “seal check”) should be performed before each N-95 respirator use.
- e. The N-95 respirator must be discarded after each use.

3. Goggles/Face shield

All staff must wear goggles or face shield to protect mucous membranes from exposure due to splash or potential for hand contamination of eyes, nose or mouth.

4. Gloves

The 1st pair of gloves must be clean may not be sterile. The 2nd pair of gloves must be pulled over the sleeves/cuffs of gown.

Removal

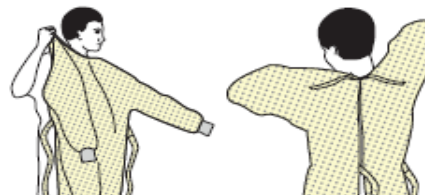
Remove all PPE in anteroom. Remove all the PPE (gloves, gown, face shield or goggles, N-95) in the dirty area as per the checklist. After finishing the doffing process completely the person has to leave the doffing area and directly go to the designated shower area. There the person can remove all the scrubs and take shower with soap and water.

SEQUENCE FOR PUTTING ON PERSONAL PROTECTIVE EQUIPMENT (PPE)

The type of PPE used will vary based on the level of precautions required, such as standard and contact, droplet or airborne infection isolation precautions. The procedure for putting on and removing PPE should be tailored to the specific type of PPE.

1. GOWN

- Fully cover torso from neck to knees, arms to end of wrists, and wrap around the back
- Fasten in back of neck and waist



2. MASK OR RESPIRATOR

- Secure ties or elastic bands at middle of head and neck
- Fit flexible band to nose bridge
- Fit snug to face and below chin
- Fit-check respirator



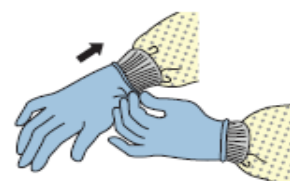
3. GOGGLES OR FACE SHIELD

- Place over face and eyes and adjust to fit



4. GLOVES

- Extend to cover wrist of isolation gown



USE SAFE WORK PRACTICES TO PROTECT YOURSELF AND LIMIT THE SPREAD OF CONTAMINATION

- Keep hands away from face
- Limit surfaces touched
- Change gloves when torn or heavily contaminated
- Perform hand hygiene



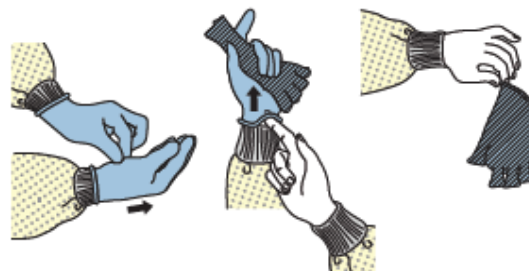
Figure 1: Sequence for Putting on PPE

HOW TO SAFELY REMOVE PERSONAL PROTECTIVE EQUIPMENT (PPE) EXAMPLE 1

There are a variety of ways to safely remove PPE without contaminating your clothing, skin, or mucous membranes with potentially infectious materials. Here is one example. **Remove all PPE before exiting the patient room except a respirator, if worn. Remove the respirator after leaving the patient room and closing the door.** Remove PPE in the following sequence:

1. GLOVES

- Outside of gloves are contaminated!
- If your hands get contaminated during glove removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Using a gloved hand, grasp the palm area of the other gloved hand and peel off first glove
- Hold removed glove in gloved hand
- Slide fingers of ungloved hand under remaining glove at wrist and peel off second glove over first glove
- Discard gloves in a waste container



2. GOGGLES OR FACE SHIELD

- Outside of goggles or face shield are contaminated!
- If your hands get contaminated during goggle or face shield removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Remove goggles or face shield from the back by lifting head band or ear pieces
- If the item is reusable, place in designated receptacle for reprocessing. Otherwise, discard in a waste container



