National Guidelines on Infection Prevention and Control for COVID-19

December 2020

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Version Control & Document History

<table>
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<tr>
<th>Date</th>
<th>Summary of modifications made</th>
<th>Version no</th>
</tr>
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<tbody>
<tr>
<td>June 2020</td>
<td>Created</td>
<td>V1</td>
</tr>
<tr>
<td>December 2020</td>
<td>Restructure. Updated all sections. Added specific sections on IPC in Community Settings and IPC for Healthcare workers</td>
<td>V2</td>
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</table>
Acknowledgment

This National Guideline for Infection Prevention and Control in the context of COVID-19 in Healthcare Settings have been developed through the contributions of the National Department of Health, the World Health Organisation and the Australian Government, through the PNGAus Partnership.

This National Infection Prevention and Control Guideline, in the context of COVID-19 virus for healthcare settings, is very important for all healthcare workers in PNG. The document provides evidence-based guidelines to deliver safe and quality health services based on high standards of IPC practices.

I express my appreciation and gratitude to the consultants engaged and the technical advisers and officers within the Department of Health and our Development Partners in developing this very important document for the healthcare setting in our country.

Dr Osborne Liko
Secretary for Health
## Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABHR</td>
<td>Alcohol based hand-rub</td>
</tr>
<tr>
<td>AGP</td>
<td>Aerosol-generating procedure</td>
</tr>
<tr>
<td>ARI</td>
<td>Acute respiratory illness</td>
</tr>
<tr>
<td>CHW</td>
<td>Community Health Worker</td>
</tr>
<tr>
<td>COVID-19</td>
<td>Coronavirus disease 19</td>
</tr>
<tr>
<td>CPR</td>
<td>Cardiopulmonary resuscitation</td>
</tr>
<tr>
<td>HW</td>
<td>Healthcare worker</td>
</tr>
<tr>
<td>ICU</td>
<td>Intensive care unit</td>
</tr>
<tr>
<td>ILI</td>
<td>Influenza-like-illness</td>
</tr>
<tr>
<td>IPC</td>
<td>Infection, prevention and control</td>
</tr>
<tr>
<td>NDOH</td>
<td>National Department of Health, Papua New Guinea</td>
</tr>
<tr>
<td>PHA</td>
<td>Provincial Health Authority</td>
</tr>
<tr>
<td>PPE</td>
<td>Personal protective equipment</td>
</tr>
<tr>
<td>RRT</td>
<td>Rapid response team</td>
</tr>
<tr>
<td>SARS CoV-2</td>
<td>Severe acute respiratory syndrome coronavirus 2</td>
</tr>
<tr>
<td>SARI</td>
<td>Severe acute respiratory infection</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
</tr>
</tbody>
</table>
## Glossary

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adequately ventilated patient room (or area)</td>
<td>A patient room or area that has good ventilation, without controlled direction of airflow. By definition a naturally ventilated room is considered to be 60 litres/second (L/s) per patient. Most facilities in PNG will be naturally ventilated (or may have mixed-mode ventilation). A room with a high ventilation rate and a controlled direction of airflow that can be used to care for people with SARI. Rooms with natural or mixed-mode ventilation.</td>
</tr>
<tr>
<td>Airborne Precaution room</td>
<td>The spread of an infectious agent caused by the spreading of droplet nuclei, that remain infectious when suspended in air over long distances and time.</td>
</tr>
<tr>
<td>Alcohol-based hand rub</td>
<td>An alcohol-containing preparation designed for application to the hands for antisepsis.</td>
</tr>
<tr>
<td>Anteroom</td>
<td>A small room leading from a corridor into another room, often an isolation room.</td>
</tr>
<tr>
<td>Cohorting</td>
<td>Placing patients infected with the same laboratory-confirmed pathogens in the same designated ward or zone (with or without the same staff).</td>
</tr>
<tr>
<td>Contact transmission</td>
<td>The spread of pathogens by physical contact of a host with people or objects.</td>
</tr>
<tr>
<td>● Direct contact transmission involves transmission directly from one person to another (eg: from the hands of someone to another persons’ hand)</td>
<td></td>
</tr>
<tr>
<td>● Indirect contact transmission involves an object (eg: from one person’s hands, to a table, then to the hands of someone else)</td>
<td></td>
</tr>
<tr>
<td>Disinfection</td>
<td>A process that eliminates pathogenic microorganisms from objects.</td>
</tr>
<tr>
<td>Droplet transmission</td>
<td>The spread of a pathogen caused by the spreading of droplets during coughing, sneezing and talking. Transmission occurs when these droplets (containing microorganisms) are propelled through the air and land on the eyes, mouth or nose of another person. Most pathogens do not remain suspended in the air.</td>
</tr>
<tr>
<td>Environmental ventilation</td>
<td>There are three types of environmental ventilation throughout health facilities in PNG:</td>
</tr>
<tr>
<td>● Mechanical environmental ventilation uses mechanical fans to introduce or exhaust outdoor or properly treated recycled air into or out of a building or a room.</td>
<td></td>
</tr>
<tr>
<td>● Natural ventilation - in these rooms airflow is free-flowing, relying on open doors and windows to bring air in from the outside; unrestricted openings (such as windows or louvres) on the opposite side to the door are the most effective method of achieving adequate ventilation.</td>
<td></td>
</tr>
<tr>
<td>● Mixed-mode ventilation, using mechanical fans or wind-driven roof turbines (known “whirly birds”) that assist in controlling the air and direction of airflow.</td>
<td></td>
</tr>
<tr>
<td>Hand hygiene</td>
<td>A general term that applies to handwashing, antiseptic handwashing, antiseptic hand rubbing or surgical hand antisepsis.</td>
</tr>
<tr>
<td>Healthcare facility</td>
<td>Any building, hut, tent or structure that is engaged in the direct care of patients.</td>
</tr>
<tr>
<td>Healthcare worker</td>
<td>HW’s are people engaged in actions that enhance health. This includes a variety of professionals such as nurses, midwives, midwives, cleaners, physiotherapists, pharmacists and hospital kitchen staff.</td>
</tr>
</tbody>
</table>
### Infection prevention and control (IPC)

