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**Dhulikhel Hospital, Kathmandu  
University Hospital**

**Interim Guidance for Infection  
Prevention and Control Guideline  
COVID-19 ERA 2020**

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## **PURPOSE OF THE GUIDELINES**

The purpose of this document is to help physicians, nurses, other healthcare workers and healthcare institutions to apply appropriate principles of Infection Prevention and Control while providing care in healthcare institutions for patients with suspected or proven COVID-19. COVID-19 (Coronavirus Infectious Disease 2019) is a respiratory tract infection caused by the beta coronavirus SARS CoV-2 (SARS coronavirus type-2). These guidelines are based on current knowledge in the available literature, expert consultations, and recommendations from WHO, CDC and other authorities. These guidelines are not meant to replace clinical judgment based on individual patient needs and do not exclude expert consultation and are subject to change based on new knowledge.

### **1 ISOLATION**

The purpose of isolation is to prevent the transmission of microorganisms from infected or colonized patients to other patients, hospital visitors, healthcare worker (HCWs), who may subsequently transmit them to other patients or become infected or colonized themselves. In health care setting, the Healthcare associated infections (HAIs) can occur through three mechanisms.

- Contact: direct skin to skin or indirect via contaminated surface
- Respiratory droplets larger than 5µm that are not suspended for long time in the air and usually travel a short distance of less than 1 meter
- Airborne transmission of particles less than 5µm that are not suspended for longer time and therefore travels long distances and infect susceptible host several meters away from the source.

## **2. INFECTION PREVENTION AND CONTROL PRECAUTIONS**

A two-tiered approach: standard precautions, which apply to all patients, and transmission-based precautions, which apply to patients with documented or suspected infection or colonization with certain microorganisms is implemented.

### **2.1 STANDARD PRECAUTIONS**

Standard infection control precautions include the basic measures such as hand hygiene, respiratory hygiene, appropriate environmental cleaning, proper waste management, etc. that should be used by all staff at all times for all patients. They are by far the most effective protection against COVID-19 infection, more so than contact and droplet transmission precautions. Standard precaution measures are the only measures that will protect from transmission from asymptomatic or pre-symptomatic carriers of SARS-CoV-2.

Healthcare facilities should ensure that their healthcare providers and other staff members have access to hand washing facilities with adequate clean water and soap, or given adequate supplies of alcohol-based hand sanitizers.

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Good respiratory and cough hygiene measures should be adopted by all staff, patients and visitors. These include cleaning hands using soap and water after coughing, sneezing, and wiping or blowing the nose, keeping hands away from eyes, mouth and nose.

## **2.2 TRANSMISSION BASED PRECAUTION**

Transmission-based precautions apply to selected patients based on a suspected or confirmed clinical syndrome, a specific diagnosis, or colonization or infection with epidemiologically important organisms. Transmission-based precautions are always implemented in conjunction with standard precautions. Three types of transmission-based precautions have been developed for the major modes of transmission of infectious agents in the health care setting—airborne, droplet, and contact. A few diseases (e.g., varicella, severe acute respiratory syndrome {SARS}) require more than one isolation category.

### **2.2.1 Contact precautions**

Contact precautions are intended to prevent transmission of infectious agents, including epidemiologically important microorganisms, which are spread by direct or indirect contact with the patient or the patient's environment. Contact precautions also apply where the presence of excessive wound drainage, fecal incontinence, or other discharges from the body suggest an increased potential for extensive environmental contamination and risk of transmission. A single-patient room is preferred for patients who require contact precautions. When a single-patient room is not available, consultation with infection control personnel is recommended to assess the various risks associated with other patient placement options (e.g., cohorting, keeping the patient with an existing roommate). In multi-patient rooms,  $\geq 3$  feet spatial separation between beds is advised to reduce the opportunities for inadvertent sharing of items between the infected/colonized patient and other patients. HCWs caring for patients on contact precautions wear a gown and gloves for all interactions that may involve contact with the patient or potentially contaminated areas in the patient's environment. Donning personal protective equipment (PPE) upon room entry and discarding before exiting the patient room is done to contain pathogens, especially those that have been implicated in transmission through environmental contamination (e.g., VRE, *C. difficile*, noroviruses and other intestinal tract pathogens; RSV).

### **2.2.2 Droplet precautions**

Droplet precautions are intended to prevent transmission of pathogens spread through close respiratory or mucous membrane contact with respiratory secretions. Because these pathogens do not remain infectious over long distances in a healthcare facility, special air handling and ventilation are not required to prevent droplet transmission. A single patient room is preferred for patients who require droplet precautions. When a single-patient room is not available, consult with infection control committee (IPCC) to assess the various risks associated with other patient placement options (e.g. cohorting, keeping the patient with an existing roommate). Spatial separation of  $\geq 3$  feet and drawing the curtain between patient

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beds is especially important for patients in multi-bed rooms with infections transmitted by the droplet route. Healthcare personnel wear a mask (a respirator is not necessary) for close contact with infectious patient; the mask is generally donned upon room entry. Patients on droplet precautions who must be transported outside of the room should wear a mask if tolerated and follow Respiratory Hygiene/Cough Etiquette.

### **2.2.3 Airborne precautions**

Airborne precautions prevent transmission of infectious agents that remain infectious over long distances when suspended in the air. The preferred placement for patients who require airborne precautions is in an airborne infection isolation room (AIIR) that is equipped with special air handling and ventilation capacity (i.e., monitored negative pressure relative to the surrounding area, 12 air exchanges per hour for new construction and renovation and 6 air exchanges per hour for existing facilities, air exhausted directly to the outside or re-circulated through High-efficiency particulate air {HEPA}filtration before return). In settings where airborne precautions cannot be implemented due to limited engineering resources, masking the patient, placing the patient in a private room with the door closed, and providing N95 or higher level respirators or masks if respirators are not available for HCWs will reduce the likelihood of airborne transmission. HCWs caring for patients on airborne precautions wear a mask or respirator, depending on the disease-specific that is donned prior to room entry. Whenever possible, non-immune HCWs should not care for patients with vaccine-preventable airborne diseases (e.g., measles, chickenpox, and smallpox).