3. GOWN

- Gown front and sleeves are contaminated!
- If your hands get contaminated during gown removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Unfasten gown ties, taking care that sleeves don't contact your body when reaching for ties
- Pull gown away from neck and shoulders, touching inside of gown only
- Turn gown inside out
- Fold or roll into a bundle and discard in a waste container

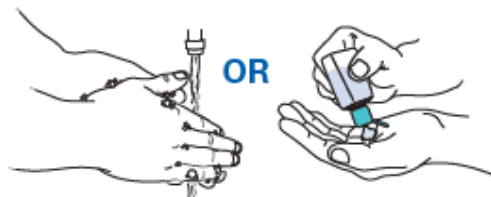


4. MASK OR RESPIRATOR

- Front of mask/respirator is contaminated — DO NOT TOUCH!
- If your hands get contaminated during mask/respirator removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Grasp bottom ties or elastics of the mask/respirator, then the ones at the top, and remove without touching the front
- Discard in a waste container



5. WASH HANDS OR USE AN ALCOHOL-BASED HAND SANITIZER IMMEDIATELY AFTER REMOVING ALL PPE



**PERFORM HAND HYGIENE BETWEEN STEPS IF HANDS
BECOME CONTAMINATED AND IMMEDIATELY AFTER
REMOVING ALL PPE**



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Figure 2: Example for Removal of PPE

Decontamination and Waste Management

- In addition to using the appropriate PPE, frequent hand hygiene and respiratory hygiene should always be performed. PPE should be discarded in an appropriate waste container after use, and hand hygiene should be performed before putting on and after taking off PPE.
- Any surface or material known to be, or potentially be, contaminated by biological agents during laboratory operations must be correctly disinfected to control infectious risks.
- Proper processes for the identification and segregation of contaminated materials must be adopted before decontamination and/or disposal.
- Where decontamination cannot be performed in the laboratory area or onsite, the contaminated waste must be packaged in an approved (that is, leakproof) manner, for transfer to another facility with decontamination capacity.

4. Practices for Environmental Cleaning in Healthcare Facilities

Environmental cleaning is part of Standard Precautions, which should be applied to all patients in all healthcare facilities

Ensure that cleaning and disinfection procedures are followed consistently and correctly. Cleaning environmental surfaces with water and detergent and applying commonly used hospital disinfectants (such as sodium hypochlorite) is an effective and sufficient procedure. ⁶

Cleaning agents and disinfectants

1. 1% Sodium Hypochlorite can be used as a disinfectant for cleaning and disinfection
2. The solution should be prepared fresh.
3. Leaving the solution for a contact time of at least 10 minutes is recommended.
4. Alcohol (e.g. isopropyl 70% or ethyl alcohol 70%) can be used to wipe down surfaces where the use of bleach is not suitable, e.g. metals.

Personal Protective Equipment (PPE) to wear while carrying out cleaning and disinfection works

1. Wear heavy duty/disposable gloves, disposable long-sleeved gowns, eye goggles or a face shield, and a medical mask (please see the PPE document for details)
2. Avoid touching the nose and mouth (goggles may help as they will prevent hands from touching eyes)
3. Disposable gloves should be removed and discarded if they become soiled or damaged, and a new pair worn
4. All other disposable PPE should be removed and discarded after cleaning activities are completed. Eye goggles, if used, should be disinfected after each use, according to the manufacturer's instructions.

5. Hands should be washed with soap and water/alcohol-based hand rub immediately after each piece of PPE is removed, following completion of cleaning.

