GUIDELINES FOR PPE USE DURING THE CORONAVIRUS DISEASE 2019 (COVID-19)

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PURPOSE AND SCOPE OF DOCUMENT

This document provides recommendations for the use of personal protective equipment (PPE) for specific situations, to protect our staff, patients and visitors against exposure to the coronavirus (SARS-CoV-2). Each situation staff may be placed in has a different risk of exposure, so the recommendations are designed to ensure that the most appropriate and effective PPE is used in each situation. The guidelines apply to all clinical staff (such as nursing assistants, nurses, doctors, occupational therapists, physiotherapists, dentists, oral hygienists, radiographers), non-clinical staff (such as administrative staff, cleaners, porters, catering staff and security), ambulance staff and community health workers who may come into contact with suspected or confirmed COVID-19 cases.

CORONAVIRUS TRANSMISSION

The SARS-CoV-2 virus (coronavirus) is spread by respiratory droplets and contact with contaminated surfaces . The virus can be transmitted from infected people by cough and sneeze droplets, which land on surfaces and hands. Further transmission can occur via physical contact such as shaking hands, or touching contaminated surfaces.

GENERAL MEASURES TO PROTECT AGAINST INFECTION

These general measures to prevent infection should always be followed. PPE is then used in addition, when required.

- Transmission can be greatly reduced by an increased frequency of hand hygiene using the “WHO 5 Moments for Hand Hygiene”.
- Cough and sneeze into a flexed elbow, or into a tissue (then place it in a bin and wash your hands).
- Wash hands with soap and water for 20 seconds, or use alcohol-based hand sanitiser after patient contact and after contact with frequently touched surfaces (e.g. keyboards, screens, phones, door handles, work surfaces).
- Avoid touching your eyes, nose and mouth with unwashed hands
- Avoid handshakes or physical contact – greet people in other ways
- Keep a safe distance from other people (at least 1 metre) whenever possible (social-distancing).
- Frequently touched surfaces and equipment in clinical areas should be cleaned and disinfected twice daily.
- Remove your work clothes at the workplace and place in a plastic bag. Clean with warm wash at home. Or else remove your work clothes immediately when you get home and place them in a washing basket. Wash your hands after removal of clothes.

RECOMMENDATIONS FOR PPE USE DURING CONTACT WITH AND CARE OF COVID-19 CASES

The table below provides detailed recommendations about when and which PPE is required in various healthcare situations.

- **PPE is based on risk assessment of each situation and is ONLY NEEDED if you are in direct contact with or caring for a confirmed or suspected COVID-19 patient.**
- Supervisors should monitor that staff are wearing the appropriate PPE for a particular situation, to keep everyone safe.
- **Do not use PPE (e.g. N95 respirators) when you don't need to. PPE stocks will then be preserved to ensure the safety of everyone.**

INPATIENT SERVICES (HOSPITAL WARDS, ICU, OVERNIGHT/HOLDING WARDS, STEP-DOWN FACILITIES)

Setting	Target Personnel or Patients	Activity	Type of PPE or Procedure
Isolation cubicles, rooms, or wards where COVID-19 patients are being cared for.	**Patients with COVID-19**	Any	**Surgical Mask**
	Clinical staff	**Providing direct care to COVID-19 patients**	**Surgical Mask** Apron Non-sterile Gloves Eye protection (goggles or visor)
	Clinical staff	**Aerosol-generating procedures*** performed on COVID-19 patients (such as **nasopharyngeal and oropharyngeal swabbing** for testing for coronavirus infections) **N95 respirators**** are only worn when performing aerosol producing procedures	**N95 Respirator** Apron or gown Non-sterile Gloves Eye protection (goggles or visor)
	Body of deceased	**Death of COVID-19 patient**	Wrap body with sheets as per usual

