

**Africa Centres for Disease Control
and Prevention (Africa CDC)**

COVID-19 Guidance on Use of Personal Protective Equipment for Different Clinical Settings and Activities

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Background

This document provides guidance to African Union Member States based on a specific request from Member States for a checklist/guidance of the required personal protective equipment (PPE) needed by healthcare workers and care givers for the coronavirus disease 2019 (COVID-19) pandemic. This document has been synthesised from currently available evidence (1-6), with consideration to the African context, and as such, can be adapted to the country context.

As the COVID-19 cases continue to increase across Africa, Member States are encouraged to provide sufficient PPE for their healthcare workers and other staff whose duties require PPE. Member States should optimally utilise PPEs and make adequate plans for stockouts that could occur due to disruptions in the global supply chain of PPE.

Healthcare facilities should assign COVID-19 treatment units and implement administrative and engineering controls for COVID-19 within these units and facility-wide. In addition to preventive measures for COVID-19¹, healthcare workers and healthcare personnel must adopt standard and transmission-based precautions.

1 2019 Novel Coronavirus Disease Outbreak: What Health Care Workers Should Know

Personal Protective Equipment (PPE) for Healthcare Facilities

Health workforce/patient	Activity/procedure	Type of PPE required
Healthcare workers	Preliminary screening not involving direct contact (triage)	<ul style="list-style-type: none"> • No PPE² required if physical distancing is maintained • Otherwise, medical mask should be worn
Healthcare workers	Providing direct care (e.g. physical observations, investigations, and medications)	<ul style="list-style-type: none"> • Medical mask • Gown • Gloves • Eye protection
Healthcare workers	Entering the isolation area, but not providing direct assistance	<ul style="list-style-type: none"> • Medical mask • Gloves
Laboratory technician	Collection of laboratory samples/ diagnostic respiratory specimens (e.g., via nasopharyngeal swab)	<ul style="list-style-type: none"> • Medical mask • Gown • Gloves • Eye protection³
Healthcare workers	<p>Aerosol generating procedures</p> <ul style="list-style-type: none"> • intubation, extubation and related procedures; for example, manual ventilation • and open suctioning • cardiopulmonary resuscitation • bronchoscopy (unless carried out through a closed-circuit ventilation system) • surgery and post-mortem procedures in which high-speed devices are used • dental procedures 	<ul style="list-style-type: none"> • N-95 • Gown • Gloves • Eye protection • Apron • Face shield

2 Maintaining a distance of at least 1 m is essential if no PPE is worn

3 if risk of splash, particularly in obtaining and manipulating respiratory samples

Health workforce/patient	Activity/procedure	Type of PPE required
Healthcare workers (continuous)	<ul style="list-style-type: none"> • non-invasive ventilation (NIV) (e.g. bilevel positive airway pressure ventilation (BiPAP)) • continuous positive airway pressure ventilation (CPAP) • high frequency oscillatory ventilation (HFOV) • induction of sputum (6) 	
Administrative staff	Administrative tasks that do not involve contact with COVID-19 patients	<ul style="list-style-type: none"> • No PPE required, if physical distancing is maintained. • Non-medical masks may be considered.
Cleaners	Entering a room with a COVID-19 suspect or confirmed case, and routine cleaning of laboratory facilities	<ul style="list-style-type: none"> • Medical mask • Gown • Heavy duty gloves⁴ • Eye protection • Boots or closed work shoes
Healthcare workers and staff (assistants)	Patient transportation inside and outside the treatment facility ⁱⁱ (e.g. laboratory and radiology testing, etc.)	<ul style="list-style-type: none"> • Medical mask • Gown • Gloves • Eye protection
Healthcare workers and staff (assistants)	Assisting patient being transported to a health care facility	<ul style="list-style-type: none"> • Medical mask • Gown • Gloves • Eye protection
Driver (ambulance or transfer vehicle) ⁵	Driving a transportation vehicle/ambulance	<ul style="list-style-type: none"> • Medical Mask

4 Heavy duty gloves should be used cleaning equipment and other items, environmental cleaning, handling soiled textile items, and handling contaminated waste to conserve other gloves for patient care

5 Drivers involved only in driving the patient with suspected COVID-19 disease

Health workforce/patient	Activity/procedure	Type of PPE required
Cleaners	Cleaning ambulance after and between transport of patients	<ul style="list-style-type: none"> • Medical mask • Gown • Heavy duty gloves • Eye protection³ • Boots or closed work shoes
Patients with respiratory symptoms	Especially if transiting through general areas (e.g. for a radiograph)	<ul style="list-style-type: none"> • Medical mask (Essential)

In addition to using the appropriate PPE, frequent hand hygiene and respiratory hygiene should always be performed.