The work concerned with preventing healthcare-associated infection. IPC is an essential part of the health care infrastructure. Its purpose is to:

- prevent healthcare-associated infections
- prepare facilities for the early detection and management in health crises
- support efforts to control community-acquired diseases
- support the prevention of antimicrobial resistance
- minimize the impact of these infections in the community and environment

### Isolation

The separation of people with suspected or confirmed COVID-19 from healthy people to help stop the spread of infection.

### Isolation precautions

Measures designed to reduce the chance of infections spreading. Isolation precautions can be separated into:

- Standard Precautions – these should be in place for all patient care;
- Additional (or transmission-based) precautions – these are required in particular circumstances and include Contact, Droplet and Airborne Precautions.

### Infectious waste

Waste capable of causing infections in humans, including contaminated animal waste, human blood and blood products, waste from isolation areas, human tissue, and discarded sharps (needles, scalpels or broken medical instruments).

### Medical mask

See surgical mask.

### Pandemic

An epidemic that affects many countries or regions, usually affecting many people.

### Quarantine

The separation (and restriction of activities) of a well person who may have been exposed to COVID-19.

### Respirator mask

A type of facial mask (such as a N95 mask) that uses a filter as an integral part of the facepiece, or in which the entire facepiece is composed of the filtering medium and a means of sealing to the face.

### Respiratory hygiene

The practice of covering the mouth and nose during coughing or sneezing (using a surgical mask, cloth mask, tissues, a sleeve or flexed elbow), followed by hand hygiene.

### Severe acute respiratory infection (SARI)

An acute respiratory infection, caused by a pathogen, with the following features:

- history of fever or measured fever of ≥ 38°C
- and cough
- with onset within the last 10 days
- and requires hospitalization

Although the range of symptoms varies, the onset is usually fast, ranging from hours to days after infection. The pathogens that cause this disease include influenza virus, respiratory syncytial virus (RSV) and COVID-19.

### Surgical mask

May also be known as a medical mask. As PPE it is intended to protect caregivers and health-care workers against droplet-transmitted pathogens, or to protect from activities that cause splashes or spills. In this document, the term refers to disposable masks only.
Introduction

Coronavirus disease (COVID-19) is an infectious disease caused by a newly discovered coronavirus identified in 2019. The virus that causes COVID-19 has since been named SARS CoV-2 (Severe Acute Respiratory Syndrome Coronavirus 2). Common signs of infection include fever, respiratory symptoms, cough, shortness of breath and breathing difficulties. In more severe cases, infection can cause pneumonia, severe acute respiratory syndrome, kidney failure and even death.

On 11 March 2020, COVID-19 was characterized by the World Health Organization (WHO) as a pandemic. Papua New Guinea (PNG) remains on high alert while its National Emergency Operations Centre (NEOC) continues to coordinate national preparedness and response measures guided by its Emergency Preparedness and Response Plan for COVID-19.