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### **3 Roles and Responsibilities of HCWs working in Isolation Room**

#### **3.1 Infection Prevention and Control Officer (IPCO)**

1. Initiates the isolation protocol.
2. Makes necessary arrangements for preparation of isolation room.
  - Evacuation
  - Logistics
  - Personals
  - Communication
  - Patient Transfer
3. Makes necessary arrangements for transfer of samples to reference center.
4. Makes necessary arrangement of refresher training on infection prevention and control committee (IPCC) measures needed for isolation protocol to personal involved in the patient management.
5. Provide regular situation report in update meeting.
6. Co-ordinates with departments such as CSSD, maintenance and engineering, housekeeping, dietary, etc. regarding isolation practice.
7. Reviews and modifies (where necessary) the existing infection control policies with the help of IPC members.

#### **3.2 Clinical Focal Person**

The role of clinical department focal person will be as follows:

1. Cross check PPE supply.
2. Determine the level of safety precautions required for HCWs (Standard, Droplet, Airborne, and Contact).
3. Determine safety precautions required for investigations.
4. Communicate with the staff about the safety precautions.
5. Communicate with IPCO to inform level of safety precautions and PPE supply if needed.
6. Recheck isolation entry and exit protocol.
7. Evaluate the patient.
8. Handovers as and when necessary.

#### **3.3 Lineage Nurse**

The role of lineage nurse is as follows:

1. Checks and arranges required PPE supply.
2. Arranges necessary equipment for sending investigations with safety precautions.
3. Arranges necessary equipment for radiology, if needed.
4. Communicate with IPCO for PPE and other logistic supply for infection prevention.
5. Checks isolation entry and exit protocol along with clinical department focal person.
6. Manages safe disposal of waste.

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7. Manages and discuss food management.
  8. Instructs housekeeping for regular cleaning of the room.
  9. Hands over to lineage nurse of another shift, which will undergo through the checklist again.

### **3.4 Technical focal person – Lab**

Any designated person from the lab will take responsibility and in case of absence of designated person, anyone on duty will take responsibility. The role of technical focal person – lab is as follows:

1. Upon receive of information from IPCO, prepares according for the safety precautions.
2. Reports back to IPCO if PPE is deficient or absent.
3. Handover as and when necessary.

### **3.5 Technical focal person – Radiology**

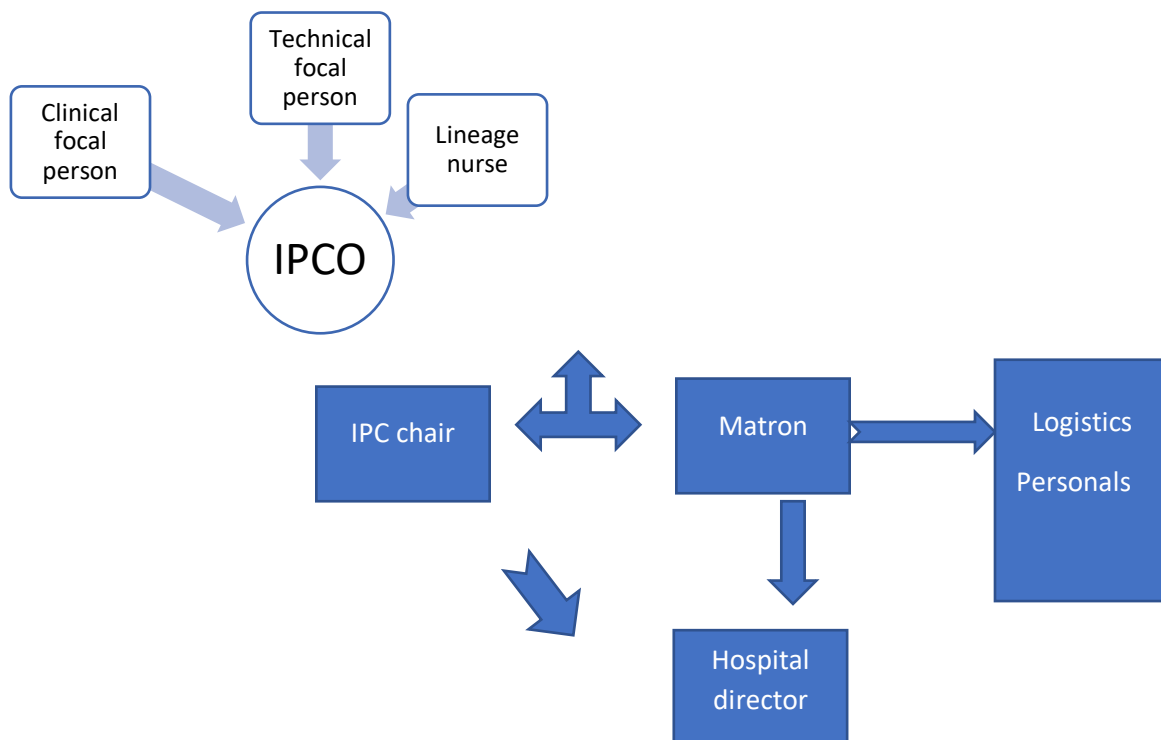
Any designated person from the radiology will take responsibility and in case of absence of designated person, anyone on duty will take responsibility. The role of technical focal person –radiology is as follows:

1. Upon receive of information from IPCO, prepares according for the safety precautions.
2. Checks isolation entry and exit protocol along with lineage nurse.
3. Uses appropriate safety precaution and perform x ray.
4. Brings out x-ray with adequate safety precaution.

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#### 4 Communication Matrix:

Once IPC is informed from the emergency on duty doctor for possible case needing isolation, the IPCO will lead to make necessary preparation for isolation room. The IPCO will communicate and coordinate with evacuating team and the receiving team of the admitted patient in the designated would be isolation room. Once the room is prepared, the IPCO will coordinate transfer and management of the isolated patient.