Setting	Target Personnel or Patients	Activity	Type of PPE or Procedure
	Cleaners	Entering the cubicle or room or ward of **COVID-19 patients**	**Surgical mask** Apron Long rubber utility cleaning gloves (ideally up to elbow) that can be washed Eye protection (goggles or visor) Closed work shoes
	Porters and nurses	Transport of **COVID-19 patients**	**Surgical Mask** Non-sterile Gloves
	Catering staff	Providing meals **inside COVID-19 ward**	**Surgical Mask** Non-sterile Gloves
	Administrative personnel	Administrative staff supporting **COVID-19 ward services**, who are not usually in direct contact with patients, but would enter the isolation ward.	**Surgical mask** Non-sterile Gloves Maintain spatial distance of at least 1 metre, where possible
	Security personnel	Any	**Surgical mask**
	Laundry workers	Laundering of **COVID-19 patient** linen	**Linen to be bagged separate from other linen** **Surgical mask** Apron Long rubber utility cleaning gloves (ideally up to elbow) that can be washed Eye protection (goggles or visor) Closed work shoes

Setting	Target Personnel or Patients	Activity	Type of PPE or Procedure
All types of wards where Non-COVID-19 Patients (i.e. patients who do NOT have COVID-19) are being cared for	**Patients without COVID-19**	Any	**No PPE required**
	Clinical staff	**Aerosol-generating procedures*** performed on **Non-COVID-19 patients***	**Surgical mask** Apron Non-sterile Gloves Eye protection (goggles or visor)
	All staff	**Any other activity** besides Aerosol-generating procedures performed for **Non-COVID-19 patients**	**No PPE required**
	Visitors	Visiting **patients without COVID-19**	**No PPE required**
Other areas of the hospital where COVID-19 patients transit (e.g. corridors) but are not directly attended to.	**All staff**	Any activity that does **not involve contact with COVID-19 patients**	**No PPE required**

* Aerosol-generating procedures are: collection of nasopharyngeal and oropharyngeal swabs for SARS-COV-2 testing, tracheal aspirate, bronchoalveolar lavage, manual bag-mask ventilation, non-invasive CPAP ventilation, tracheal intubation, open suctioning, tracheotomy, bronchoscopy, endoscopy, ENT procedures, dental procedures, maxillo-facial procedures and cardiopulmonary resuscitation.

**N95 respirator must still be used for all other Non-COVID-19 indications (e.g. when attend to a patient with confirmed or suspected TB)

SERVICES AT PHC FACILITIES, OUTPATIENTS, EMERGENCY UNITS AND TEMPORARAY FACILITIES

Setting	Target Personnel or Patients	Activity	Type of PPE or Procedure
Triage at Clinics, CHC, OPD. Emergency Units and temporary facilities entrances	**Clinical staff**	**Triage: Preliminary screening of patients (via questions on symptoms** and contact with COVID-19 cases) as they enter unit.	Maintain spatial distance of at least 1 metre **Surgical mask**
	Patients and escorts who screen positive	While **waiting for testing**	**Move patient to isolation room** Provide **Surgical mask**
	Patients and escorts who screen negative but have respiratory symptoms	While waiting for **consultation**	Maintain spatial distance of at least 1 metre. Provide **Surgical mask**
	Patients and escorts who screen negative but *without* respiratory symptoms	While waiting for **consultation**	**No PPE required**
Administrative areas	**All staff** including reception, clerical and clinical staff	Administrative tasks that **do not involve contact with COVID-19 patients**	**No PPE required**
Clinic, CHC, OPD, Emergency Unit and Temporary facility Consultation rooms	**Clinical staff**	Physical examination of **suspected COVID-19 patients**	**Surgical Mask** Eye protection (goggles or visor) Apron Non-sterile Gloves
	Clinical staff	**Aerosol-generating procedures** performed on suspected COVID-19 patients (such as **nasopharyngeal and oropharyngeal swabbing** for **testing** for coronavirus infections) **Note that N95 respirators** are only worn when performing aerosol-generating procedures	**N95 Respirator** Apron or gown Non-sterile Gloves Eye protection (goggles or visor)

Setting	Target Personnel or Patients	Activity	Type of PPE or Procedure
	Clinical staff	Physical examination of patients **without** respiratory symptoms.	**No PPE required**
	Cleaners	Cleaning the **vacated** room and areas used by a COVID-19 patient	**Surgical mask** Apron Eye protection (goggles or visor) Long rubber utility cleaning gloves (ideally up to elbow) that can be washed Closed work shoes
	Body of deceased	**Death of COVID-19 patient**	Wrap body with sheets as per usual
Entrance to COVID-19 Area	**Security personnel**.	Any	**Surgical mask**