Cleaning guidelines

1. Where possible, seal off areas where the confirmed case has visited, before carrying out cleaning and disinfection of the contaminated environmental surfaces. This is to prevent unsuspecting persons from being exposed to those surfaces
2. When cleaning areas where a confirmed case has been, cleaning staff should be attired in suitable PPE. Disposable gloves should be removed and discarded if they become soiled or damaged, and a new pair worn. All other disposable PPE should be removed and discarded, after cleaning activities are completed. Goggles, if used, should be disinfected after each use, according to manufacturer's instructions. Hands should be washed with soap and water immediately after the PPE is removed.
3. Mop floor with routinely available disinfectant.
4. Wipe down all accessible surfaces of walls as well as blinds with disinfectant or bleach solution.
5. Remove curtains/ fabrics/ quilts for washing, preferably using the hot water cycle. For hot-water laundry cycles, wash with detergent or disinfectant in water at 70°C for at least 25 minutes.
6. Discard cleaning items made of cloth and absorbent materials, e.g. mop head and wiping cloths, into biohazard bags after cleaning and disinfecting each area. Wear a new pair of gloves and fasten the double-bagged biohazard bag with a cable tie.
7. Disinfect buckets by soaking in disinfectant or bleach solution, or rinse in hot water before filling.
8. Disinfectant or 1% sodium hypochlorite solution should be applied to surfaces using a damp cloth. **They should not be applied to surfaces using a spray pack, as coverage is uncertain and spraying may promote the production of aerosols.** The creation of aerosols caused by splashing liquid during cleaning should be avoided. A steady sweeping motion should be used when cleaning either floors or horizontal surfaces, to prevent the creation of aerosols or splashing. Cleaning methods that might aerosolize infectious material, such as the use of compressed air, must not be used.
9. Biohazard bags should be properly disposed-off, upon completion of the disinfection work.

Table 4: CLEANING GUIDELINES FOR CLINICAL AREA

Area/Item	Process for Disinfection	Method
Floors	Detergent(DETREGENT TO BE USED AS PER AIIMS PROTOCOL)and 1% Sodium Hypochlorite	(Three buckets, one with plain water and one with detergent solution; one bucket for 1% sodium hypochlorite <ul style="list-style-type: none"> • First mop the area with the warm water and detergent solution • After mopping clean the mop in plain water and squeeze it • Mop area again using sodium hypochlorite 1% after drying the area Mop the floor starting at the far corner of the room and work towards the door.
Ceiling & Walls	Detergent/ 1% Sodium Hypochlorite	Damp dusting Damp dusting should be done in straight lines that overlap one another
Doors & Door Knobs	Detergent/ 1% Sodium Hypochlorite	The doors are to be washed with a brush
Isolation room	Detergent and 1% Sodium Hypochlorite	Terminal cleaning: <ul style="list-style-type: none"> • Three buckets (As mentioned above)
All Clinical Areas/ Laboratories/ where spill care is required	1% Sodium Hypochlorite	As per spill management protocol. At the end, Wash mop with detergent and hot water and allow it to dry.
Stethoscope	Alcohol based rub/ Spirit Swab	Should be wiped with alcohol based rub/spirit swab before each patient contact
BP Cuffs & Covers	Alcohol based disinfectant	
Thermometer	Wipe with alcohol rub in-between each patient use	Preferably one thermometer for each patient
Injection & Dressing Trolley	Detergent & 70% Alcohol	<ul style="list-style-type: none"> • Clean Daily with detergent & water • After each use, should be disinfected with 70% alcohol based reagent

Refrigerators	Detergent & Water Inside Cleaning: Weekly Surface Cleaning Schedule: As mentioned for High Touch Surfaces	<ul style="list-style-type: none"> • Empty the fridge and store things appropriately • Defrost, decontaminate and clean with detergent • Dry it properly and replace the things
Equipment (Equipment need to be disinfected after every contact with suspected patient)	<ul style="list-style-type: none"> • All Areas & Surfaces of Equipment: 1% Sodium Hypochlorite • Sensitive Probes of Equipment: 70% Alcohol • CT/MR like machines etc, (As per manufacturer's Instructions) 	Whenever possible, portable radiographic equipment should be used to limit transportation of patients

