



PGIMER SEVERE ACUTE RESPIRATORY ILLNESS PROTOCOL

SARI PROTOCOL

Abstract

A Working manual or a handguide for all the health care workers in SARI area
PGIMER, Chandigarh

TEAM EMERGENCY

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Introduction

Coronavirus disease (COVID-19) is an infectious disease caused by coronavirus. Most people infected with the COVID-19 virus will experience mild to moderate respiratory illness and recover without requiring special treatment. Older people and those with underlying medical problems like cardiovascular disease, diabetes, chronic respiratory disease, and cancer are more likely to develop severe illness.

The best way to prevent and slow down transmission is to be well informed about the COVID-19 virus, the disease it causes, and how it spreads. Protect yourself and others from infection by washing your hands or using an alcohol-based rub frequently and not touching your face.

The COVID-19 virus spreads primarily through droplets of saliva or discharge from the nose when an infected person coughs or sneezes, so it's essential that you also practice respiratory etiquette (for example, by coughing into a flexed elbow). At this time, there are no specific vaccines or treatments for COVID-19. However, many ongoing clinical trials are evaluating potential therapies.

Any patient coming with severe acute respiratory infection should be screened for COVID 19 according to the national guidelines. We would be having difficulty in screening the patients with no travel or contact history. So we have established Severe Acute Respiratory Infection ward (SARI ward) which we would admit the patients according to PGI SARI Scoring Scale (PGI SSS) and test for common etiology of acute viral pneumonias.

This document would be covering the basic working module of SARI ward at Post Graduate Institute of Medical Education and Research, Chandigarh.

Purpose and scope of this document

This document provides the basic working plan of the screening and Severe Acute Respiratory Infection ward areas in the COVID19 pandemic period at Post Graduate Institute of Medical Education and Research, Chandigarh.

The document would help the health care workers in the screening area and SARI ward of Post Graduate Institute of Medical Education and Research, Chandigarh.

The document provides the

- The basic plan of the working area
- Instructions regarding the transfer of patient
- Directions to the health care worker for personal protection

OUR TEAM

Each team comprises of the following Health Care workers, and they would be working in 3 different shifts



Shifts

Each shift would have

- One Faculty
- One Senior Resident
- One Junior Resident
- Two Nursing officers
- Two Health Assistants
- One Sanitary attendant

Shift timings

- Morning 8am-2pm
- Evening 2pm-8pm
- Night 8pm-8am

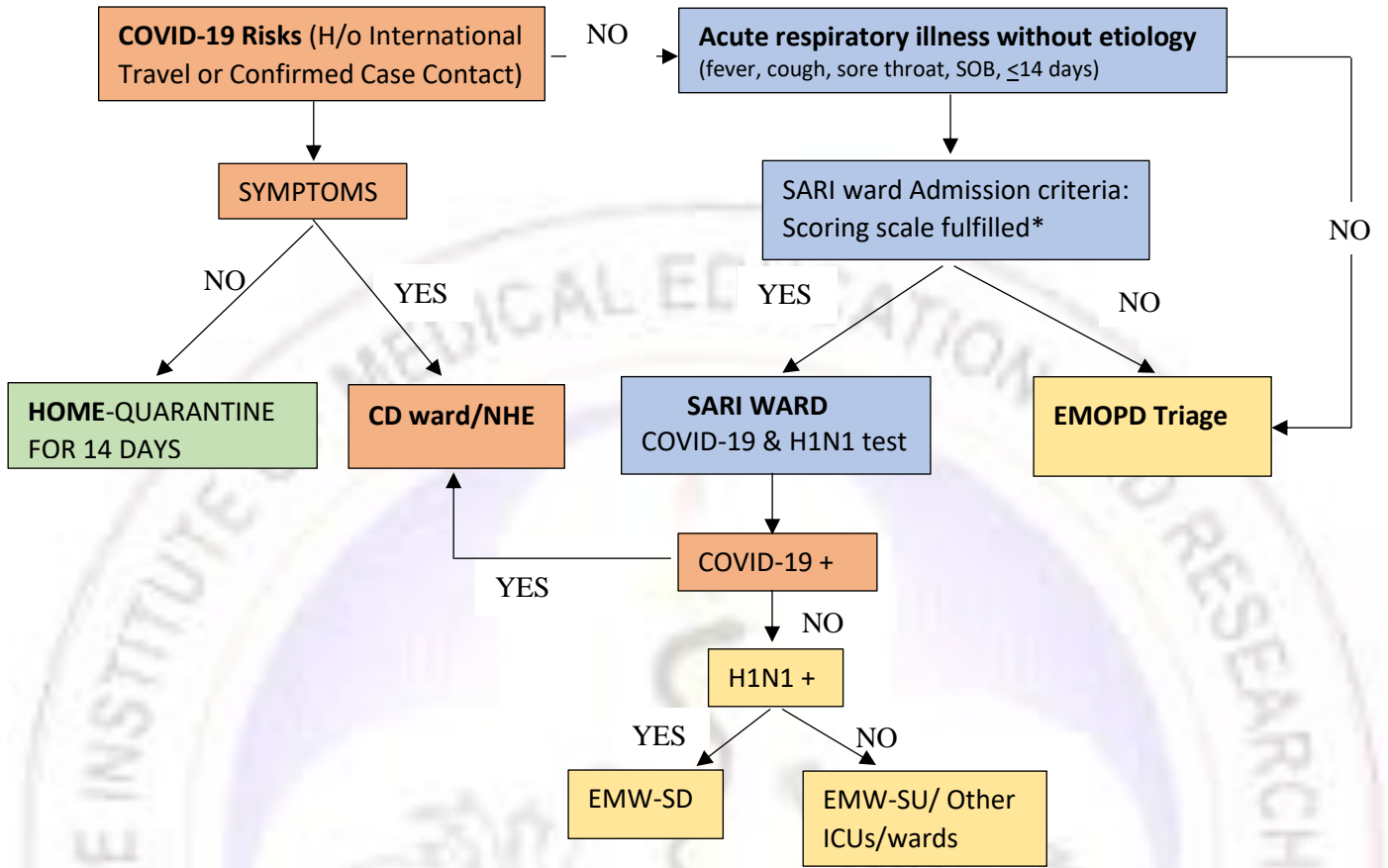
When to suspect COVID? (according to national guidelines)