- Hand hygiene should be performed before putting on and after taking off PPE
- Staff should remove all PPE and perform hand hygiene when leaving the patient care area
- PPE should be discarded in an appropriate waste container after use
- PPE should not be worn in the nonclinical areas such as staff respite area
- Some items of PPE should be changed after every patient, (e.g. gloves, disposable aprons) to facilitate good hygiene.
- For healthcare workers who are working in COVID-19 wards or treatment centres, other items of PPE should be changed after each 'session' in the treatment area. This includes masks, eye protection and gowns. These only need to be changed after each patient if they become contaminated with body fluid.



Personal Protective Equipment for Evaluating Persons Under Investigation (PUI) in Home Settings and Management in Community Settings

Healthcare worker/personnel	Activity	Type of PPE required
Healthcare workers, rapid response team and community health workers	Direct contact when providing care	<ul style="list-style-type: none"> • Medical mask • Gown⁶ • Gloves • Eye protection
Healthcare workers, rapid response team and community health workers	Interviewing and assessing persons without symptoms (asymptomatic) and no direct contact	<ul style="list-style-type: none"> • Medical mask
Healthcare workers	Providing direct care to a COVID-19 patient at home	<ul style="list-style-type: none"> • Medical mask • Gown • Gloves • Eye protection
Healthcare workers	Collection of laboratory samples	<ul style="list-style-type: none"> • Medical mask • Gown • Gloves • Eye protection
Rapid response team and community health workers	Interviewing and assessing persons with symptoms	<ul style="list-style-type: none"> • Medical mask • Gloves • Apron • Eye protection
Caregivers	Non-professionals (e.g. family members) providing direct care or assistance for patients	<ul style="list-style-type: none"> • Gloves • Medical mask

6 Aprons may be safely substituted for gown in situations where minimal person to person contact is envisaged.

Personal Protective Equipment for Drive-through Mobile Laboratory

Healthcare worker/ personnel	Activity	Type of PPE required
Traffic control (volunteer or community health workers)	Checking in the PUI (e.g. holding signs directing the PUI to the sampling station and to not to roll down the window until at the sampling station)	<ul style="list-style-type: none"> • Medical mask
Healthcare workers, community health workers	Collection of laboratory samples	<ul style="list-style-type: none"> • Medical mask • Gown • Gloves⁷ • Eye protection
Healthcare workers and community health workers	Assisting during collection of laboratory samples	<ul style="list-style-type: none"> • Medical mask • Gown • Gloves⁵ • Eye protection
Caregivers	Providing direct care or assistance for patients	<ul style="list-style-type: none"> • Gloves • Gown • Medical mask

Special consideration

If anyone inside the participant vehicle rolls down the window before instructed, any workers in the vicinity should step back 1 m and instruct the participant to roll the window back up.

If anyone inside the participant vehicle exits the car, any workers in the vicinity should step back and maintain 1 m distance and instruct the participant to get back inside the vehicle.

At no point should there be any contact with the participant or anyone from the vehicle. If any accidental exposure has occurred, they should doff any affected PPE and don fresh PPE.

⁷ For these roles one pair of gloves is the minimum necessary; however, gloves should be doffed after each patient and hands should be washed or sanitized.

Personal Protective Equipment for Autopsy and Burial

General consideration

Except in cases of viral haemorrhagic fevers (such as Ebola, Marburg) and cholera, dead bodies are generally not infectious. Only the lungs of patients with pandemic influenza, if handled improperly during an autopsy, can be infectious. Otherwise, cadavers do not transmit disease. To date, there is no evidence of persons having become infected from exposure to the bodies of persons who died from COVID-19.

The safety and well-being of everyone who attends to bodies should be the priority. Before attending to a body, people should ensure that the necessary hand hygiene and PPE supplies are available.

While performing the rites during the burial, it is important that social distancing is maintained. The dignity of the dead, their cultural and religious traditions, and their families should be respected and protected throughout.



Key personnel	Activity	Type of PPE required
Healthcare workers/ Mortician	Preparing the body for transfer from a patient room to an autopsy unit, mortuary, crematorium, or burial site	<ul style="list-style-type: none"> • Disposal (heavy duty) gloves • Long sleeved gown • Medical Mask • Eye protectionⁱⁱⁱ
Healthcare workers	Autopsy	<ul style="list-style-type: none"> • Disposal gloves • Long sleeved gown • Medical mask • N95 (to be worn if there are any aerosol generating procedures during the autopsy). • Face shield • Rubber gloves • Apron
Mortician/ mortuary attendant	Mortuary care	<ul style="list-style-type: none"> • Disposal gloves • Long sleeved gown • Medical mask • Face shield
Mortician/ family members	Religious observation – care of body by family members e.g. body washing	<ul style="list-style-type: none"> • Disposal gloves • Long sleeved gown or Apron • Medical mask • Eye protection • Face shield

Adhere to the national and local requirements that dictate the handling and disposition of the remains.

A minimum number of people should be involved in preparations. Those preparing the body for viewing and burial should wear PPE. Others may observe without touching the body at a minimum distance of 1 m.