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## 4.1 Preparation of the isolation room or area

- Ensure that appropriate hand washing facilities and hand-hygiene supplies are available.
- Stock the sink area with suitable supplies for hand washing, and with alcohol-based hand rub, near the point of care and the room door.
- Ensure adequate room ventilation.
- Post signs on the door indicating that the space is an isolation area.
- Stock the PPE supply and linen outside the isolation room or area (e.g. in the change room). Setup a trolley outside the door to hold PPE. A checklist may be useful to ensure that all equipment is available.
- Place appropriate waste bags in a bin. If possible, use a touch-free bin. Ensure that used (i.e. dirty) bins remain inside the isolation rooms.
- Place a puncture-proof container for sharps disposal inside the isolation room or area.
- Keep the patient's personal belongings to a minimum. Keep water pitchers and cups, tissue wipes, and all items necessary for attending to personal hygiene, within the patient's reach.
- Dedicate non-critical patient-care equipment (e.g. stethoscope, thermometer, blood pressure cuff and sphygmomanometer) to the patient, if possible. Thoroughly clean and disinfect patient-care equipment that is required for use by other patients before use.
- Place an appropriate container with a lid outside the door for equipment that requires disinfection or sterilization.
- Keep adequate equipment required for cleaning or disinfection inside the isolation room or area, and ensure scrupulous daily cleaning of the isolation room or area.
- Set up a telephone or other method of communication in the isolation room or area to enable patients, family members or visitors to communicate with health-care workers. This may reduce the number of times the workers need to don PPE to enter the room or area.

\*\* Annexure 1: Check list of items needed for isolation room.

### 4.1.1 Items needed for isolation room

- Surgical scrubs
- Personal Protective Equipment:
  - Gloves: Small; Medium; Large
  - Masks: Surgical Mask; N95 mask; Particulate filter respirator
  - Gowns: Disposable full length Gowns



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- Boots: Small; Medium; Large
  - Face Shield
  - Goggles
  - Alcohol based hand rub (two)
  - Biohazard sign (large; two)
  - Zip lock bags (for lab specimens and for x-ray films)
  - Waste Management:
    - Doffing basket (Red Bucket)
    - Sharps bin (Red Bucket)
    - Needle disposal bin (Red Bucket)
    - Infectious bin (Red Bucket)
    - Biohazard bags (Red Bag)
  - Patient items for individual use:
    - Stethoscope
    - BP cuff
    - Thermometer
    - Pulse oximeter

#### **4.2 Health care worker in the isolation room**

Competent nursing staff able to handle critical case in both pediatric and adult management as per need will be made available by the management in coordination with nursing director. Individual department will select a clinician depending on which case is admitted in the isolation room. Housekeeping will provide the necessary staff for cleaning and waste management. When selecting such manpower, individual department will take into consideration about the health care workers status like pregnancy, immunomodulation disease or any underlying condition compromising their immune system.

\*Entry will be strictly restricted for any other individual.

#### **4.3 Entering the isolation room.**

##### **4.3.1 Donning**

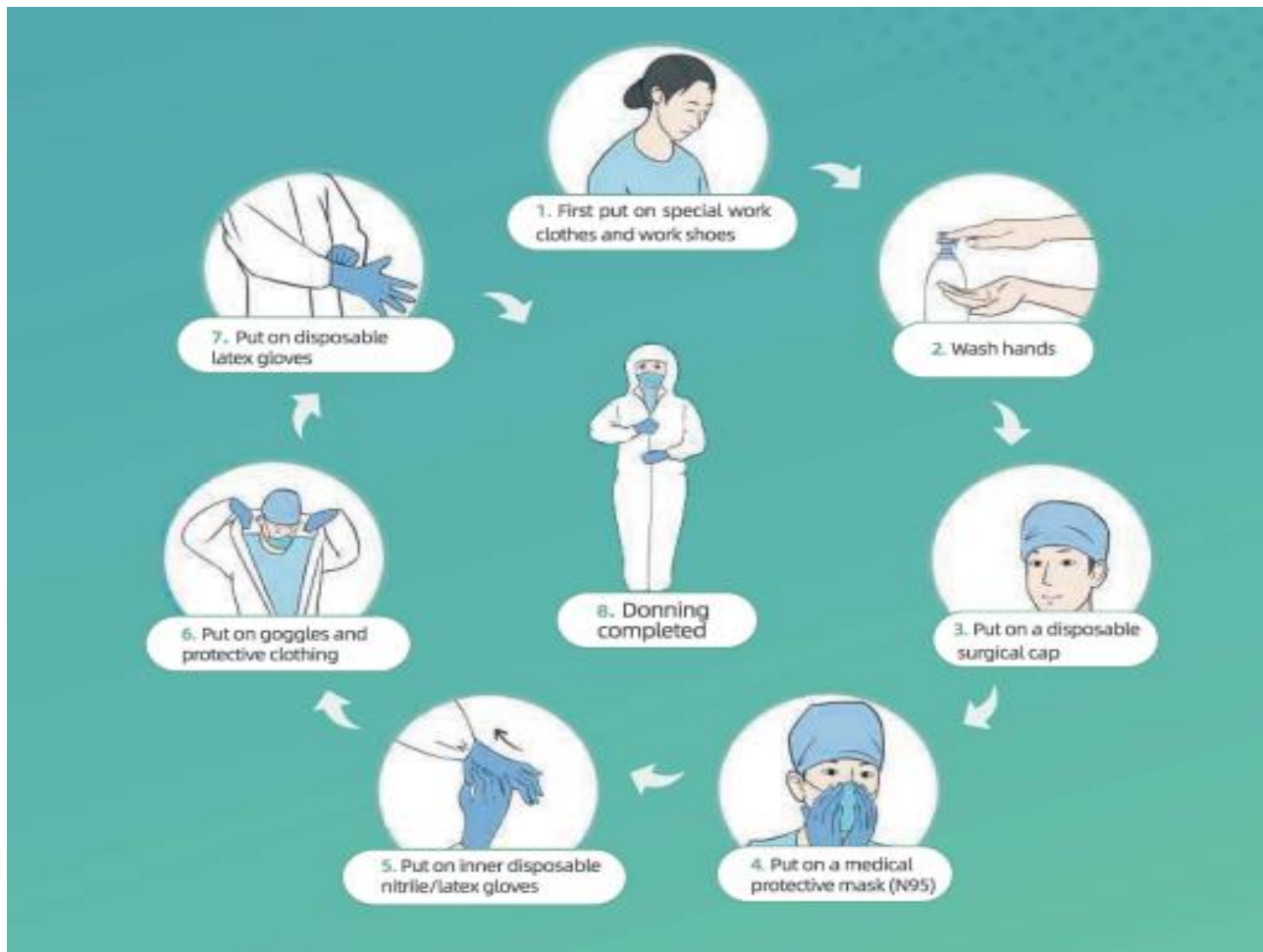
Donning is done outside the isolation ward. Use one of the medical people to verify successful compliance with the protocol (See Pic. 1).