- All symptomatic individuals who have undertaken international travel in the last 14 days
or
- All symptomatic contacts of laboratory confirmed cases
or
- All symptomatic healthcare personnel (HCP)
or
- All hospitalized patients with severe acute respiratory illness (SARI) (fever AND cough and/or shortness of breath)
or
- Asymptomatic direct and high-risk contacts of a confirmed case (should be tested once between day 5 and day 14 after contact)

Symptomatic refers to fever/cough/shortness of breath.

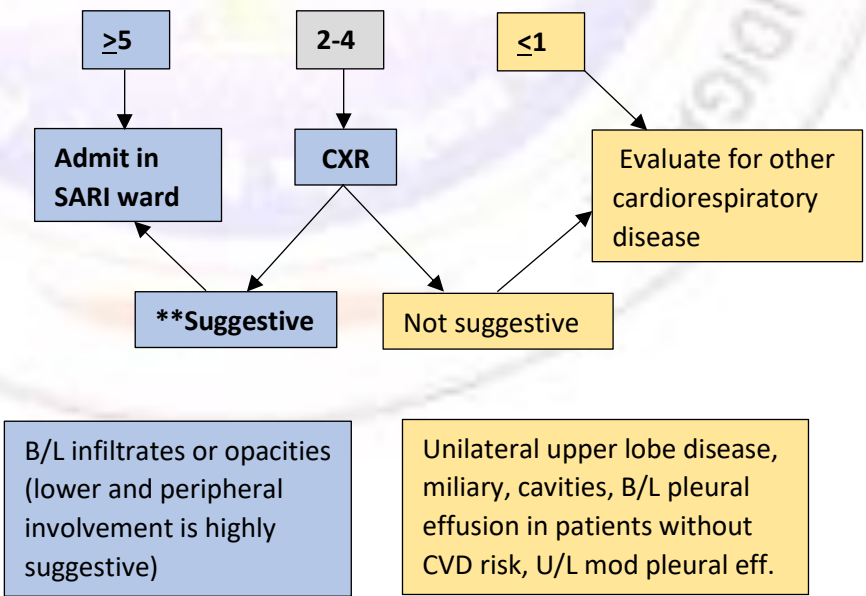
Direct and high-risk contacts include those who live in the same household with a confirmed case and HCP who examined a confirmed case.

Flow of Suspected Covid19 through Screening OPDs to SARI ward



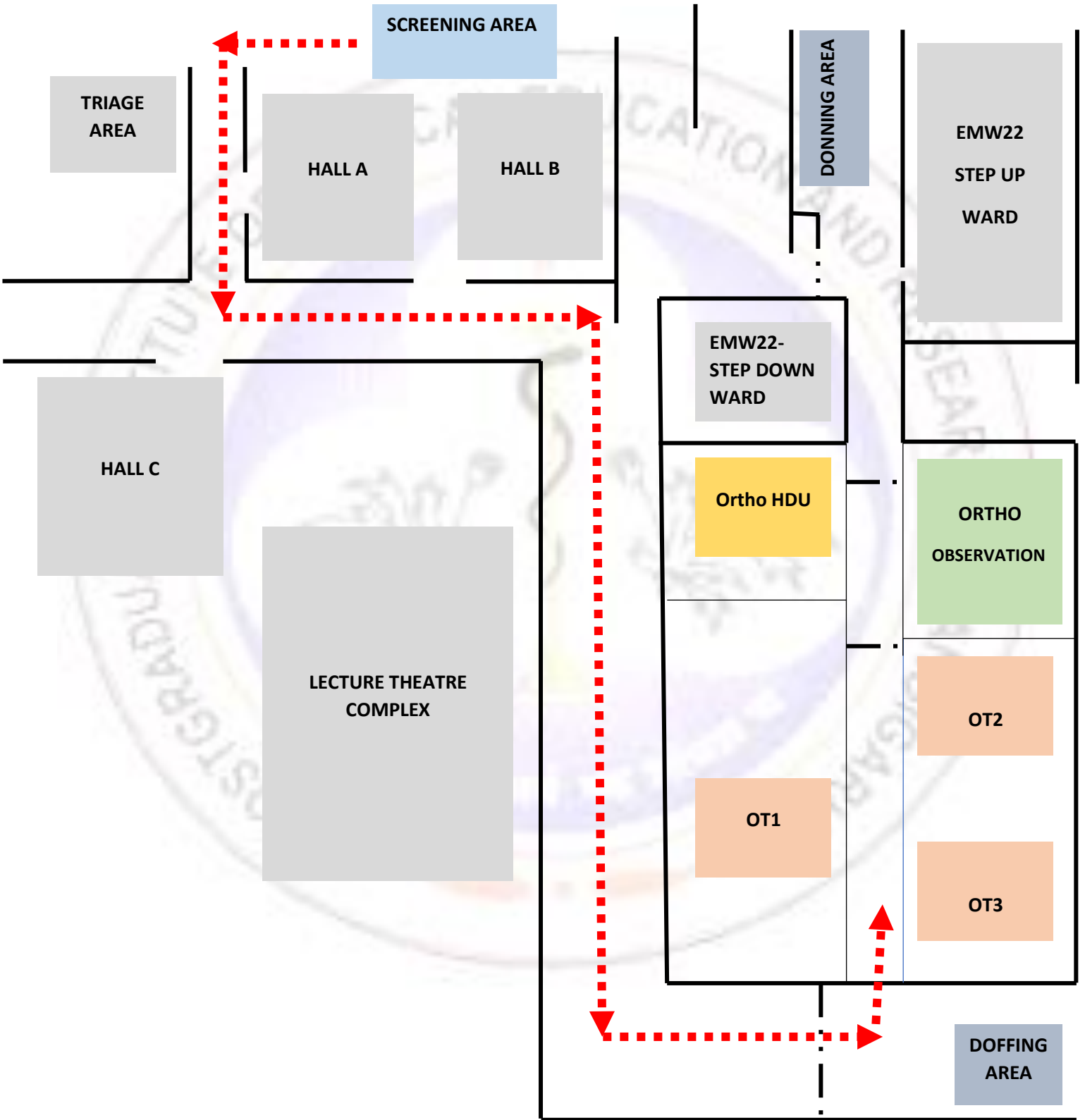
***ADMISSION CRITERIA: SARI SCORING SCALE**