COVID-19 PATIENTS CARED FOR AT HOME (OR IN HOSTELS)

Setting	Target Personnel or Patients	Activity	Type of PPE or Procedure
Private home or hostel	**Patient with COVID-19**	**When in contact with others**	**Surgical mask.**
	Caregiver (family members and other caregivers)	**Direct contact with COVID-19 patients.**	**Surgical mask** Apron. Non-sterile gloves. Eye protection (goggles or visor)
	Contact tracers and **Medical response teams**	**Direct contact with COVID-19 and suspected COVID-19 patients**	**Surgical mask** (ideally with visor) Apron. Non-sterile gloves.
	Body of deceased	**Death of COVID-19 patient**	Wrap body with sheets

EMERGENCY MEDICAL SERVICES (EMS)

Setting	Target Personnel or Patients	Activity	Type of PPE or Procedure
Ambulance/transfer vehicle	**Clinical staff**	Care for and transport of **suspected COVID-19 patients** to a referral health care facility	**Surgical mask** A40 suit (apron not practical when worn outside, especially if windy) Non-sterile Gloves Eye protection (goggles or visor)
	Clinical staff	**Intubation and suctioning** of suspected COVID-19 patients	**N95 Respirator** A40 suit (apron not practical)

Setting	Target Personnel or Patients	Activity	Type of PPE or Procedure
			Non-sterile Gloves Eye protection (goggles or visor)
	Suspected COVID-19 patient	While being **transported**	**Surgical mask**
	Cleaners	**Cleaning the vehicle** after transport of suspected COVID-19 patients to the referral facility	**Surgical mask** Apron Eye protection (goggles or visor) Long rubber utility cleaning gloves (ideally up to elbow) Closed work shoes

COMMUNITY HEALTH WORKER (CHW) SERVICES

Setting	Activity	CHW PPE	People/Patient PPE
Field: Outdoor points (bus or taxi rank) and **Indoor points** (mall)	**Distributing** educational materials	Maintain at least 1m distance from people. **No PPE required**	Maintain at least 1m distance from people. **No PPE required**
Field: In communities but **outside homes**	**Distributing** educational materials	Maintain at least 1m distance from people. **No PPE required**	Maintain at least 1m distance from people. **No PPE required**
	Distributing chronic medication and general supplies	Maintain at least 1m distance from people. **No PPE required**	Maintain at least 1m distance from people. **No PPE required**

Setting	Activity	CHW PPE	People/Patient PPE
Inside homes	**Assisting** patient who **has COVID-19** with or without any other diseases (CVA, chronic ulcer, septic wound, etc.) except for TB	**Surgical mask (single use;** ideally with visor) Gloves (single use) Apron (single use) Alcohol-based hand sanitiser (use before and after remove and discard gloves, apron and mask) Infectious waste disposal plastic bag	**Surgical mask**
	Assisting **TB patient** who **does NOT have COVID-19**	**N95 Respirator (single use)** Alcohol-based hand sanitiser Infectious waste plastic bag	**No PPE required**
	Assisting **TB patient** who **DOES have COVID-19**	**N95 Respirator (single use)** Gloves (single use) Apron (single use) Alcohol-based hand sanitiser Infectious waste plastic bag	**Surgical mask**
	Assisting patient *with* **respiratory symptoms**	**Surgical mask (single use)** Gloves (single use) Alcohol-based hand sanitiser Infectious waste plastic bag	Provide **surgical mask** to patient
	Assisting patient without **respiratory symptoms**	Maintain 1m distance from patient.	**No PPE required**

