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MODULE 1

Donning & Doffing of Personal Protective Equipment (PPE)







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Introduction

- ► The corona virus infection is highly contagious infection. Based on the available evidence, the COVID-19 virus is transmitted between people through close contact and droplets, not by airborne transmission. The people most at risk of infection are those who are in close contact with a COVID-19 patient or who care for COVID-19 patients. Hence, preventive and mitigation measures are key.
- ▶ Precautions to be implemented by health care workers caring for patients with COVID-19 apart from the community norms of social distancing and hand sanitization, include using PPE appropriately; this involves selecting proper PPE and being trained in how to put on, remove, and disposal¹
- ▶ PPE is only one effective measure, as described in WHO's Infection prevention & control of epidemicand pandemic-prone acute respiratory infections like the present scenario in health care facility¹







Healthcare personnel

- ► All medical staff caring for patients with suspected or confirmed COVID-19 should use PPE. Before caring for patients with suspected or confirmed COVID-19 all medical staff should receive comprehensive training and should adhere to proper donning and doffing of PPE.¹
- More than one donning & doffing methods may be acceptable.
- Training & practice using healthcare facilities and procedures is important.













- Designing & layout of donning & doffing area is important for safety of health care workers
- ▶ Ideally donning & doffing area should be two different places near to patient's room. But in some hospital it will be not possible due to lack of space. Following information to be consider while defining donning & doffing area







- In doffing area by marking the doffing spot that indicates the location to stand during doffing, providing a built-in balance aid within reach of the defined doffing spot, and presence of mirror for self monitoring and self-inspection in donning & doffing area will be useful.
- One or two persons only at one time.
- ► Colored demarcation on the floor to signify the zones and different levels of contamination risk: red, contaminated; yellow, likely contaminated; and green, clean will help health worker.







- The doffing area should have unidirectional flow from contaminated to cleaner areas to the outside of the patient room in a continuous forward motion.
- ► Prepare wall poster of donning & doffing methods
- Instruction chart regarding bio medical waste requires in doffing area.
- ► Trained assistant for donning & doffing











Before caring for patients with suspected or confirmed COVID 19 patients all medical personnel should receive comprehensive training and adhere to proper donning and doffing of PPE. There various methods of donning and doffing methods available²





Before Donning.....





Before donning



Remove white coat/extra clothing, watch, jewelry, personal items. Leave mobile phone outside

- ▶ If you wear glasses, clean them. Wear after donning surgical/N95 mask
- Drink enough water; use the toilet before donning
- Shave off your beard (mask will not fit well otherwise)
- 1. **Identify and gather the appropriate PPE to don.** Based on training, make sure that the choice of gown size is correct.²
- 2. Inspect PPE: Check for tears.
- 3. Perform proper hand hygiene using a hand sanitizer.²
- 4. Wear Head cap then Shoe covers, Sit down if necessary
- 5. Wear inner gloves.







Before donning

- ▶ Wear the NIOSH-approved N95 filtering face piece or higher respirators. If a respirator is not available use a facemask. If the respirator has a nosepiece, it should not be bent or tented and should be fitted to the nose using both hands. Respirator or facemask should not be worn under chin or stored in scrubs pocket between patients.²
- ▶ **Respirator:** The top strap of the respirator should be placed on crown of head and the bottom strap on the base of neck. It is important to perform a user seal check once the respirator is donned.²
- ► Facemask: The top tie of the mask should be secured on crown of head and the bottom tie on the base of neck. If the mask has loops, they should be hooked appropriately around the ears.²







Before donning

- ► Wear face shield or goggles. Face shields give full face protection. Goggles also provide protection for eyes; however, fogging is common.²
- ▶ Hood & zip up the gown
- ▶ Perform proper hand hygiene before wearing gloves. Gloves should cover the cuff of the isolation gown.²
- Healthcare personnel may now go in the patient room.²







6.
GLOVES
SECOND
PAIR

SHOE COVER

> 2. GLOVES 1st PAIR

-

Donning

3. GOWN/C OVERALL

5.
GOGGLES /
FACE
SHIELD

4. N 95 MASK

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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

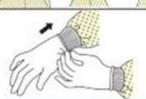
3. GOGGLES OR FACE SHIELD

· Place over face and eyes and adjust to fit



4. GLOVES

· Extend to cover wrist of isolation gown









Doffing of Personal Protective Equipment

- ▶ Removal of PPE is a complex procedure, with studies showing that there are high rates of doffing errors even with basic PPE, and that self-perceived proficiency correlates poorly with correct use.
- ► However, contamination is more likely to occur when incorrect technique is noted. Ensuring safe practices for high-risk, high-potential exposure scenarios, to minimize risks of contamination therefore requires the user to be well trained and with proven competence, as well as using safe PPE components.
- It is observed most common area which gets infected during patient examination is our fingers, palm, arm wrist & face so protection & disinfection is more important for this part.