1. **Engage Trained Observer:** The donning process is guided and supervised by a trained observer who confirms visually that all PPE is serviceable and has been donned successfully. No exposed clothing, skin or hair of the healthcare worker should be visible at the end of the donning process.
2. **Remove Personal Clothing and items before coming to isolation area:** Change into surgical scrubs (or disposable garments) and dedicated washable (plastic or rubber) footwear in a suitable, clean area. No personal items (e.g., jewelry including rings, watches, cell phones, pagers, pens) should be brought into patient room. Long hair should be tied back.

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3. **Inspect PPE Before Donning:** Visually inspect the PPE ensemble to be worn to ensure it is in serviceable condition, all required PPE and supplies are available, and the sizes selected are correct for the healthcare worker. The trained observer should review the donning sequence with the healthcare worker before donning begins and read it aloud during donning in a step-by-step fashion.
  4. **Put on Surgical cap:** Hair should be tighten and cover all the hair with surgical cap
  5. **Put on N95 Respirator:** Put on N95 respirator. Complete a user seal check.
  6. **Put on goggles:** Put on goggles
  7. **Put on foot Covers.** If a coverall without integrated socks is worn, foot cover should worn UNDER the pants leg of the coverall to prevent pooling of liquids between the coverall pants leg and upper band of boot. This step can be omitted if wearing a coverall with integrated socks.
  8. **Put on Inner Gloves:** Put on first pair of gloves.
  9. **Put on Gown or Coverall:** Put on gown *or* coverall. Ensure gown *or* coverall is large enough to allow unrestricted freedom of movement. Ensure cuffs of inner gloves are tucked under the sleeve of the gown *or* coverall.
  10. **Put on Outer Apron (if used):** Put on a disposable apron to provide an additional layer for the front of the body.
  11. **Put on boot:** Put on the boot of appropriate size
  12. **Put on Outer Gloves:** Put on second pair of gloves (with extended cuffs). Ensure the cuffs are pulled over the sleeves of the gown *or* coverall.
  13. **Put on Face Shield (if used):** Put full face shield over the N95 respirator and surgical cap to protect the eyes, as well as front and sides of the face.
  14. **Verify:** After completing the donning process, the trained observer should verify the integrity of the ensemble. The healthcare worker should be able to extend the arms, bend at the waist, and go through a range of motion sufficient for patient care delivery while all remaining correctly covered. A mirror in the room can be useful for the healthcare worker while donning PPE.
  15. **Label:** Label the name of the HCW on his/her back after donning PPE (Use paper tape and marker).

**\*\*Movement inside the isolation room should be kept to the minimum.**

**Picture 1: Guidance on donning personal protective equipment (PPE)**



#### **4.4 Exiting the isolation room**

The purpose of this step is to prepare for the removal of PPE. The doffing area should be separated into areas where early and later steps of doffing are conducted (e.g., separate chairs or ends of a bench). Before entering the PPE removal area, look for, clean, and disinfect visible contamination on the PPE. As a final step before doffing, disinfect whole PPE and outer-gloved hands with either Alcohol based disinfection, and allow to dry. Verify that the trained observer is available in the PPE removal area before entering and beginning the removal process. An assistant who is only assisting in doffing should wear the same PPE as the trained observer. If the doffing assistant is entering the patient's room (e.g. as a clinician), the assistant should wear the same PPE as other personnel entering the patient's room. The observer should not touch the person who is doffing and should not serve as the doffing assistant or "buddy." A mirror in the room can be useful for the healthcare worker while doffing PPE.

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#### 4.4.1 Doffing PPE

Doffing is done inside the isolation room (See Pic. 2).