Parameters	Scores
Fever	3
SOB	2
SpO ₂ ≤95%	2
Cough	1
High Risk (age ≥60, pregnancy, DM, CVD, chronic lung ds, steroid use)	1
CXR suggestive** (if available)	3



Screening OPD & SARI Area Overview

(Nehru Hospital 2nd floor)



At Screening area/Triage

- Give suspect patient a triple layer surgical mask
- Direct patient to SARI area
- Keep at least 1meter distance between suspected patients and other patients
- Instruct all patients to cover nose and mouth during coughing or sneezing with tissue or flexed elbow for others
- Perform hand hygiene after contact with respiratory secretions

At SARI ward

- Take droplet precautions, contact precautions and airborne precautions when performing aerosol generating procedures (as below)
- Suctioning, nasogastric tube insertion, Intubation and Cardiopulmonary resuscitation should be done with utmost precautions

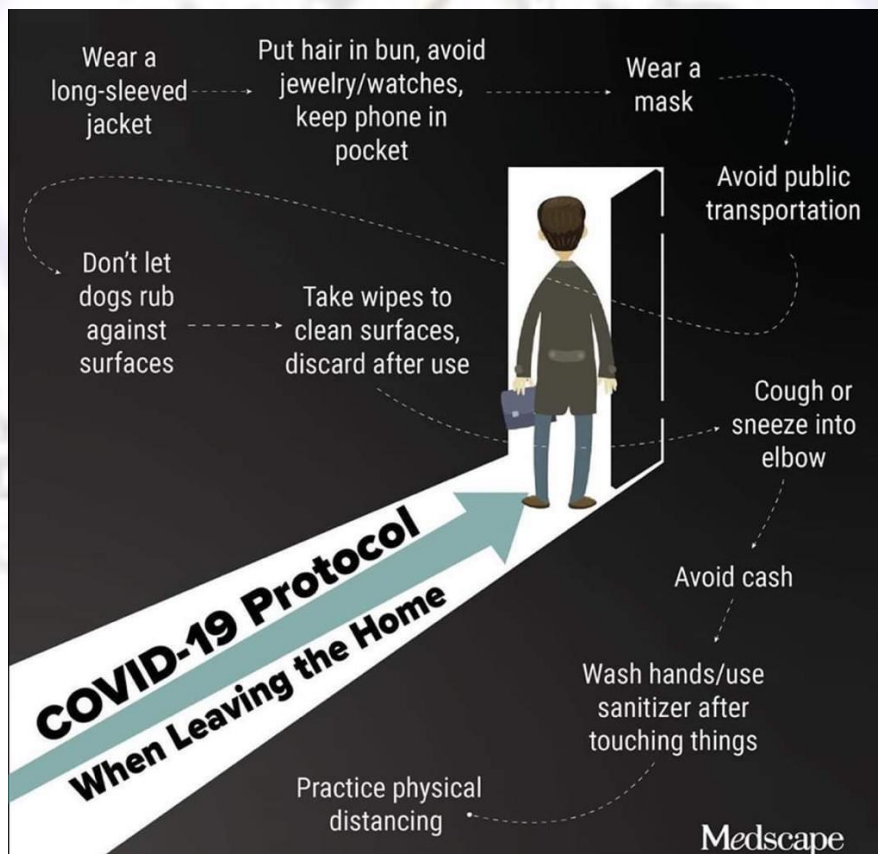
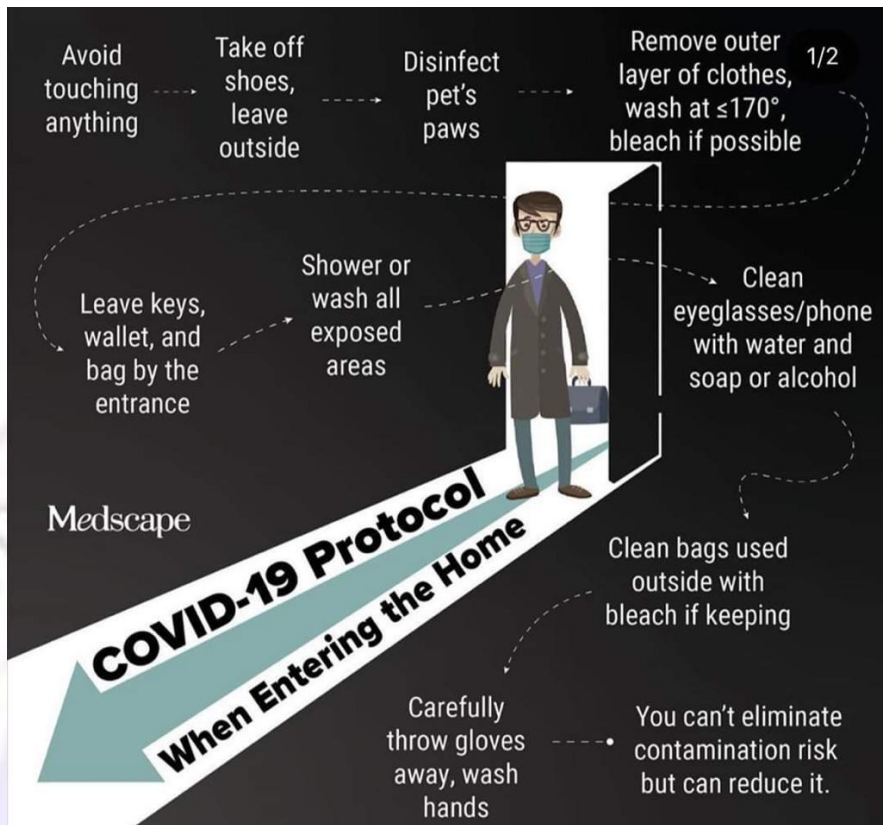
Disease category	Patient description	Area assigned in SARI ward
Uncomplicated illness	Non-specific symptoms such as fever, cough, sore throat, nasal congestion, malaise, headache	ORTHO OBSERVATION WARD
Mild pneumonia	Patient with pneumonia and no signs of severe pneumonia	
Severe pneumonia	Fever or suspected respiratory infection, plus one of the following; RR >30 /min, SpO2 <90% on room air, severe resp distress	Ortho HDU
Acute Respiratory Distress Syndrome	As per the Berlin definition	OT1 OT2 OT3

