

# PERSONAL PROTECTIVE EQUIPMENT RECOMMENDATIONS DURING HEALTH CARE DELIVERY

FOR PATIENTS WITH SUSPECTED  
OR CONFIRMED COVID-19  
INFECTION

## NCDC INTERIM GUIDANCE

The guidance is intended for all healthcare workers (HCWs), the facility management team and Infection Prevention and Control (IPC) teams at all levels of healthcare in Nigeria

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## INTRODUCTION

This guidance is for all healthcare workers (HCWs), the health facility management and Infection Prevention and Control (IPC) teams at all levels of healthcare in Nigeria. It is intended to be used in planning for Personal Protective Equipment (PPE) needs in care of suspected or confirmed COVID-19 patients. It complements the NCDC interim guidance on Infection prevention and control recommendations during health care when COVID-19 infection is suspected.

Healthcare services in Nigeria will need to be prepared to manage patients who have acquired SARS-CoV-2 infection. While there are designated isolation centres planned for treating confirmed COVID-19 patients located in eight priority states with major international airports in Nigeria; every health facility should be prepared to safely manage suspect cases with designated holding/isolation areas before they are transferred to designated treatment centres.

There is still limited information on human-to-human transmission but respiratory droplets are considered to be the main route of transmission. Other routes, such as contact with contaminated fomites and inhalation of aerosols produced during aerosol-generating procedure may also be involved.

## Summary of Key IPC strategies to limit or prevent transmission in healthcare settings include the following:

1. Ensuring triage, early recognition, and source control (isolating) of patients with suspected SARS CoV-2 (COVID-19) infections.
2. Application of standard precautions for all patients at all times
3. Implementation of empiric additional precautions – droplet and contact in the care of suspected and confirmed cases of COVID-19 and airborne precautions (in certain situation when aerosol generating procedures are carried out on COVID-19 patients).
4. Implementing administrative controls.
5. Use of environmental and engineering controls such as adequate spatial separation of patients, appropriate ventilation and appropriate cleaning of the environment.

### Standard precautions

The goal of standard precautions is to reduce the risk of transmission of microorganisms from both recognized and unrecognized sources of infection. They should be used every time health care is practiced and should become second nature as part of healthcare practice. When correctly implemented, the spread of the COVID-19 can be prevented or minimised.

Standard Precautions are very important in the care of all patients including those with respiratory infections such as COVID-19 infections. Elements of Standard Precautions to be strictly adhered to are:

- Hand hygiene
- Respiratory hygiene and cough etiquette
- Appropriate use of PPE (based on risk assessment) e.g. Gloves, Facial protection for (eyes, nose and mouth), gowns etc
- Patient placement with adequate ventilation
- Safe handling, cleaning and disinfection of patient care equipment
- Environmental cleaning
- Safe handling and cleaning of soiled linen
- Waste management
- Safe injection practices
- Sharps management and injury prevention

### Overview of PPEs

Personal protective equipment (PPE) are designed to protect the wearer’s skin, eyes, mucous membranes, airways and clothing from coming into contact with infectious agents. Mucous membranes and skin with compromised integrity are portals of entry that are highly susceptible to infectious agents such as COVID-19. It is important to note that the use of PPE is not a substitute for proper infection prevention and control practice: for example, the use of gloves is not a substitute for hand hygiene.

Healthcare workers who provide care to COVID-19 patients must be proficient in donning and doffing and this requires specific training.

Who should wear protective clothing? Select which PPE items to wear based on this assessment:

Risk assessment is critical for all activities. This is the assessment of each health care activity to help determine the personal protective equipment (PPE) that is needed for adequate protection in the performance of such activity.

**Note: The choice and combination of PPE ensemble to be worn in dealing with COVID-19 patients should be based on a careful risk assessment that considers risk of exposure and extent of contact anticipated with respiratory droplets, blood, body fluids, and/or open skin.**

**Table 1: PPE recommendations in the care and management of suspected or confirmed cases of COVID-19**

<b>In patient settings</b>			
	Target personnel	Activity	Type of PPE or IPC precaution
Patient room	Healthcare workers	Providing direct care to COVID-19 patients.	Medical mask Gown Gloves Eye protection (goggles or face shield).
		Aerosol-generating procedures performed on	Respirator N95 or FFP2 standard, or equivalent. Gown

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		COVID-19 patients.	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
	All staff, including healthcare workers.	Any activity that does not involve contact with COVID-19 patients.	No PPE required
Other areas of patient transit (e.g., wards, corridors).	All staff, including healthcare workers.	Any activity that does not involve contact with COVID-19 patients.	No PPE required
Triage	Healthcare workers	Preliminary screening not involving direct contact.	Maintain spatial distance of at least 1 m. No PPE required
	Patients with respiratory symptoms.	Any	Maintain spatial distance of at least 1 m. 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 healthcare workers.	Administrative tasks that do not involve contact with COVID-19 patients.	No PPE required
<b>Outpatient facilities</b>			


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Consultation room	Healthcare workers	Physical examination of patient with respiratory symptoms.	Medical mask Gown Gloves Eye protection
	Healthcare 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 m from other patients.
	Patients without respiratory symptoms.	Any	No PPE required
Administrative areas	All staff, including healthcare workers.	Administrative tasks	No PPE required
Triage	Healthcare workers	Preliminary screening not involving direct contact.	Maintain spatial distance of at least 1 m. No PPE required