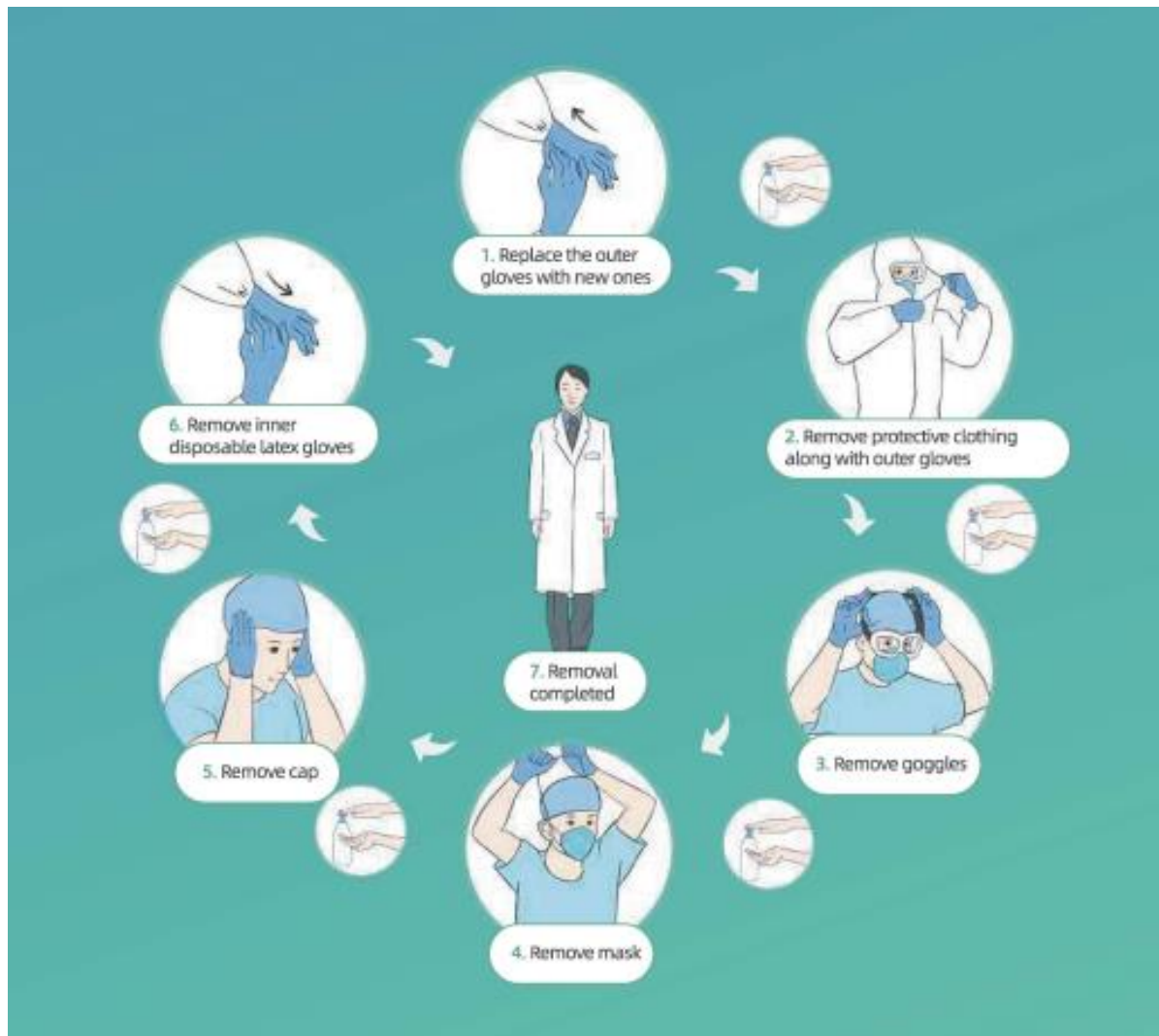
1. **Engage Trained Observer:** The doffing process should be supervised by the trained observer, who reads aloud each step of the procedure and confirms visually that the PPE has been removed properly. Before doffing PPE, the trained observer must remind healthcare workers to avoid reflexive actions that may put them at risk, such as touching their face. Post this instruction and repeat it verbally during doffing.
2. **Inspect:** Inspect the PPE to assess for visible contamination, cuts, or tears before starting to remove. If any PPE is visibly contaminated, then disinfect using an alcohol based hand rub.
3. **Disinfect Outer Gloves:** Disinfect outer-gloved hands with alcohol based hand rub.
4. **Replace Outer gloves with new one.**
5. **Remove Apron (if used):** Remove (e.g., by breaking or untying neck strap and releasing waist ties) and roll the apron away from you, containing the soiled outer surface as you roll; discard apron taking care to avoid contaminating gloves or other surfaces.
6. **Inspect:** After removing the apron, inspect the PPE ensemble for visible contamination or cuts or tears. If visibly contaminated, then clean and disinfect any affected areas by using an alcohol based disinfectant.
7. **Disinfect:** Disinfect outer-gloved hands with alcohol based hand rub.
8. **Remove Gown or Coverall along with boot along with outer gloves:** Remove and discard.
  - a. To remove coverall, tilt head back to reach zipper or fasteners. Unzip or unfasten coverall completely before rolling down and turning inside out. Avoid contact of scrubs with outer surface of coverall during removal, touching only the inside of the coverall.
  - b. Depending on gown design and location of fasteners, the healthcare worker can untie fasteners, have the doffing assistant or “buddy” unfasten the gown, or gently break fasteners. Avoid contact of scrubs or disposable garments with outer surface of gown during removal. Pull gown away from body, rolling inside out and touching only the inside of the gown.
9. **Inspect and Disinfect Inner Gloves:** Inspect the inner gloves’ outer surfaces for visible contamination, cuts, or tears. If an inner glove is visibly soiled, then disinfect the glove with alcohol based hand rub, remove the inner gloves, perform hand hygiene with alcohol based hand rub on bare hands, and don a new pair of gloves. If no visible contamination is identified on the inner gloves, then disinfect the inner-gloved hands with alcohol based hand rub. If a cut or tear is detected on an inner glove, immediately review occupational exposure risk per hospital protocol.
10. **Disinfect boot:** Use an alcohol based disinfectant to wipe down every external surface of the washable shoes.
11. **Disinfect Inner Gloves:** Disinfect inner gloves alcohol based hand rub.
12. **Remove Face Shield/Goggle:** Remove the full face shield by tilting the head slightly forward, grasping the rear strap and pulling it gently over the head and allowing the face

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shield to fall forward, and then discard. Care must be taken not to touch the face when removing the face shield. Avoid touching the front surface of the face shield.

13. **Disinfect Inner Gloves:** Disinfect inner gloves with alcohol based hand rub.
14. **Remove N95 Respirator:** Remove the N95 respirator by tilting the head slightly forward, grasping first the bottom tie or elastic strap, then the top tie or elastic strap, and remove without touching the front of the N95 respirator. Discard N95 respirator.
15. **Disinfect Inner Gloves:** Disinfect inner gloves with alcohol based hand rub.
16. **Remove Surgical cap:** Unfasten (if applicable) surgical hood, gently remove, and discard. The doffing assistant or “buddy” can assist with unfastening hood.
17. **Disinfect Inner Gloves:** Disinfect inner gloves with alcohol based hand rub
18. **Remove foot Covers:** Sitting on a clean surface (e.g., second clean chair or clean side of a bench) pull off foot covers, taking care not to contaminate scrubs pants legs.
19. **Disinfect and Remove Inner Gloves:** Disinfect inner-gloved hands with alcohol based hand rub. Remove and discard gloves taking care not to contaminate bare hands during removal process.
20. **Perform Hand Hygiene:** Perform hand hygiene with alcohol based hand rub
21. **Inspect:** Both the trained observer and the healthcare worker perform a final inspection of healthcare worker for contamination of the surgical scrubs or disposable garments. If contamination is identified, the garments should be carefully removed and the wearer should shower immediately. The trained observer should immediately inform IPCO.
22. **Scrubs:** Healthcare worker can leave PPE removal area wearing dedicated washable footwear and surgical scrubs or disposable garments, proceeding directly to showering area where these are removed.

**Picture 2: Guidance on doffing personal protective equipment (PPE)**



**Protocol Evaluation/Medical Assessment:** The IPCO should meet with the healthcare worker on a regular basis to review the patient care activities performed, identify any concerns about care protocols, and record healthcare worker's level of fatigue.

Samples or any items need to be transferred out of the isolation room will be collected and put inside a zip lock back. The zip lock back will be cleaned with 70% alcohol and transferred to designated services. The units will receive the zip lock back, clean the bag and then only take the items out of the bag. Portable X-ray machine, Ventilators or any other machinery will be cleaned after every entry and exit of the isolation room.

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## 4.5 CLEANING OF ISOLATION ROOM

It is well established that pathogens can survive in healthcare environments for long periods of time.