Table 5: CLEANING GUIDELINES FOR NON-CLINICAL AREAS

Area/Item	Process for Disinfection	Method
General cleaning	Detergent and Water (1% Sodium Hypochlorite can be done)	<ul style="list-style-type: none"> • Scrub floors with hot water and detergent • Clean with plain water • Allow to dry • Hypochlorite 1% mopping can be done.
Lockers/ Tables/Cupboards/ Wardrobes/ Benches/ Shelves	Detergent & Water	Damp dusting
Railings	Detergent & 1% Sodium Hypochlorite Three small buckets <ul style="list-style-type: none"> • One with plain 	Damp dust with warm water and detergent followed by disinfection with hypochlorite

	water <ul style="list-style-type: none"> • One with detergent solution • One for sodium hypochlorite 1% 	
Mirrors & Glass	Detergent & Water	<ul style="list-style-type: none"> • Using warm water and a small quantity of detergent and a damp cloth • wipe over the mirror and surroundings
Stainless steel/ Any other sink	Detergent & Water	
Furniture	Detergent & Water	<ul style="list-style-type: none"> • Damp dust with detergent
Telephone	Detergent & Water	<ul style="list-style-type: none"> • Damp dust with detergent
Chairs	Detergent & Water	<ul style="list-style-type: none"> • Damp dust with detergent
Light Switches	Detergent & Water	<ul style="list-style-type: none"> • Damp cloth (never wet) with detergent
Curtains	Detergent & Water	<ul style="list-style-type: none"> • Clean with water and detergent for curtains

Table 6: CLEANING OF TOILETS

Area/Item	Process for Disinfection	Method
<ul style="list-style-type: none"> • Toilet Pot & Floor 	<ul style="list-style-type: none"> • 1% Sodium Hypochlorite 	Scrub with the recommended agents and the long handle angular brush.
<ul style="list-style-type: none"> • Rest all areas of Toilets like <ul style="list-style-type: none"> ○ Taps & Fittings ○ Outside Sink ○ Soap Dispensers etc. 	<ul style="list-style-type: none"> • Detergent & Water 	Scrub

Frequency of cleaning of surfaces

High touch surfaces: Disinfection of high touch surfaces like (doorknobs, telephone, call bells, bedrails, stair rails, light switches, wall areas around the toilet) should be done:

CLINICAL AREAS		NON-CLINICAL AREAS
Where Suspected or Confirmed COVID-19 Case is kept	Other areas, where no Suspected or Confirmed COVID-19 Case is kept	
1-2 Hourly	2-3 Hourly	3-4 Hourly

Low-touch surfaces: For Low-touch surfaces (walls, mirrors, etc.) mopping should be done:

CLINICAL AREAS		NON-CLINICAL AREAS
Where Suspected or Confirmed COVID-19 Case is kept	Other areas, where no Suspected or Confirmed COVID-19 Case is kept	
2-3 Hourly	3-4 Hourly	Once Per Shift

(Reference: Best Practices for Environmental Cleaning in Healthcare Facilities in Resource-Limited Settings. CDC. November, 2019)

Precautions to take after completing the clean-up and disinfection

1. Staff should wash their hands with soap and water immediately after removing the PPE, and when cleaning and disinfection work is completed.
2. Discard all used PPE in a double-bagged biohazard bag, which should then be securely sealed and labeled.
3. The staff should be aware of the symptoms, and should report to their occupational health service if they develop symptoms.

DISINFECTIONCHECK LIST FOR OPERATION THEATRE

AREA:

MONTH..... YEAR:.....

FLOOR MOPPING • CLENZO DILUTION: 200ML IN 5LTR OF WATER	SHIFT	TIME SCHEDULE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	A SHIFT		8 AM														
		12 PM															
		AFTER TR/DIS/DEATH															
B SHIFT		4PM															
		8PM															
		AFTER TR/DIS/DEATH															
NIGHT SHIFT		12 AM															
		4 AM															
		AFTER TR/DIS/DEATH															
CARBOLIZATION + INSTANT DISINFECTION CARBOLIZATION • BACISHIELD 10% (100ML BACCISHIELD + 900ML H2O) INSTANT DISINFECTION • BACILOL 25 SPRAY		A SHIFT (9AM)															
		AFTER TR/DIS/DEATH															

- 1% SODIUM HYPOCHLORITE TO BE USED FOR CARBOLIZATION & FLOOR MOPPING FOR PATIENT WITH CONFIRMED CASES OF COVID-19
- SPILL MANAGEMENT WITH 1% SODIUM HYPOCHLORITE AS AND WHEN REQUIRED

SIGNATURE OF SISTER INCHARGE

Figure 3: Disinfection Checklist for Operation Theatre

DISINFECTIONCHECK LIST FOR NON CRITICAL AREAS (WARDS)

AREA:

MONTH..... YEAR:.....

