



PPE guideline for **COVID-19**

ADAPTED FROM RATIONAL USE OF PERSONAL PROTECTIVE
EQUIPMENT (PPE) FOR CORONA VIRUS DISEASE (COVID-19)

19 MARCH 2020

PPE Guideline during the COVID-19 epidemic

What is PPE

PPE, also known as personal protective equipment, are specialized clothing or material worn by healthcare workers for protection against infectious materials, and further transmission in a hospital setting.

PPE can also be worn by symptomatic patients of a contagious disease to prevent transmission to the general community. Additionally, home care providers of patients with contagious diseases may also wear some form of PPE.

Major types of PPE used in a healthcare setting include:

- Surgical masks
- Respirators (N95 or FFP2 standard or equivalent)
- Gloves
- Disposable Gowns or Aprons
- Boots
- Eye protection - goggles or face shields
- Disposable head covers

Please note:

- A surgical mask is a loose-fitting, disposable device that creates a physical barrier between the mouth and nose of the wearer and potential contaminants in the immediate environment.
- Respirators (e.g. N95, FFP2 or equivalent standard) have a very close facial fit, forming a seal around the nose and mouth and are efficient for filtration of airborne particles.
- When donning a respirator, cup the respirator in dominant hand and allow the straps to hang freely below your hand. It should be positioned to cover your nose and mouth and sit on your chin. A positive pressure fit check must be performed to confirm a proper seal. This is done by placing both hands on the respirator and exhaling sharply to check for air leaks. If any air leaks are noted, mould the nosepiece using both hands, to the shape of your nose.
- Use of gloves as a type of PPE does not replace the need for appropriate hand hygiene.

When should PPE be used

PPE should be worn appropriately and rationally based on:

- risk of exposure (e.g. type of activity)
- transmission dynamics of the pathogen (e.g. contact, droplet or aerosol)

Health care workers involved in the direct care of patients such as COVID - 19 patients, should use the following PPE: gowns, gloves, medical mask, and eye protection (goggles or face shield).

For aerosol-generating procedures that are undertaken during management of COVID -19 patients (e.g. tracheal intubation, non-invasive ventilation, tracheostomy, cardiopulmonary resuscitation, manual ventilation before intubation, bronchoscopy) health care workers should use respirators, eye protection, gloves, disposable head covers and gowns; aprons should also be used if gowns are not fluid resistant.

Recommended personal PPE during the outbreak of COVID-19, according to the setting, personnel and type of activity

Inpatient facilities

Setting	Target personnel or patients	Activity	Type of PPE or procedure
Patient room	Health care workers	Providing direct care to COVID-19 patients	Medical mask / Gown / Gloves / Eye protection (goggles or face shield)
		Aerosol-generating procedures performed on COVID-19 patients	Respirator N95 or FFP2 standard, or equivalent. / Gown / Gloves / Eye protection / Apron
	Cleaners	Entering the room of COVID-19 patients	Medical mask / Gown / Heavy duty gloves / Eye protection (if risk of splash from organic material or chemicals) / Boots or closed work shoes
	Visitors	Entering the room of a COVID-19 patient	Medical mask / Gown / Gloves
Other areas of patient transit (e.g. wards, corridors).	All staff, including health care workers.	Any activity that does not involve contact with COVID-19 patients	No PPE required
Triage	Health care workers	Preliminary screening not involving direct contact	Maintain spatial distance of at least 1 metre. / No PPE required
	Patients with respiratory symptoms	Any	Maintain spatial distance of at least 1 metre. / Provide medical mask if tolerated by patient.
	Patients without respiratory symptoms	Any	No PPE required
Laboratory	Lab technician	Manipulation of respiratory samples	Medical mask / Gown / Gloves / Eye protection (if risk of splash)
Administrative areas	All staff, including health care workers.	Administrative tasks that do not involve contact with COVID-19 patients.	No PPE required

Rational use of personal protective equipment for coronavirus disease (COVID-19): interim guidance

Outpatient facilities

Setting	Target personnel or patients	Activity	Type of PPE or procedure
Consultation room	Health care workers	Physical examination of patient with respiratory symptoms	Medical mask / Gown / Gloves / Eye protection
	Health care workers	Physical examination of patients without respiratory symptoms	PPE according to standard precautions and risk assessment.
	Patients with respiratory symptoms	Any	Provide medical mask if tolerated.
	Patients without respiratory symptoms	Any	No PPE required
	Cleaners	After and between consultations with patients with respiratory symptoms.	Medical mask / Gown / Heavy duty gloves / Eye protection (if risk of splash from organic material or chemicals). / Boots or closed work shoes
Waiting room	Patients with respiratory symptoms	Any	Provide medical mask if tolerated. Immediately move the patient to an isolation room or separate area away from others; if this is not feasible, ensure spatial distance of at least 1 metre from other patients.
	Patients without respiratory symptoms	Any	No PPE required
Administrative areas	All staff, including health care workers	Administrative tasks	No PPE required
Triage	Health care workers	Preliminary screening not involving direct contact	Maintain spatial distance of at least 1 metre. / No PPE required
	Patients with respiratory symptoms	Any	Maintain spatial distance of at least 1 metre. / Provide medical mask if tolerated.
	Patients without respiratory symptoms	Any	No PPE required

Steps to put on personal protective equipment (PPE) including gown

- 1 Remove all personal items** (jewelry, watches, cell phones, pens, etc.)