Cleaning and disinfecting non-critical surfaces in patient-care areas are part of Standard Precautions. In general, these procedures do not need to be changed for patients on Transmission-Based Precautions. The cleaning and disinfection of all patient-care areas is important for frequently touched surfaces, especially those closest to the patient, that are most likely to be contaminated (e.g., bedrails, bedside tables, commodes, doorknobs, sinks, surfaces and equipment in close proximity to the patient). The frequency or intensity of cleaning may need to change based on the patient's level of hygiene and the degree of environmental contamination and for certain for infectious agents whose reservoir is the intestinal tract. Adherence should be monitored and reinforced to promote consistent and correct cleaning is performed. EPA-registered disinfectants or detergents/disinfectants that best meet the overall needs of the healthcare facility for routine cleaning and disinfection should be selected. In general, use of the existing facility detergent/disinfectant according to the manufacturer's recommendations for amount, dilution, and contact time is sufficient to remove pathogens from surfaces of rooms where colonized or infected individuals were housed. This includes those pathogens that are resistant to multiple classes of antimicrobial agents (e.g., *C. difficile*, VRE, MRSA, MDR-GNB). Most often, environmental reservoirs of pathogens during outbreaks are related to a failure to follow recommended procedures for cleaning and disinfection rather than the specific cleaning and disinfectant agents used.

### 4.5.1 Evaluating Environmental Hygiene

- Direct Practice Observation
  - Covert monitoring of disinfection cleaning can provide an objective assessment of individual ES staff performance and compliance with cleaning protocols.
- Swab Cultures
  - Swab culture from high touch area from an isolation room before and after cleaning procedure is to be sent.
  - Room is to be made available for function once the report from microbiology lab confirms the efficacy of the cleaning procedures.
- Fluorescent Markers if available.
- ATP Bioluminescence if available.

### 4.5.2 Environmental Cleaning in Isolation Ward

#### 4.5.2.1 Disinfection for Floor and Walls

- Visible pollutants shall be completely removed before disinfection and handled in accordance with disposal procedures of blood and bodily fluid spills;
- Disinfect the floor and walls with 0.4 % virex Solution or 1:10 bleach solution (which contains 0.5% chlorine) through floor mopping or wiping;

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- Make sure that disinfection is conducted for at least 30 minutes;
  - Carry out disinfection three times a day and repeat the procedure at any time when there is contamination.

#### ***3.5.2.2 Disinfection of used items/surfaces***

- Visible pollutants should be completely removed before disinfection and handled in accordance with disposal procedures of blood and bodily fluid spills;
- Wipe the surfaces of objects with 0.4 % virex solution or 1:10 bleach solution (which contains 0.5% chlorine). Wait for 30 minutes and then rinse with clean water. Perform disinfection procedure three times a day (repeat at any time when contamination is suspected);
- Wipe cleaner regions first, then more contaminated regions: first wipe the object surfaces that are not frequently touched, and then wipe the object surfaces that are frequently touched (Once an object surface is wiped clean, replace the used wipe with a new one).

#### ***3.5.2.3 Waste Disposal***

- All waste generated from suspected or confirmed patients shall be disposed of as medical waste;
- Put the medical waste into a double-layer medical waste bag, seal the bag with cable ties in a gooseneck fashion and spray the bag with 1:10 bleach solution (which contains 0.5% chlorine);
- Put sharp objects into a special plastic box, seal the box and spray the box with 1:10 bleach solution (which contains 0.5% chlorine);
- Put the bagged waste into a medical waste transfer box, attach a special infection label, fully enclose the box and transfer it;
- Transfer the waste to a temporary storage point for medical waste along a specified route at a fixed time point and store the waste separately at a fixed location;
- The medical waste shall be collected and disposed of by an approved medical waste disposal provider.



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#### **3.5.2.4 Linens Management**

No special procedures are required; linen is categorized as ‘used’ or ‘infectious’. All linens used in the direct care of patients with suspected and confirmed cases should be managed as ‘infectious’ linen. Linen must be handled, transported and processed in a manner that prevents exposure to the skin and mucous membranes of staff, contamination of their clothing and the environment.

\*Disposable gloves and an apron should be worn when handling infectious linen.

All linen should be handled inside the patient room/cohort area. A laundry receptacle should be available as close as possible to the point of use for immediate linen deposit.

##### **Collection methods**

- First, pack the linens into a disposable water-soluble plastic bag and seal the bag;
- Then, pack this bag into another plastic bag, seal the bag with cable ties in a knot;
- Attach a special infection label and the department name. Send the bag to the laundry department.

##### **Storage and washing**

- Infectious linens should be separated from other linens and washed in a dedicated washing machine washed with warm water at 60-90<sup>0</sup>C (140–194<sup>0</sup>F) with laundry detergent. if possible;
- If machine washing is not an option, laundry should be soaked in water and soap in a large drum using a stick to stir, while taking precautions to avoid splashing. Then the drum should be emptied and the laundry soaked in 0.05% chlorine or for 30 minutes. The linens should finally be rinsed with clean water and fully dried in sunlight.

##### **Disinfection of transport tools**

- Special transport tools should be used specifically for transporting infectious linens;
- The tools shall be disinfected immediately each time after being used for transporting infectious linens;
- The transport tools should be wiped with 0.4% virex solution or 1:10 bleach solution (which contains 0.5% chlorine). Leave disinfectant for 30 minutes before wiping the tools clean with clean water.

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## Checklists

### Clinical focal person

S.N.	Action	Done
1	Cross check PPE supply	
2	Determine the level of safety precaution required for health care worker (Standard, Droplet, Airborne, Contact)	
3	Determine safety precaution required for investigation	
4	Communicate with the staff about the safety precaution	
5	Communicate with IPCO to inform level of safety precaution and PPE supply if needed	
6	Recheck isolation entry and exit protocol	
7	Evaluate the patient	
8	Handovers as and when necessary	

### Lineage nurse

S.N.	Action	Done
1	Communicates with clinical focal person to identify the level of safety precaution required for health care worker	
2	Checks and arranges required PPE supply	
3	Arranges necessary equipment for sending investigations with safety precaution	
4	Arranges necessary equipment for radiology, if needed	
5	Communicate with IPCO for PPE and other logistic supply for infection prevention	
6	Checks isolation entry and exit protocol along with clinical department focal person	
7	Manages safe disposal of waste	
8	Manages and discuss food	
9	Hands over to lineage nurse of another shift, which will undergo through the checklist again.	