FLOOR MOPPING • CLENZO DILUTION: 200ML IN 5LTR OF WATER	SHIFT	TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	A SHIFT		8 AM														
		12 PM															
		AFTER TR/DIS/DEATH															
B SHIFT		4PM															
		8PM															
		AFTER TR/DIS/DEATH															
NIGHT SHIFT		12 AM															
		4 AM															
		AFTER TR/DIS/DEATH															
CARBOLIZATION • PHENOL • PHENOL: 35 ML WATER + 5ML PHENOL		A SHIFT															
		AFTER TR/DIS/DEATH															

- 1% SODIUM HYPOCHLORITE TO BE USED FOR CARBOLIZATION & FLOOR MOPPING FOR PATIENT WITH CONFIRMED CASES OF COVID-19
- SPILL MANAGEMENT WITH 1% SODIUM HYPOCHLORITE AS AND WHEN REQUIRED

SIGNATURE OF SISTER INCHARGE

Figure 4: Disinfection Checklist for Non Critical areas(Wards)

DISINFECTION CHECK LIST FOR CRITICAL AREAS (ICU, CATH LAB)

AREA:

MONTH..... YEAR.....

SHIFT	TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		FLOOR MOPPING • CLENZO DILUTION: 200ML IN 5LTR OF WATER	A SHIFT													
8 AM																
12 PM																
B SHIFT	AFTER TR/DIS/DEATH															
	4 PM															
	8 PM															
NIGHT SHIFT	AFTER TR/DIS/DEATH															
	12 AM															
	4 AM															
CARBOLIZATION • BACCISHIELD OR PHENOL • BACCISHIELD (10%): 100ML BACCISHIELD + 900ML H ₂ O • PHENOL: 95 ML WATER + 5ML PHENOL	A SHIFT															
	AFTER TR/DIS/DEATH															

- 1% SODIUM HYPOCHLORITE TO BE USED FOR CARBOLIZATION & FLOOR MOPPING FOR PATIENT WITH CONFIRMED CASES OF COVID-19
- SPILL MANAGEMENT WITH 1% SODIUM HYPOCHLORITE AS AND WHEN REQUIRED

SIGNATURE OF SISTER INCHARGE

Figure 5: Disinfection Checklist for Critical Areas (ICU, Cath Lab)

5. Specific instructions on prevention of CORONA VIRUS (COVID 19) transmission at Centre for Dental Education and Research, AIIMS

General Instructions for dental operatory

1. All surfaces on the dental chairs and attachments, instrument tray should also be cleaned with appropriate disinfectant (70% Alcohol, 0.5% Hydrogen peroxide, 0.1 % Sodium Hypochlorite for 1 min) after every patient. ¹⁻³
2. The exposed tubings of the chair, instrument arm, light arm, adjoining equipments like external scalers, light cure units base, working slabs should be disinfected after every patient. ¹⁻³
3. The X ray unit handle, tube and casing should be disinfected after every patient. ¹⁻³
4. The dental X-ray Units, CBCT Units and attached computers and monitors of the same should be sanitized appropriately twice daily.
5. The patient registration and waiting areas should be specifically monitored for reducing of crowding and safe distance.

Procedures in Dental Operatory – for all patients

- All the dental procedures which are associated with production of aerosols such as ultrasonic scaling, use of airtor and micromotor should be used judiciously and if possible restricted to only emergency or urgent conditions. ¹
- The procedures not involving aerosols can be performed with lesser risk however they must also be restricted as per the Institute's policy.