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	Patients with respiratory symptoms.	Any	Maintain spatial distance of at least 1 m. Provide medical mask if tolerated.
	Patients without respiratory symptoms.	Any	No PPE required

**Table 2: These are some PPE and their characteristics**




PPE	Characteristics and how to use
<p>Eye protection (goggles or face shield)</p> 	<p>Face shield or goggles when used are meant to adequately protect the healthcare workers conjunctival mucous membranes from sprays of droplet when in close proximity (&lt;1m) from a patient.</p> <p>Normal reading glasses are not acceptable as PPE for eye protection so a face shield with anti-fog should be worn over the glasses or goggles big enough to cover the glasses</p> <p>Goggles must fit comfortably and securely; each person should have his/her own goggles/face shield with personal names on them.</p> <p>Condensation of the goggles can be a major problem: it impairs the user’s vision and is dangerous but can be minimized by anti-fog spray</p>





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<p>Mouth and nose protection (Surgical or Medical mask)</p>	<p>Patients with respiratory symptoms should be given a surgical mask to wear as part of source control.</p> <p>Healthcare workers need to cover the mouth and nose with a medical mask to avoid droplet sprays when in close proximity (&lt;1m) from a patient.</p> <p>Medical/surgical mask should be fluid-resistant with structured design that does not collapse against the mouth</p>
<p>Respiratory protection (N95, FFP2)</p> 	<p>The respirator protects from the inhalation of airborne particles.</p> <p>A respirator should always be used when performing aerosol-generating procedures in a COVID-19 patient.</p> <p>Given that the fitting of different types of respirator will vary for each user, the respirator will require a fit test in order to find the best match of PPE for each user.</p> <p>A seal check should always be performed by the healthcare worker each time an N95 is worn.</p>
<p>Gloves</p>	<p>Correctly sized latex or nitrile examination gloves should be used to protect hands against both direct and indirect contact with respiratory fluids and other body fluids</p>

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	<p>A new pair of gloves should be used for each patient. Remember that for invasive procedures you need sterile gloves.</p> <p>DO NOT touch face especially eyes, nose or mouth areas with gloved hands.</p>
<p>Body protection (gowns)</p> 	<p>Long-sleeved water-resistant gowns should be used in the care of suspect or confirmed COVID-19 patients as part of droplet and contact precautions.</p> <p>The gown does not need to be sterile, unless used in a sterile environment (e.g. operating room).</p>
<p>Apron</p> 	<p>If water-resistant gowns are not available, single-use plastic aprons can be used on top of the non-water-resistant gowns to prevent body contamination. Fluid-proof aprons provide extra protection of the front part of the body and is easier to replace than a soiled gown .</p> <p>Disposable aprons should be used</p>
<p>Head cover</p>	<p>The purpose of head covers is to protect the skin and hair from virus contamination with subsequent unrecognized transmission to the mucosa of the eyes, nose or mouth.</p>

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<p>Heavy-duty rubber gloves/Utility gloves</p> 	<p>Cleaners, laundry personnel, healthcare workers when handling infectious waste (i.e. solid waste or any housekeeping duties) should wear heavy duty rubber gloves over nitrile gloves.</p> <p>Movement of human remains or performing environmental cleaning activities also requires the use of heavy-duty rubber gloves.</p>
<p>Before exiting isolation area, carefully remove PPE and dispose in waste containers in a designated doffing area. If aerosol generating procedure was performed, remove the N95 mask only when outside patient’s isolation room.</p> <p>Do not recycle any single-use PPE.</p> <p>Remove PPE under supervision of a trained buddy while avoiding any contact with soiled items and areas of the face or skin.</p> <p>Place reusable equipment (Goggle or face shield) in bin for decontamination.</p>	

The correct procedure for donning and doffing of PPE should be followed.

Disposable PPE should be treated as potentially infectious material and disposed of in accordance with the relevant national rules. Non single-use PPE should be decontaminated in accordance with the manufacturer’s instructions.

## References

1. European Centre for Disease Prevention and Control. Guidance for wearing and removing personal protective equipment in healthcare settings for the care of patients with suspected or confirmed COVID-19. Stockholm: ECDC; 2020
2. Infection prevention and control for coronavirus disease (COVID-19): Interim guidance for acute healthcare settings. <https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/health-professionals/interim-guidance-acute-healthcare-settings.html> Accessed 18/02/2020
3. Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected. Interim guidance. 25 January 2020. [WHO/2019-nCoV/IPC/v2020.2](#)
4. Interim Infection Prevention and Control Recommendations for Patients with Confirmed Coronavirus Disease 2019 (COVID-19) or Persons Under Investigation for COVID-19 in Healthcare Settings. [https://www.cdc.gov/coronavirus/2019-ncov/infection-control/control-recommendations.html?CDC\\_AA\\_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fhcp%2Finfection-control.html](https://www.cdc.gov/coronavirus/2019-ncov/infection-control/control-recommendations.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fhcp%2Finfection-control.html) Accessed 22/02/2020
5. Rational use of personal protective equipment for coronavirus disease 2019 (COVID-19). World Health Organization Interim guidance. 27 February 2020.