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**Technical focal person lab**

S.N.	Action	Done
1	Upon receive of information from IPCO, prepares according for the safety precaution	
2	Reports back to IPCO if PPE is deficient or absent	
3	Handovers as and when necessary.	

**Technical focal person - Radiology**

S.N.	Action	Done
1	Upon receive of information from IPCO, prepares according for the safety precaution	
2	Checks isolation entry and exit protocol along with lineage nurse	
3	Uses appropriate safety precaution and perform x ray.	
4	Brings out x ray with adequate safety precaution.	

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### Donning

S.N.	Action	Done
1	Engage Trained Observer:	
2	Remove Personal Clothing and Items:	
3.	Wash Hand	
4.	Put on disposable surgical cap	
5	Wear mask or N95	
6	Wear goggles (if used)	
7	Wear Foot Cover	
8	Wear Inner Gloves	
9	Inspect PPE Before Donning	
10	Wear protective cloths	
11	Wear Boot	
12	Wear Outer Gloves	
13	Verify	
14	Label	

Donning by:

Checked by:

### Doffing

S.N.	Action	Done
1	Engage Trained Observer:	
2	Inspect	
3	Disinfect Outer Gloves	
4	Replace the outer gloves with new one	
5	Remove Protective Cloth along with boot and Outer gloves	
6	Put the boot in disinfection solution	
7	Disinfect Inner Gloves	
8	Remove goggles (if used)	
9	Disinfect Inner Gloves	
10	Remove mask	
11	Disinfect Inner Gloves	
12	Remove surgical Cap	
13	Disinfect Inner Gloves	
14	Remove Foot cover and wear slipper	
15	Disinfect Inner Gloves	
16	Remove Inner Gloves	
17	Disinfect with hand sanitizer	
18	Perform Hand Hygiene	

Doffing by:

Checked by:

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**Performing X-ray**

S.N.	Action	Done
1	Engage Trained Observer:	
2	Follow the Donning protocol	
3	Call patient for the X-ray in room	
4	Perform X-ray	
5.	Disinfect the Area in between the Patient or before leaving room	
6.	Follow the Doffing protocol	
7	Perform Hand Hygiene	

**Collecting specimen for investigation**

S.N.	Action	Done
1	Draw the blood put it in a container and put the cap	
2	Put the container in vessel containing spirit	
3	Disinfect and Change Outer Gloves	
4	Open zip lock bag	
5	Disinfect Outer Gloves	
6	Take container out of the vessel containing spirit and put it in zip lock bag	
7	Disinfect Outer Gloves	
8	If going out follow steps of doffing, if working inside put second gloves	

**Removing sample from Zip lock bag in lab**

S.N.	Action	Done
1	Wear gloves	
2	Open zip lock bag	
3	Take out container	
4	Throw zip lock bag	
5	Disinfect Gloves	
6	Perform the test	

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## **Infection Prevention and Control**

### **Safety Precautions**

Standard Precautions for all patients includes:

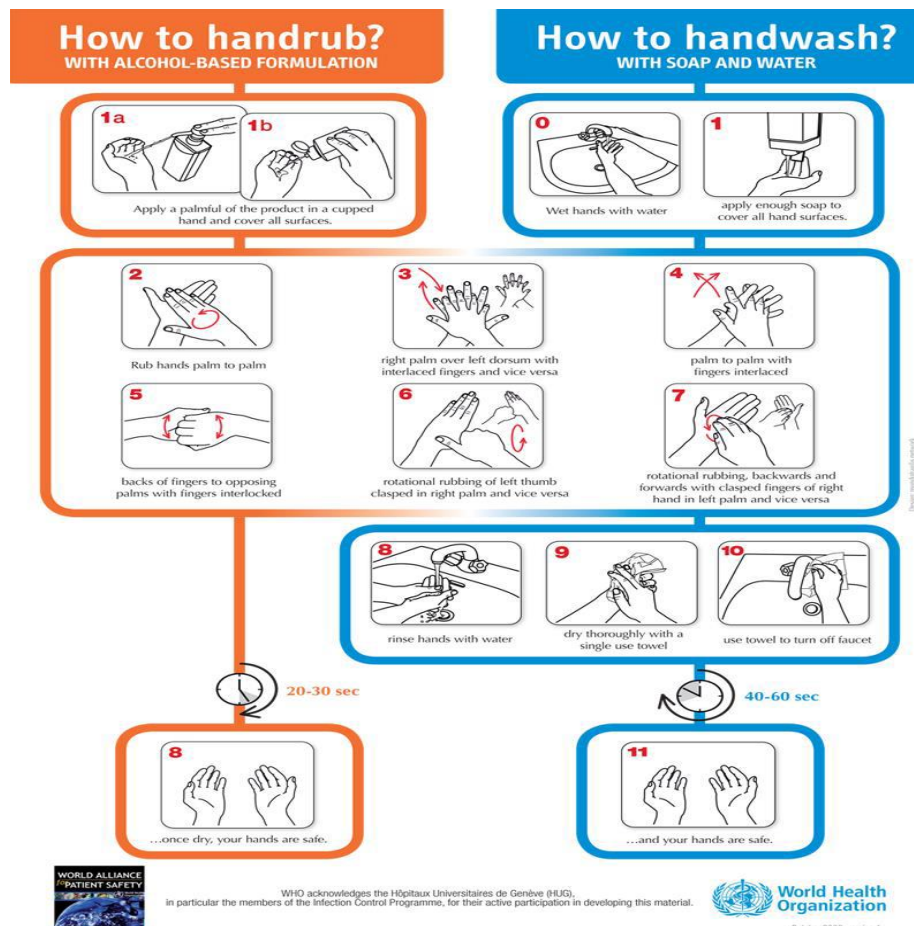
- hand hygiene
- appropriate personal protective equipment (PPE)
- gloves
- facial protection (eyes, nose, and mouth)
- gown
- respiratory hygiene and cough etiquette
- prevention (and management) of injuries from sharp instruments
- environmental cleaning
- appropriate handling of contaminated linens
- waste disposal
- Patient care equipment.