FORENSIC PATHOLOGY AND MORTUARY SERVICES

Setting	Target Personnel or Patients	Activity	Type of PPE or Procedure
Private home, hostel or hospital	**Caregivers, hospital staff, mortuary staff** transporting and preparing the body and **Forensic Pathology staff** transporting the body	**Direct contact with deceased COVID-19 and suspected COVID-19 patients**	**Surgical Mask** Apron or gown Non-sterile Gloves Eye protection (goggles or visor)
	Body of Deceased COVID-19 patients	**Deceased body being removed**	**Usual procedures for removing body**
FPS vehicle used to transport deceased	**Cleaner**	**Cleaning of vehicle**	**Surgical mask** Apron Eye protection (goggles or visor) Long rubber utility cleaning gloves (ideally up to elbow) that can be washed Closed work shoes
Mortuary	**Forensic pathology staff**	**Conducting autopsy (if required)**	**N95 Respirator** Gown Apron Eye protection (goggles or visor) Double gloves Cut-proof synthetic mesh gloves Closed work shoes

The tables above cover all the common scenarios in which PPE should be used. However, should a scenario arise which is not addressed above, then use the generic PPE principles below to decide on the appropriate PPE to use.

TYPE OF PPE	CLINICAL STAFF (nurses, doctors, EMS) Providing direct care to COVID-19 patients or patients with respiratory symptoms	NON-CLINICAL STAFF (admin staff, catering staff) coming into distant contact with COVID-19 patients and contaminated surfaces	NON-CLINICAL STAFF (cleaners) coming into distant contact with COVID-19 patients and contaminated surfaces	PATIENTS with RESPIRATORY symptoms	PATIENTS without RESPIRATORY symptoms
Gloves	Non-sterile gloves. Change between patients	Non-sterile gloves. Change when leaving COVID-19 area	Reusable long rubber utility cleaning gloves (ideally up to elbow) Change after completed cleaning contaminated area	None	None
Face cover type	**Surgical Mask** for general care of COVID-19 patients **N95 respirator** for aerosol generating procedures on COVID-19 suspects/cases	**Surgical mask** when within <1m of a patient with respiratory symptoms (one per shift, if integrity maintained)	**Surgical mask** when within <1m of a patient with respiratory symptoms	**Surgical mask** worn when in contact with others	None
Aprons	Change between patients	Change when leaving COVID-19 area	After each work session (in absence of clinical contact)	None	None
Face shields, or visors, or goggles, or other eye covers	Wash clean, disinfect and reuse	None	Wash clean, disinfect and reuse	None	None

GUIDELINES FOR USE OF A N95 RESPIRATOR FOR COVID-19

FOR AER0SOL GENERATING-PROCEDURES ONLY

- Seal tests should be performed each time a N95 respirator is used (i.e. when it is first put on)



How to wear a N-95 respirator:



Perform the seal test with every use to ensure the respirator fits properly around the face and nose

Negative seal check
Cone-shape: cup hands over respirator lightly. Breathe in sharply. No air should leak in around the face. to- Duck-bill + V-flex: Breathe in sharply. The respirator should collapse inwards

Positive seal check
Cone-shape: Cup hands over respirator. Blow out. A build-up of air should be felt with no air leaks.
Duck-bill + V-flex: Breathe out forcefully; the respirator should expand on the exhale.

- The N95 respirators should ideally be used once only and should be discarded once safely removed. However, as there is a global shortage of N95 respirators, reuse is strongly encouraged and is preferable to having no respirator.
- If HCWs are performing aerosol-generating procedures (e.g. sample collection) on several COVID-19 patients sequentially, they may use the same N95 respirator and eye protection for the session; **they must however change apron and gloves between patients.**
- As the outside surface of the N95 respirator will become heavily contaminated with the virus during aerosol-producing procedures, HCWs should take great care not to touch the outside surface and must perform careful hand hygiene after removing it.
- For reuse, carefully remove the N95 respirator using a clean paper towel and store the respirator in a clean paper bag. The paper bag must be labelled with the staff member's name. Do not crush or crumple. It can be reused for up to 1 week.
- Do NOT attempt to disinfect the N95 respirator as that destroys its integrity.
- Note that obviously damaged and visibly contaminated respirators cannot be reused.

GUIDELINES FOR SURGICAL MASK USE FOR COVID-19

- At any time if surgical masks are touched by unwashed hands, get wet, are soiled, or are removed from the face, they will become contaminated and will no longer provide effective protection. They should then be discarded.
- Masks that are not wet, were not touched by unwashed hands and were not removed from the face, can be worn for up to 8 hours.
- COVID-19 patients when inside a dedicated COVID-19 ward, where staff are wearing PPE, do not need to wear masks.
- COVID-19 patients when outside a dedicated COVID-19 ward must always wear a surgical mask. The mask can be used for up to 8 hours.