How should I take care of myself?

General Instructions

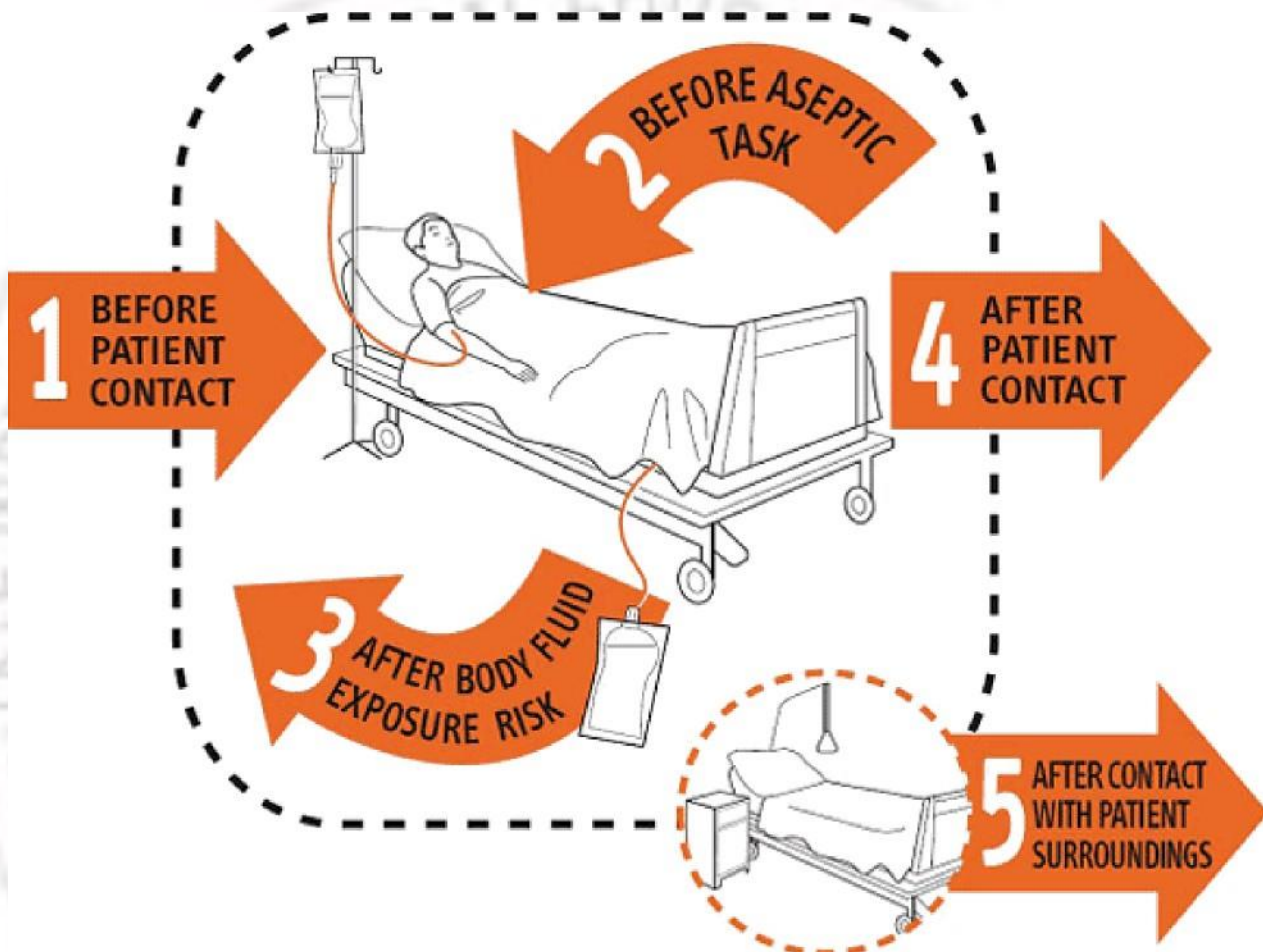
- Use hospital scrubs
- Use a single N95 mask
- Get one mask issued per day for use, discard separately for ETO sterilization later.
- Follow PPE instructions as below
- Wash hands with alcohol rub/soap and water before and after contact with patient or surrounding and before leaving the ward
- Avoid the use of a mobile phone or other personal belongings to minimize contamination. At the end of the shift make sure to disinfect these gadgets (as per manufacturer recommendation/or alcohol-based rub)
- Preferable to use the landline phone for communication and ensure that it is disinfected before and after each use
- After the duty, leave hospital scrubs for washing
- After reaching Home, dip the clothes used in warm water and detergent, wash work clothes daily
- Take a shower using soap and water
- Stay away from elderly, children and immunocompromised
- Relax and sleep for 8 hours. Indulge in some relaxing hobbies at Home.