The specific recommendations are as follows:

<b>At triage</b>	<ul style="list-style-type: none"><li>• Give suspect patient a medical mask and direct patient to the screening desk /isolation room.</li><li>• Instruct all patients to cover nose and mouth during coughing or sneezing with tissue or flexed elbow for others.</li><li>• Perform hand hygiene after contact with respiratory secretions.</li></ul>
<b>Apply droplet precautions</b>	<ul style="list-style-type: none"><li>• Use a medical mask if working within 1-2 meters of the patient.</li><li>• Place patients in single rooms, or group together those with the same etiological diagnosis.</li><li>• Use eye protection (face-mask or goggles)</li><li>• Limit patient movement within the institution and ensure that patients wear medical masks when outside their rooms</li></ul>
<b>Apply contact precautions</b>	<ul style="list-style-type: none"><li>• Use PPE (medical mask, eye protection, gloves and gown) when entering room and remove PPE when leaving.</li><li>• Use either disposable or dedicated equipment (e.g. stethoscopes, blood pressure cuffs and thermometers).</li><li>• If equipment needs to be shared among patients, clean and disinfect between each patient use.</li><li>• Ensure that health care workers refrain from touching their eyes, nose, and mouth with potentially contaminated gloved or ungloved hands.</li><li>• Avoid contaminating environmental surfaces that are not directly</li></ul>

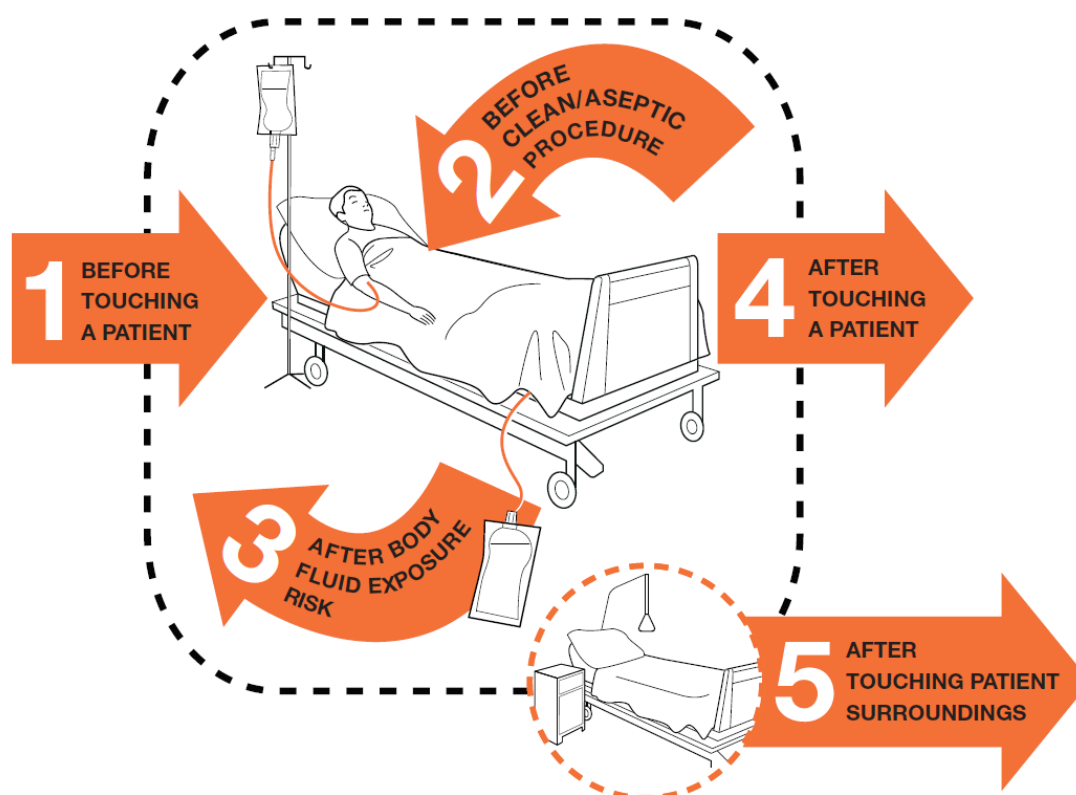
	<p>related to patient care (e.g. door handles and light switches).</p> <ul style="list-style-type: none"> <li>• Ensure adequate room ventilation.</li> <li>• Avoid movement of patients or transport.</li> <li>• Perform hand hygiene</li> </ul>
<b>Apply airborne precautions when performing an aerosol generating procedure</b>	<ul style="list-style-type: none"> <li>• Ensure that healthcare workers performing aerosol-generating procedures (i.e. open suctioning of respiratory tract, intubation, bronchoscopy, cardiopulmonary resuscitation) use PPE, including gloves, long-sleeved gowns, eye protection, and fit-tested particulate respirators (N95 or equivalent, or higher level of protection).</li> <li>• Avoid the presence of unnecessary individuals in the room.</li> </ul>

## Annex 1: How to Perform Hand Hygiene



## Annex 2: Your 5 Moments for Hand Hygiene

# Your 5 Moments for Hand Hygiene



<b>1</b>	<b>BEFORE TOUCHING A PATIENT</b>	<b>WHEN?</b>	Clean your hands before touching a patient when approaching him/her.
		<b>WHY?</b>	To protect the patient against harmful germs carried on your hands.
<b>2</b>	<b>BEFORE CLEAN/ASEPTIC PROCEDURE</b>	<b>WHEN?</b>	Clean your hands immediately before performing a clean/aseptic procedure.
		<b>WHY?</b>	To protect the patient against harmful germs, including the patient's own, from entering his/her body.
<b>3</b>	<b>AFTER BODY FLUID EXPOSURE RISK</b>	<b>WHEN?</b>	Clean your hands immediately after an exposure risk to body fluids (and after glove removal).
		<b>WHY?</b>	To protect yourself and the health-care environment from harmful patient germs.
<b>4</b>	<b>AFTER TOUCHING A PATIENT</b>	<b>WHEN?</b>	Clean your hands after touching a patient and her/his immediate surroundings, when leaving the patient's side.
		<b>WHY?</b>	To protect yourself and the health-care environment from harmful patient germs.
<b>5</b>	<b>AFTER TOUCHING PATIENT SURROUNDINGS</b>	<b>WHEN?</b>	Clean your hands after touching any object or furniture in the patient's immediate surroundings, when leaving – even if the patient has not been touched.
		<b>WHY?</b>	To protect yourself and the health-care environment from harmful patient germs.



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