Family and friends may view the body after it has been prepared for burial, in accordance with customs. They should not kiss the body,

but the body may be touched if gloves are worn. Family and friends must wash hands thoroughly with soap and water after the viewing.

Those tasked with placing the body in the grave, on the funeral pyre, etc. should wear gloves and wash hands with soap and water after removal of the gloves once the burial is complete.

Standards for PPE

All PPE should conform to specific standards to ensure that it is able to protect healthcare workers as intended.

Here follows a more detailed description and standards for each of the items of PPE listed above.

Item	Description	Relevant testing standards
Apron	<ul style="list-style-type: none"> • Straight apron with bib, Fabric: 100% polyester with PVC coating, or 100% PVC, or 100% rubber, or other fluid resistant coated, or waterproof material. • Sewn strap for neck and back fastening. • Minimum basis weight: 300g/m² covering size: 70-90 cm (width) X 120-150cm (height) • Reusable (provided appropriate arrangements for decontamination are in place) 	<p>Acceptable standards</p> <ul style="list-style-type: none"> • EN ISO 13688 • EN 14126-B and partial body protection (EN 13034 or EN 14605) • EN 343 for water and breathability or equivalent
Boots or closed toe shoes	<ul style="list-style-type: none"> • Nonslip, with a PVC sole that is completely sealed • Rubber, etc. • Reusable 	
Face shield	<ul style="list-style-type: none"> • Made of clear plastic and provides good visibility to both the wearer and the patient 	<ul style="list-style-type: none"> • EU PPE regulation 2016/425 • EN 166 • ANSI/ISEA Z871, or equivalent set of standards

Item	Description	Relevant testing standards
Face shield (continuous)	<ul style="list-style-type: none"> • Adjustable band to attach firmly around the head and fit snugly against the forehead • Fog resistant (preferable). Completely cover the sides and length of the face. • May be re-usable (made of robust material, which can be cleaned and disinfected) or disposable 	
Gloves	<ul style="list-style-type: none"> • Gloves, examination, nitrile, powder-free, non-sterile. Single use (e.g. minimum 230mm total length) 	<ul style="list-style-type: none"> • EU MDD Directive 93/42/EEC Category III • EU PPE Regulation 2016/425 Category III • EN 455 • EN 374 • ANSI/ISEA 105 • ASTM D6319, or equivalent set of standards
Goggles	<ul style="list-style-type: none"> • Good seal with the skin of the face • Flexible PVC frame to easily fit with all face contours with even pressure • Enclose eyes and the surrounding areas and accommodate wearers with prescription glasses • Clear plastic lens with fog and scratch resistant treatments • Adjustable band to secure firmly so as not to become loose during clinical activity • Indirect venting to avoid fogging • May be re-usable (provided appropriate arrangements for decontamination are in place) or disposable 	<ul style="list-style-type: none"> • EU PPE Regulation 2016/425 • EN 166 • ANSI/ISEA Z87.1, or equivalent

Item	Description	Relevant testing standards
Gown	<ul style="list-style-type: none"> Single use or reusable, disposable, length mid-calf. 	<ul style="list-style-type: none"> EU PPE Regulation 2016/425 and EU MDD directive 93/42/EEC FDA class I or II medical device, or equivalent EN 13795 any performance level, or AAMI PB70 all levels acceptable, or equivalent
Heavy duty gloves/ disposal	<ul style="list-style-type: none"> Outer glove should have long cuffs, reaching well above the wrist, ideally to mid-forearm. Cuff length preferably reach mid-forearm (e.g. minimum 280mm total length). Reusable 	<ul style="list-style-type: none"> Puncture resistant, FDA compliant EN374
Medical masks	<ul style="list-style-type: none"> Medical mask, good breathability, internal and external faces of mask should be clearly identified 	<ul style="list-style-type: none"> EU MDD Directive 93/42/EEC Category III, or equivalent EN 14683 Type II, IR, IIR ASTM F2100 minimum Level 1 or equivalent
Respirators	<ul style="list-style-type: none"> N95 or FFP2 respirator, or higher (N99 or FFP3). Good breathability with design that does not collapse against the mouth. May or may not have an exhalation valve. 	<ul style="list-style-type: none"> Minimum "N95" respirator according to FDA Class II, under 21 CFR 878.4040, and CDC NIOSH, or Minimum "FFP2" according to EN 149, EU PPE Regulation 2016/425 Category III, or equivalent
Scrubs	<ul style="list-style-type: none"> Top or tunic: short sleeves Trousers: drawstring waist enclosure Uniform, woven, cotton, unisex, reusable 	<ul style="list-style-type: none"> Tightly woven Minimum linting Quick dry material Medical purpose

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 - i Africa CDC Guidance on Community Use of Face Masks
 - ii Movement of patients should be limited
 - iii If risk of splash, particularly when manipulating the body



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