Special instructions to follow from Home/to Home (adopted from Medscape)



Hand Washing

Health Care Worker should perform hand hygiene using alcohol-based hand rub for 20 seconds or by washing with soap and water for at least 40 seconds. If hands are visibly soiled, use soap and water for hand wash. Hand washing should be done before and after using the bathroom, before, during and after preparing food, before and after eating /drinking, after coughing, blowing or sneezing, after touching garbage.



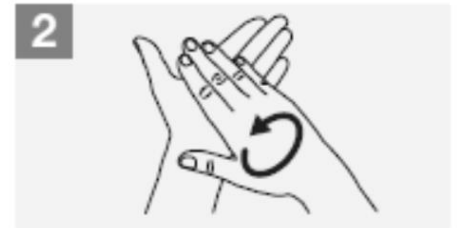
 **Duration of the entire procedure: 40-60 seconds**



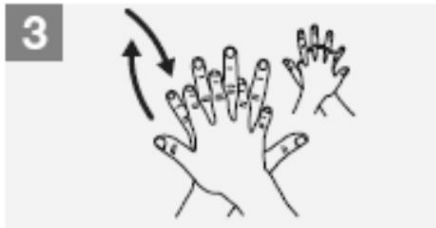
Wet hands with water;



Apply enough soap to cover all hand surfaces;



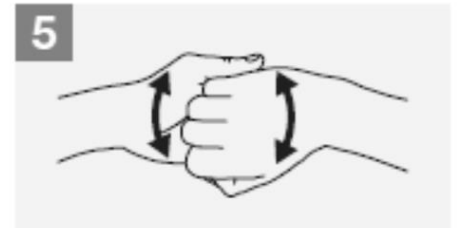
Rub hands palm to palm;



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



Palm to palm with fingers interlaced;



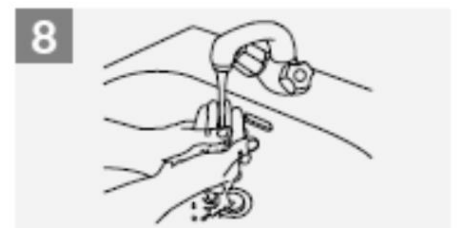
Backs of fingers to opposing palms with fingers interlocked;



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



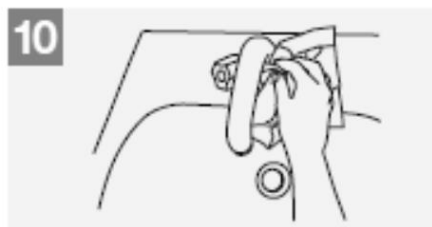
Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;



Rinse hands with water;



Dry hands thoroughly with a single use towel;



Use towel to turn off faucet;



Your hands are now safe.

For Hand Washing, steps also can be remembered by the the mnemonic **“SUMAN K” “सुमन K”**

- **S** – Seedha सीधा
- **U** – Ulta उलटा
- **M** – Mutti मुट्ठी
- **A** – Angoota अंगूठा
- **N** – Naakhun नाखून
- **K** – Kalai कलाई

Donning Sequence

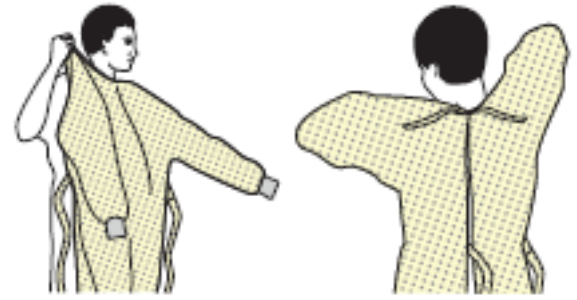
[Sequence for Putting on Personal Protective Equipment (PPE)]

(may differ with the available type of PPE)

- Remove personal clothes and items and change 1st layer clothes (i.e. surgical scrub and shoes) (The observer will check that there are no holes in dress, no personal things are worn: no rings/watches/chain/necklace/wrist bands and, nails are trimmed, no beard, head hair is tidy and not falling on face or neck).
- Perform Hand Hygiene (Wash with soap and water or alcohol hand rub)
- Next, sit in a clean chair and put on the leg covers and pull them up to your mid-calf. Ensure your hand is not touching the floor accidentally.
- Perform Hand Hygiene (Wash with soap and water or alcohol hand rub).
- Put on the first pair of gloves after ensuring that hands are dry.
- Put on the full-body Hazmat suit and make sure that the inner gloves are tucked under the sleeves of the suit. The observer can assist with wearing the suit. May consider tapping the sleeve with inner gloves.
- Next, put on N95 respirator: put the bottom strap first overhead and keep it below ears at the back of the neck. The top strap goes along the back of the head towards the crown of the head and checks to make sure that there's a seal (Seal check: Expiring and inspiring against firmly pressed mask over face to assess leak).
- Put on the surgical hood (If available) and pull it down to cover head, hair, neck, ears, forehead.
- Next, put on the face shield (to protect the front and sides of your face covering the eye).
- Put on the disposable long sleeve surgical gown on top of the full bodysuit. Ensure the wrist band of the gown entirely covers and extends beyond the sleeves of the suit
- The last item to put on is the second pair of gloves and make sure that the cuffs of the gloves are pulled over the sleeves of the gown and staying tight.
- Now HCW will turn around so that observer can inspect and go through the range- of- motion assessment, to make sure that HCW can move freely and comfortably. The observer is also going to make sure that all areas of the body are covered, and there are no holes or tears.
- Now, before going to see a patient, HCW will disinfect his hands with alcohol hand rub