After Donning Doffing







How to Take Off (Doffing) PPE Gear:

More than one doffing method may be acceptable. **Training & practice** using your healthcare facility's procedure is critical.

Below is one example of doffing²

- ▶ Remove outer gloves. Make sure that removal of gloves does not cause additional contamination of hands. Gloves can be removed using the glove-in-glove technique or the bird beak technique²
- ▶ Remove gown. Untie all the ties avoiding a forceful movement. Reach up to the shoulders and carefully remove the gown down and away from body. Dispose the gown in a trash container²

The other preferred method for doffing a disposable gown and gloves is, to break the ties at the neck by pulling on the upper front portion of the gown with the hands still gloved, balling or rolling in the contaminated surfaces, & pulling the gloves off inside-out as the hands are withdrawn from the gown's sleeves. The gown & gloves can then be placed in a disposal receptacle together.







How to Take Off (Doffing) PPE Gear:

- Remove Shoe covers Hold by the top edge
- Perform proper hand hygiene²
- Remove face shield or goggles. Carefully remove face shield or goggles by grabbing the strap and pulling upwards and away from head. Do not touch the front of face shield or goggles
- Remove inner gloves & hand hygiene







How to Take Off (Doffing) PPE Gear:

- ▶ <u>Remove & discard respirator</u> (or facemask if used instead of respirator). Do not touch the front of the respirator or facemask.*
 - ▶ **Respirator:** Remove the bottom strap by touching only the strap and bring it carefully over the head. Grasp the top strap and bring it carefully over the head, and then pull the respirator away from the face without touching the front of the respirator.
 - ► Facemask: Carefully untie (or unhook from the ears) and pull away from face without touching the front.
 - ▶ Perform hand hygiene after removing the respirator/facemask and before putting it on again.







REMOVE SHOE **COVER**

2. **GLOVES** 1st PAIR

Doffing

GOGGLES / **FACE**

SHIELD

3. **REMOVE GOWN**

6. **REMOVE** n-95 **MASK**

5. **REMOVE**

2nd PAIR **OF GLOVES**

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SEQUENCE FOR REMOVING PERSONAL PROTECTIVE EQUIPMENT (PPE)

Except for respirator, remove PPE at doorway or in anteroom. Remove respirator after leaving patient room and closing door.

1. GLOVES

- · Outside of gloves is contaminated!
- · Grasp outside of glove with opposite gloved hand;
- · Hold removed glove in gloved hand
- · Slide fingers of ungloved hand under remaining glove at wrist
- · Peel glove off over first glovet
- · Discard gloves in waste container

2. GOGGLES OR FACE SHIELD

- · Outside of goggles or face shield is contaminated!
- · To remove, handle by head band or ear pieces
- · Place in designated receptacle for reprocessing or in waste container

3. GOWN

- · Gown front and sleeves are contaminated!
- Unfasten ties
- · Pull away from neck and shoulders, touching inside of gown only
- · Turn gown inside out
- · Fold or roll into a bundle and discard

4. MASK OR RESPIRATOR

- · Front of mask/respirator is contaminated - DO NOT TOUCH!
- · Grasp bottom, then top ties or elastics and remove
- Discard in waste container



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















REMEMBER

- Do not move out of respective COVID area
- ▶ PPE must remain in place and be worn correctly for the duration of work in potentially contaminated areas. PPE should not be adjusted (e.g., retying gown, adjusting respirator/facemask) during patient care.
- ▶ PPE must be removed slowly and deliberately in a sequence that prevents self-contamination.
- ▶ Doffing to be done in appropriate area designated ir the same
- ▶ Discard PPE in appropriate bins for safer disposal or reuse a necessary.
- Perform thorough hand hygiene after complete doffing.







How to Handrub?

RUB HANDS FOR HAND HYGIENE! WASH HANDS WHEN VISIBLY SOILED

Duration of the entire procedure: 20-30 seconds







Rub hands palm to palm;





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



Palm to palm with fingers interfaced;



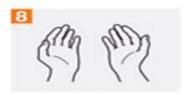
Backs of fingers to opposing palms with fingers interlocked:



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



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



Once dry, your hands are safe.



Patient Safety

SAVE LIVES Clean Your Hands







References.....

- Rational use of personal protective equipment for coronavirus disease (COVID-19): interim guidance
- ► CDC guideline for personal protective equipment :https://www.cdc.gov/coronavirus/2019-ncov/hcp/using-ppe.html.







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