FOR HOW LONG CAN PPE BE USED?

TYPE OF PPE	CLINICAL HCW	NON-CLINICAL HCW	SYMPTOMATIC PATIENTS
Gloves	Change after each clinical contact	End of work session	N/A
Surgical Face Masks	Mask can be used up to the end of a shift if it remains dry and has not been removed from the face.	Mask can be used up to the end of a shift if it remains dry and has not been removed from the face.	When in contact with others
N95 respirator	As long as integrity is maintained and it is safely stored, it can be reused for up to 1 week.	N/A	N/A
Aprons	Change after each clinical contact	After each work session (in absence of clinical contact)	N/A
Face shields/ visors	Clean and disinfect before reuse	N/A	N/A
Goggles	Clean and disinfect before reuse	Cleaners may use same googles for each work session. Clean and disinfect before reuse	N/A

VIDEO DEMONSTRATION OF DONNING AND DOFFING OF PPE

A demonstration video for safely putting on and taking off PPE (donning and doffing of PPE) is available at:

https://player.vimeo.com/external/400607941.hd.mp4?s=af075e8c9647a23114424834c1e73f866a73e5f7&profile_id=174

INSTRUCTIONS FOR PUTTING ON AND TAKING OFF PPE (DONNING AND DOFFING PPE)

SEQUENCE FOR PUTTING ON PERSONAL PROTECTIVE EQUIPMENT (DONNING)

Wash your hands before putting on the PPE. PPE should be put on in an order that minimises contamination. The apron, mask, goggles and gloves must be put on in that order. See guidance on each below.

Apron

- ***Wash hands***
- Slip it over the head and tie the stings behind the back




Mask or N95 Respirator

- Secure each tie or elastic at the middle of head and neck
- Fit flexible band to nose bridge
- Fit snug to face and below chin
- Fit-check respirator by blowing into it (air should not leak out)



Goggles or Visor

- Place over face and eyes
- Adjust band to fit comfortably



Gloves

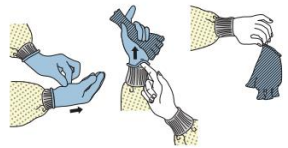
- Hold the edge of the glove as you pull it over your hand
- Extend to cover wrist
- Once gloved, do not touch other surfaces

SEQUENCE FOR TAKING OFF PERSONAL PROTECTIVE EQUIPMENT (DOFFING)

Wash your hands before taking off the PPE. PPE should be removed in an order that minimises contamination. The gloves, apron, goggles/visor, and mask must be removed in that order.* **Wash your hands after taking off the PPE.** Discard PPE in infectious waste container. See guidance below.

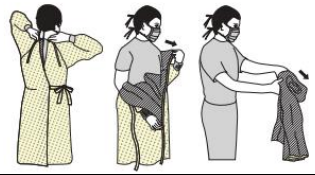
Gloves

- ***Wash hands***
- Securely grasp the outside of glove with the opposite gloved hand; peel off; discard as infectious waste
- Slide the fingers of the un-gloved hand under the remaining glove at the wrist; peel off; discard as infectious waste



Apron or Gown* (See Note)

- ***Wash hands***
- Unfasten or break apron/gown ties
- Pull the apron away from the neck and shoulders, touching the inside of the apron only and bring it forward and over the head
- Turn the apron inside out, fold or roll into a bundle and discard as infectious waste



Goggles or Visor* (See Note)

- Remove goggles/visor from the back by lifting head band or ear pieces
- Place in designated receptacle for disinfecting



Mask or N95 Respirator

- Untie or break bottom ties, followed by top ties or elastic.
- Remove by handling the ties only and discard as infectious waste.
- ***Wash hands***



***Note.** When it is practically difficult to remove the apron/gown before the visor/goggles, then the visor/goggles may be removed before the apron/gown.

Dispose of all PPE in an infectious waste container.

WASH HANDS OR USE AN ALCOHOL-BASED HAND SANITISER AFTER REMOVING GLOVES AND AFTER REMOVING ALL PPE