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



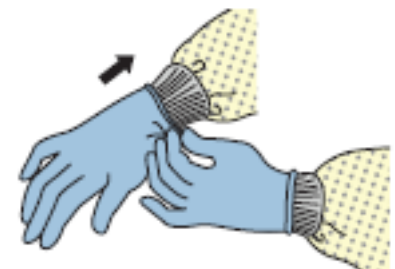
3. GOGGLES OR FACE SHIELD

- Place over face and eyes and adjust to fit



4. GLOVES

- Extend to cover wrist of isolation gown



Adapted from CDC website

Doffing Sequence

[Removing Personal Protective Equipment (PPE)]

Doffing is equally important or more critical than donning as it is a high-risk activity and to be done at the designated area with enough time (Don't rush for the doffing)

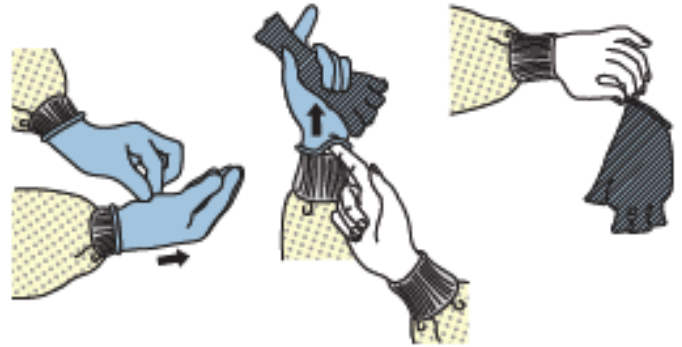
- Now that after providing patient care, while doffing, the trained observer needs to be there wearing a gown, surgical mask, face shield, gloves and shoe cover and help HCW get the PPE off safely and discard it in the appropriate waste container.
- Before entering the Doffing room from the patient area, HCW must perform hand hygiene on outer gloves
- HCW first turns around, and observer visually inspects PPE to see if it has visible contamination, cuts, or tears. And while doing this, an observer should be at a safe distance (2 meters) from him/her. If all right, shout "Everything looks fine". If there are any visible signs of contamination, disinfect with disinfectant.
- HCW performs hand hygiene (Wash with soap and water or alcohol hand rub).
- Remove outer glove using "Glove in Glove" technique. Peel off the outer glove of one hand touching the only outer surface and keep the removed glove in the other hand. Now remove the second outer glove inserting one or two fingers inside it (not touching outer part) and discard both outer gloves in the designated "disposable" waste container.
- Inspect inner gloves and perform hand hygiene (Wash with soap and water or alcohol hand rub) (Notice that HCW has to perform hand hygiene after each step of removing PPE)
- Remove and discard outer disposable surgical gown: after untying the knot, pull the gown forward and away from the body to remove it from the top and roll from inside out and put in the disposable waste container.
- Perform hand hygiene over inner gloves (Wash with soap and water or alcohol hand rub)
- Remove face shield in a sniffing position, bending forward, grabbing the rear strap, and pulling it overhead, avoid touching the front surface of the face shield, place it in the "Reusable" waste container.
- Perform hand hygiene (Wash with soap and water or alcohol hand rub)
- Remove surgical hood: Lean forward and grab top/back of the hood and pull it forward over your head gently and discard it in "reusable" waste container.
- Perform hand hygiene (Wash with soap and water or alcohol hand rub)

Remove full-body Hazmat suit

- Unlock the buttons if any. Trace the zipper from bottom up using one finger, hold and pull it down to unzip (Preferably using a mirror so that you will not touch your skin in the neck area). Get out of the full-body suit, holding the zipper edges at chest level, removing from inside out in the order of top body à the sleeves à hips à legs. Can sit over a chair (Dirty chair) to remove leg part. Pick the suit from the floor touching only the inner aspect, not touching its external surface or floor and put it in “Reusable” waste container.
- Perform hand hygiene (Wash with soap and water or alcohol hand rub)
- Now, sit down on a chair (Clean chair) kept inside the RED line (uncontaminated area) but your foot still outside RED line, and carefully remove the leg covers not touching outer surface while leaving the covers outside the RED line and placing your foot with shoes inside the RED line.
- Visual inspection of shoes for any contamination.
- Perform hand hygiene (Wash with soap and water or alcohol hand rub)
- Remove the inner glove as before, using ‘glove in glove’ technique (beware don’t touch your face now).
- Perform hand hygiene on bare hand
- Wear a new pair of gloves (surgical glove / non-sterile latex glove)
- Remove N95 respirator – leaning forward, face down, grasping first bottom strap then top strap and remove without touching the outer surface of the mask and discard in the “disposable” waste container
- Perform hand hygiene (alcohol hand rub from another bottle from uncontaminated area poured by the observer)
- Final inspection on surgical scrubs (front and back) to see if there are any visible contamination, cuts, or tears
- Remove the gloves as before using ‘glove in glove’ technique
- Perform hand hygiene (alcohol hand rub given by the observer)
- Enter the shower room, remove your shoes and surgical scrub, take a shower and change to new clothes