- The procedures involving impression making should be deferred and restricted to only emergency patients.⁴
- Non-invasive procedures required for patients already referred from other departments for emergency care should be performed with extreme caution.

Procedures in Dental Operatory – for suspected or positive patients

- All the dental procedures should be deferred.
- If in case required as emergency and expected to produce aerosols such as ultrasonic scaling, use of airtor and micromotor should be performed with high vacuum suction. After completion of procedure, sterilization and disinfection of all surfaces, tubing etc in critical and semi critical zones.^{1,3}
- Procedures required as emergency and expected not to produce aerosols can be performed with extreme caution.
- Preprocedural mouthrinse with 0.2 % povidone-iodine is recommended to reduce the viral load.⁵
- Extraoral radiographs i.e. Panoramic radiograph or CBCT instead of intraoral imaging should be preferred to avoid gag reflex.

6.Guidelines for handling Biomedical Waste generated in Hospitals during diagnostics and treatment of COVID-19 suspected / confirmed patients⁵

1. Keep separate color coded bins/bags/containers and maintain proper segregation of waste as per existing rules.
2. As precaution double layered bags (using 2 bags) should be used for collection of waste from COVID-19 isolation wards so as to ensure adequate strength and prevent leakage.
3. Use a dedicated collection bin labelled as “COVID-19” to store COVID-19 waste and keep separately in temporary storage room prior to handing over to authorized staff.
4. Bags/containers used for collecting biomedical waste from COVID-19 wards, should be labelled as “COVID-19 Waste”. This marking would enable CBWTFs to identify the waste easily for priority treatment and disposal immediately upon the receipt.
5. Maintain separate record of waste generated from COVID-19 isolation wards/ICUs.
6. Use dedicated trolleys and collection bins in COVID -19 isolation wards/ICUs. A label “COVID-19 Waste” to be pasted on these items also.
7. The (inner and outer) surface of containers/bins/trolleys used for storage of COVID-19 waste should be disinfected with 1% sodium hypochlorite solution.
8. General waste not having contamination should be disposed as solid waste as per SWM Rules, 2016.

9. Depute dedicated sanitation workers separately for BMW and general solid waste so that waste can be collected and transferred timely to temporary waste storage area.
10. Guidelines followed for isolation wards/ICUs, as mentioned above should be applied suitably in case of Screening areas, Sample collection centres and Laboratories for COVID-19 suspected patients.
11. Sanitary Inspectors/Facility Managers Operator shall ensure regular sanitization of workers involved in handling and collection of biomedical waste.
12. Workers involved in handling and collection of COVID-19 biomedical waste shall be provided with adequate PPEs including three layer masks, splash proof aprons/gowns, nitrile gloves, gum boots and safety goggles.
13. Do not allow any worker showing symptoms of illness to work at the facility.

7. Precautions for Handling and disposal of Dead Bodies⁸

General Recommendations

Vaccination

Hepatitis B vaccination is recommended for all personnel who are likely to come into contact with dead bodies, such as health care worker, mortuary staff, funeral workers, and etc.

Personal hygienic measures and protective equipment

1. All staff should be trained in the prevention of infections. A high standard of personal hygiene should be adopted.
2. When handling of dead bodies:
 - a. Avoid direct contact with blood or body fluids from the dead body.
 - b. *Put on personal protective equipment (PPE) including* : Gloves, water resistant gown/ plastic apron over water repellent gown, and surgical mask. Use goggles or face shield to protect eyes, if there may be splashes.
 - c. Make sure any wounds, cuts and abrasions, are covered with waterproof bandages or dressings.
 - d. Do NOT smoke, drink or eat. Do NOT touch your eyes, mouth or nose.
 - e. Observe strict personal hygiene. Hand hygiene could be achieved by washing hands with liquid soap and water or proper use of alcohol-based hand rub.
 - f. Avoid sharps injury, both in the course of examination of dead body and afterwards in dealing with waste disposal and decontamination.
3. Remove personal protective equipment after handling of the dead body. Then, wash hands with liquid soap and water immediately