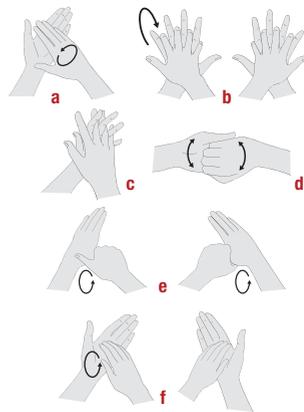
- 2 Put on scrub suit and rubber boots¹** in the changing room.



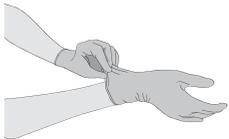
- 3 Move to the clean area at the entrance of the isolation unit.**
- 4 By visual inspection, ensure that all sizes of the PPE set are correct and the quality is appropriate.**

- 5 Undertake the procedure of putting on PPE under the guidance and supervision of a trained observer (colleague).**

- 6 Perform hand hygiene.**



- 7 Put on gloves** (examination, nitrile gloves).



- 8 Put on disposable gown**

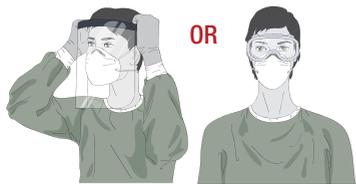
made of fabric that is tested for resistance to penetration by blood or body fluids
OR to blood-borne pathogens.



- 9 Put on face mask.**



- 10 Put on face shield OR goggles.**



- 11 Put on head and neck covering** surgical bonnet covering neck and sides of the head (preferable with face shield) OR hood.

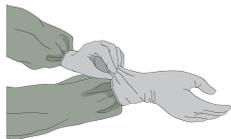


- 12 Put on disposable waterproof apron**

(if not available, use heavy duty, reusable waterproof apron).



- 13 Put on second pair of (preferably long cuff) gloves over the cuff.**



¹ If boots are not available, use closed shoes (slip-ons without shoelaces and fully covering the dorsum of the foot and ankles) and shoe covers (nonslip and preferably impermeable)



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Steps to take off personal protective equipment (PPE) including coverall

- 1 Always remove PPE under the guidance and supervision of a trained observer (colleague).** Ensure that infectious waste containers are available in the doffing area for safe disposal of PPE. Separate containers should be available for reusable items.

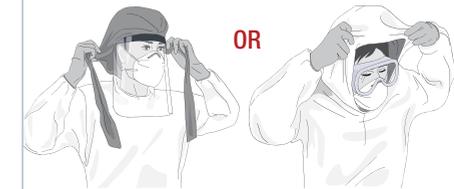
- 2 Perform hand hygiene on gloved hands.¹**

- 3 Remove apron** leaning forward and taking care to avoid contaminating your hands.

When removing disposable apron, tear it off at the neck and roll it down without touching the front area. Then untie the back and roll the apron forward.



- 5 Remove head and neck covering** taking care to avoid contaminating your face by starting from the bottom of the hood in the back and rolling from back to front and from inside to outside, and dispose of it safely.

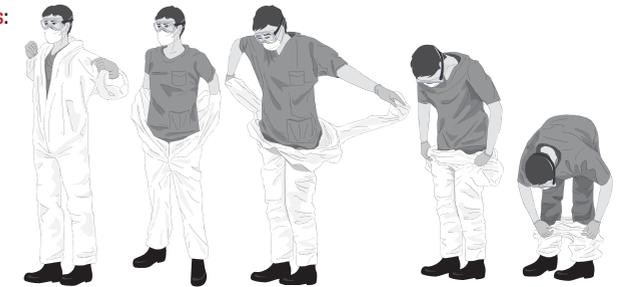


- 4 Perform hand hygiene on gloved hands.**

- 6 Perform hand hygiene on gloved hands.**

- 7 Remove coverall and outer pair of gloves:**

Ideally, in front of a mirror, tilt head back to reach zipper, unzip completely without touching any skin or scrubs, and start removing coverall from top to bottom. After freeing shoulders, remove the outer gloves² while pulling the arms out of the sleeves. With inner gloves roll the coverall, from the waist down and from the inside of the coverall, down to the top of the boots. Use one boot to pull off coverall from other boot and vice versa, then step away from the coverall and dispose of it safely.



- 8 Perform hand hygiene on gloved hands.**

- 9 Remove eye protection** by pulling the string from behind the head and dispose of it safely.



- 11 Remove the mask** from behind the head by first untying the bottom string above the head and leaving it hanging in front; and then the top string next from behind head and dispose of it safely.



- 12 Perform hand hygiene on gloved hands.**

- 15 Remove gloves** carefully with appropriate technique and dispose of them safely.



- 10 Perform hand hygiene on gloved hands.**

- 13 Remove rubber boots** without touching them (or overshoes if wearing shoes). If the same boots are to be used outside of the high-risk zone, keep them on but clean and decontaminate appropriately before leaving the doffing area.³

- 14 Perform hand hygiene on gloved hands.**

- 16 Perform hand hygiene.**

¹ While working in the patient care area, outer gloves should be changed between patients and prior to exiting (change after seeing the last patient)

² This technique requires properly fitted gloves. When outer gloves are too tight or inner gloves are too loose and/or hands are sweaty, the outer gloves may need to be removed separately, after removing the apron.

³ Appropriate decontamination of boots includes stepping into a footbath with 0.5% chlorine solution (and removing dirt with toilet brush if heavily soiled with mud and/or organic materials) and then wiping all sides with 0.5% chlorine solution. At least once a day boots should be disinfected by soaking in a 0.5% chlorine solution for 30 min, then rinsed and dried.

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① These recommendations are based on WHO guidelines. This information is effective as at 26th March 2020. Case management of COVID-19 is rapidly evolving. Stay informed and check local authorities and www.who.int.

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