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

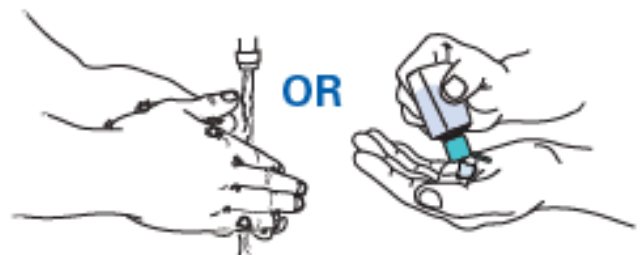


4. MASK OR RESPIRATOR

- 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



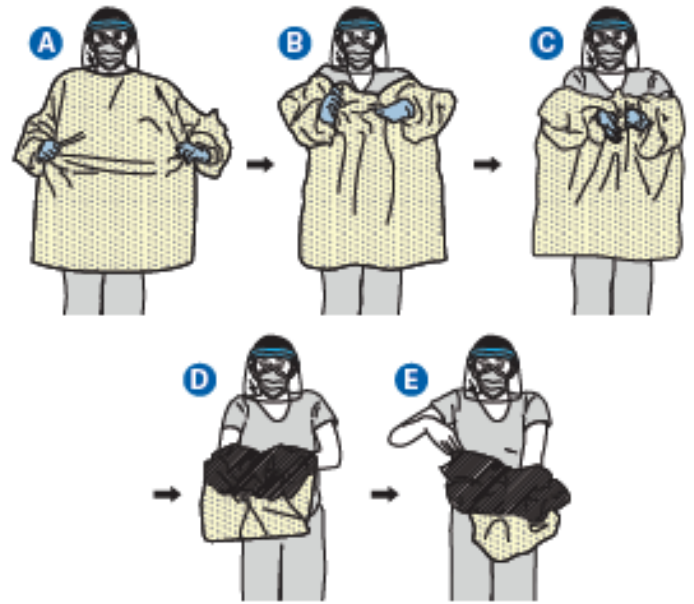
5. WASH HANDS OR USE AN ALCOHOL-BASED HAND SANITIZER IMMEDIATELY AFTER REMOVING ALL PPE



Adapted from CDC website

1. GOWN AND GLOVES

- Gown front and sleeves and the outside of gloves are contaminated!
- If your hands get contaminated during gown or glove removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Grasp the gown in the front and pull away from your body so that the ties break, touching outside of gown only with gloved hands
- While removing the gown, fold or roll the gown inside-out into a bundle
- As you are removing the gown, peel off your gloves at the same time, only touching the inside of the gloves and gown with your bare hands. Place the gown and gloves into 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 and without touching the front of the goggles or face shield
- If the item is reusable, place in designated receptacle for reprocessing. Otherwise, discard in a waste container

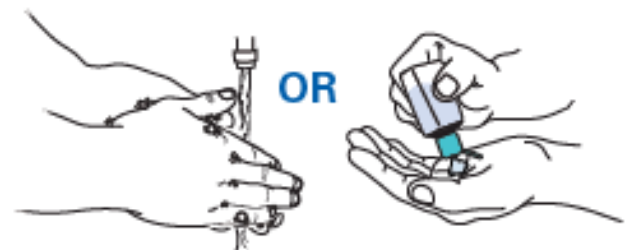


3. MASK OR RESPIRATOR

- 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



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



Adapted from CDC website

Precautions When Performing Aerosol-Generating Procedures (AGPs)

Some procedures performed on a patient with known or suspected COVID-19 could generate infectious aerosols. In particular, procedures that are likely to induce coughing (e.g., sputum induction, open suctioning of airways) should be performed cautiously and avoided if possible.

- HCP in the room should wear an N95 or higher-level respirator, eye protection, gloves, and a gown.
- The number of HCP present during the procedure should be limited to only those essential for patient care and procedure support. Visitors should not be present for the procedure.
- Clean and disinfect procedure room surfaces promptly as described in the section on environmental infection control below.



CONTACT PRECAUTIONS



EVERYONE MUST:



Clean their hands, including before entering and when leaving the room.

PROVIDERS AND STAFF MUST ALSO:



Put on gloves before room entry.
Discard gloves before room exit.



Put on gown before room entry.
Discard gown before room exit.

Do not wear the same gown and gloves for the care of more than one person.



Use dedicated or disposable equipment.
Clean and disinfect reusable equipment before use on another person.



U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

CSPB-308149-A

Adapted from CDC website



DROPLET PRECAUTIONS



EVERYONE MUST:

Clean their hands, including before entering and when leaving the room.



Make sure their eyes, nose and mouth are fully covered before room entry.



or



Remove face protection before room exit.

CDC

Adapted from CDC website



AIRBORNE PRECAUTIONS



EVERYONE MUST:



Clean their hands, including before entering and when leaving the room.



Put on a fit-tested N-95 or higher level respirator before room entry.

Remove respirator after exiting the room and closing the door.



Door to room must remain closed.

V-611005-RSD



U.S. Department of
Health and Human Services
Centers for Disease
Control and Prevention

Adapted from CDC website

Collection of Diagnostic Respiratory Specimens

When collecting diagnostic respiratory specimens (e.g., nasopharyngeal swab) from a possible COVID-19 patient, the following instructions are to be followed:

- HCP in the room should wear an N-95 or higher-level respirator (or facemask if a respirator is not available), eye protection, gloves, and a gown.
- The number of HCP present during the procedure should be limited to only those essential for patient care and procedure support. Visitors should not be present for specimen collection.
- Specimen collection should be performed in a standard examination room with the door closed.
- Clean and disinfect procedure room surfaces promptly as described in the section on environmental infection control below.