Accidental exposure to blood or body fluids

1. In case of per-cutaneous injury or muco-cutaneous exposure to blood or body fluids of the dead body, the injured or exposed areas should be washed with copious amount of water.
2. All incidents of percutaneous or mucocutaneous exposure should be reported to the supervisor. The injured person should immediately seek medical advice for proper wound care and post-exposure management

Recommendations for Health Care Worker

1. Staff should put on appropriate personal protective equipment before handling the dead body. Gloves, water resistant gown/ plastic apron over water repellent gown, and surgical mask. Use goggles or face shield to protect eyes, if there may be splashes.
2. All tubes, drains and catheters on the dead body should be removed.
3. Extreme caution should be exercised when removing intravenous catheters and other sharp devices. They should be directly disposed into a sharps container.
4. Wound drainage and needle puncture holes should be disinfected and dressed with impermeable material.
5. Secretions in oral and nasal orifices can be cleared by gentle suction if needed.
6. Oral, nasal and rectal orifices of the dead body have to be plugged to prevent leakage of body fluids.
7. The body should be cleaned and dried.
8. The dead body should be first placed in a robust and leak-proof transparent plastic bag of not less than 150 µm thick, which should be zippered closed. Pins are NOT to be used.
9. A second layer of cover is required. The bagged body should be either wrapped with a mortuary sheet or placed in an opaque body bag.
10. The outside of the body bag should be wiped with 1 in 4 diluted household bleach (mixing 1 part of 5.25% bleach with 4 parts of water) and allow to air dry.
11. Remove personal protective equipment after handling of the dead body. Then, perform hand hygiene immediately.

Environmental control

1. Items classified as clinical waste must be handled and disposed of properly according to the legal requirements.
2. All used linen should be handled with standard precautions. Used linen should be handled as little as possible with minimum agitation to prevent possible contamination of the person handling the linen and generation of potentially contaminated lint aerosols in the areas. Laundry bag should be securely tied up. Staff should follow their hospital guidelines on handling of soiled linen.
3. Used equipment should be autoclaved or decontaminated with disinfectant solutions in accordance with established disinfectant policy.
4. All surfaces which may be contaminated should be wiped with “1 in 49 diluted household bleach”* (mixing 1 part of 5.25% bleach with 49 parts of water), leave it for 15-30 minutes, and then rinse with water. Metal surfaces could be wiped with 70% alcohol.

5. Surfaces visibly contaminated with blood and body fluids should be wiped with “1 in 4 diluted household bleach”*(mixing 1 part of 5.25% bleach with 4 parts of water), leave it for 10 minutes, and then rinse with water.

* Bleach solution should be freshly diluted.

AUTOPSY

Autopsies on dead bodies which have died with COVID-19 expose staff to unwarranted risk and should generally not be performed. However, if autopsy is to be carried out because of special reasons, the following practices should be adopted:

- a) It should be performed by a pathologist using recommended barrier techniques and procedures to reduce the risk of infection.
- b) The number of people allowed in the autopsy room should be limited to those directly involved in the operation.
- c) After completion of examination and local disinfection of skin with “1 in 49 diluted household bleach” (mixing 1 part of 5.25% bleach with 49 parts of water), the dead body should be placed in a robust and leak-proof transparent bag of not less than 150 µm thick. The bagged body should be placed in another opaque bag and zippered closed.
- d) The outside of the dead body bags should be wiped with “1 in 4 diluted household bleach” (mixing 1 part of 5.25% bleach with 4 parts of water) and allow to air dry.
- e) The appropriate warning tag indicating Category 2 or Category 3 should be attached on the outside of the body bag.

Precautions Specific for dead bodies of COVID-19

- Viewing in funeral parlour and hygienic preparation are allowed.
- Embalming is NOT allowed.
- Cremation is advisable.

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