For Nasal swab

Tilt patient's head back by 70 degrees.



While gently rotating the swab, insert swab less than one inch into nostril (until resistance is met at the turbinates)



Rotate the swab several times against nasal wall and repeat in other nostril using the same swab



Place tip of the swab into sterile viral transport media tube and cut off the applicator stick



For Throat swab

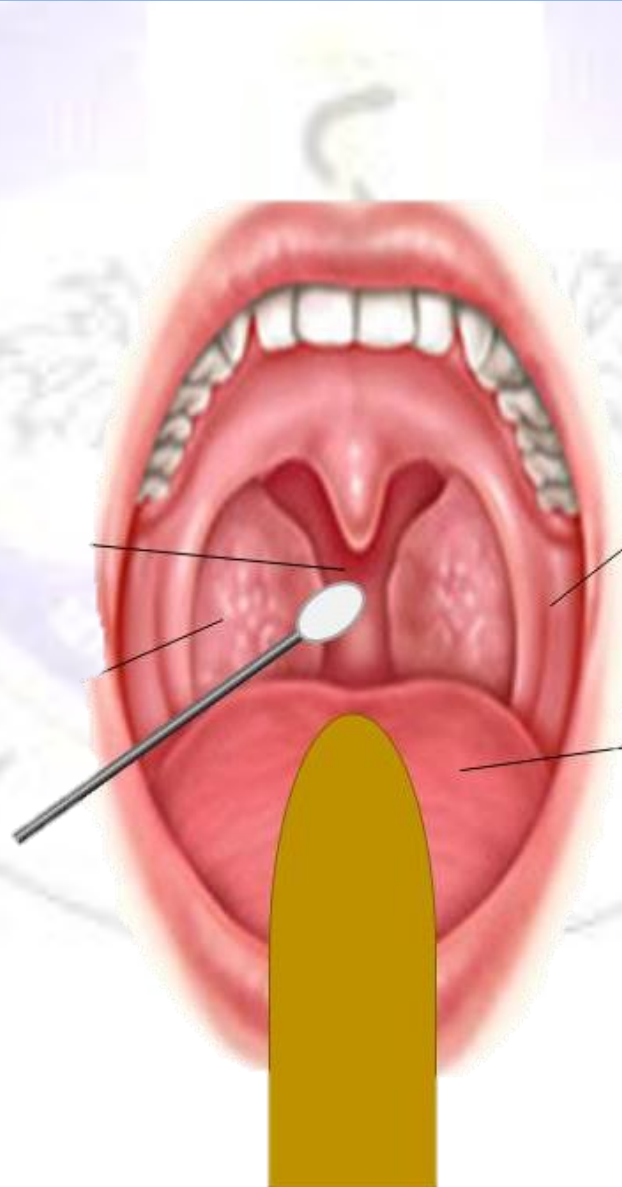
Take a second swab, insert into mouth



Swab the posterior pharynx and tonsillar areas (avoid the tongue)



Place tip of swab into the same tube and cut off the applicator tip



Intubation protocol for COVID-19 suspects

The seven 'P' s to minimize aerosol production and successful intubation at first attempt

Prepare	<p>Use a <u>checklist</u> for airway management equipment and medications</p> <p>Review airway management <u>plan and discuss with the team</u> before entering the room</p> <p>Check for <u>contraindications to drugs (e.g. succinylcholine)</u>; <u>arrange for resuscitation</u>, and have a back-up plan for failed intubation</p> <p><u>Prepare and label</u> all essential medications before approaching the infected area</p> <p>Keep all non-essential items outside, before approaching the infected area</p> <p><u>Intubation team</u>: limit to three people</p> <p>A second operator may wait outside the room for difficult airway/failed intubation</p>
Preoxygenate	3 to 5 minutes with 100% O ₂ using low or moderate flow rates. Avoid BMV if possible. Avoid noninvasive ventilation
Pre-intubation optimization	<p>Intravenous fluids may be given to patients who may be volume depleted</p> <p>Avoid volume overload in ARDS patients</p> <p>Prepare norepinephrine infusion before giving induction agent in patients with hypotension or signs of hemodynamic instability</p> <p>Avoid pretreatment with nebulizers</p>
Paralysis	<p><i>Succinylcholine</i>: 0.6 mg/kg (range: 0.3 to 1.1 mg/kg)</p> <p>For rapid sequence intubation, may use 1 to 1.5 mg/kg</p> <p><i>Check contraindications</i> (hypersensitivity, <i>hyperkalemia</i>, trauma, rhabdomyolysis, myopathies)</p> <p><u>AVOID PARALYSIS IF DIFFICULT INTUBATION ANTICIPATED, AND FURTHER HELP/EXPERTISE IS NOT AVAILABLE</u></p>
Protection	Proper donning of personal protective equipment (PPE) under supervision; Double glove, goggles, gown and hood for intubating team
Placement (intubation)	<p>Check laryngoscopes, different sizes of blades should be available, a functioning laryngoscope, replacement handles and batteries should be available</p> <p>Video-laryngoscope to be used if available</p>
Post-intubation management	<p>Inflate cuff immediately following ETT placement and before initiating PPV</p> <p>Procedures can be bundled together to reduce exposure. e.g. intubation, followed by central venous catheter placement together, nasogastric tube, oral care etc. and then portable chest radiograph to assess</p> <p>Limit ventilator disconnections. Use closed suction devices for suctioning</p> <p>All equipment and surroundings to be cleaned immediately as per standard recommendations</p> <p>Proper doffing of PPE, under supervision</p>

*Adapted from rapid sequence intubation (RSI) protocol, Source 2020 UpToDate

Updated on 04-04-2020

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