Whilst it is not possible to predict the future course of the outbreak, it is important to plan for a scenario in which many people become sick and need health care. Preserving the function of the healthcare system is vital and it is important that healthcare facilities provide care for all patients at whatever level they require (be it home care, outpatient, hospitalization and intensive care), irrespective of their COVID-19 infection status.

Great efforts are required by all to reduce the transmission of the virus, direct people to the right level of care and decrease the burden placed on the healthcare system.

These guidelines have been developed to standardise COVID-19 IPC measures across the 22 provinces of PNG and ensure that evidence-based care is delivered.

Purpose of the guideline

This guideline is intended for public health and infection prevention and control (IPC) teams, healthcare managers and healthcare facility and community-based health workers throughout Papua New Guinea.

The purpose is to provide guidance on infection, prevention and control requirements for the management of patients with suspected, probable or confirmed COVID-19. It is based on current information and the guideline will be updated as data and further evidence become available.

Key concepts in this guideline

1. **Limit transmission into and throughout healthcare facilities.** Factors to be considered include limiting points of entry, restricting visitors, screening patients for COVID-19 symptoms and encouraging respiratory hygiene at all times.

2. **Isolate symptomatic patients as soon as possible.** Set up separate, well-ventilated screening and assessment areas, isolate suspect and confirmed patients and prioritize airborne isolation rooms for patients undergoing aerosol generating procedures (AGPs).

3. **Protect health care workers.** Emphasize hand hygiene, install physical barriers to maintain distance from suspected COVID-19 cases at screening, segregate suspected COVID-19 cases from the general population, cohort confirmed COVID-19 patients together, limit the number of staff providing care to COVID-19 patients,
have dedicated staff looking after confirmed COVID cases who are not working elsewhere and provide adequate and appropriate personal protective equipment (PPE) to protect staff. Ensure staff wearing appropriate PPE and are provided with up to date, appropriate training.
1. Infection prevention and control (IPC) principles in the context of COVID-19

To achieve the highest level of effectiveness in the response to the COVID-19 outbreak using the strategies and practices recommended in this document, ensure that an IPC programme with a dedicated and trained team (or at least one IPC focal point) are in place and supported by the Department of Health, Provincial Health Authority, District and Healthcare facility senior management.

COVID-19 transmission

COVID-19 is predominantly spread through close contact from person to person, including between people who are physically near each other (within about 1.5 metres).

- **Droplet transmission**: Droplets (infectious particles larger than 5 microns in size) from infected persons transmitted through coughing, sneezing, speaking and singing which has direct contact with the eyes, nose, mouths of people within close distance.

- **Contact transmission**:
  - **direct** physical contact with the infected person
  - **indirect** contact from shared patient care equipment or from contaminated environmental surfaces.

- **Airborne transmission**: spread caused by the dissemination of droplet nuclei (aerosols) that remain infectious when suspended in air over long distances and time. Airborne transmission of COVID-19 can occur during medical procedures that generate aerosols (“aerosol generating procedures”).

COVID-19 case definitions

Case definitions can change frequently as more information is gathered about the virus. All clinicians and those working in screening areas must refer to the latest case definitions to guide COVID-19 management. Clinicians should refer to the latest Surveillance SOP\(^1\) and Clinical Management guidelines\(^2\) for up-to-date information on case definitions. Below are the current case definitions at the time of publishing this document.

**Close contact**

People who are designated as close contacts of an infected person are at highest risk of acquiring infection.

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\(^1\) COVID-19 surveillance Standard Operating Procedure

\(^2\) COVID-19 Clinical Management guidelines
Definition of close contact

- Had **face-to-face contact** for greater than **15 minutes** or **shared a closed space** for more than **two hours** with a **confirmed** case (cumulative over the course of a week), in the period extending from **48 hours** before the onset of symptoms in the confirmed case, OR
- Been exposed to an **outbreak setting** or **exposure site** where there is a higher risk of spread in that setting.

Additionally, for **health workers (HW):**

- Persons with **direct physical contact** with a **probable** or **confirmed** case, **direct care** for a patient with **probable** or **confirmed** case **without using appropriate PPE**, and other situations as indicated by local risk assessments

HW and other people who have taken recommended infection control precautions, including the use of appropriate PPE, while caring for or in the presence of confirmed COVID-19 case/s are **not** considered to be close contacts. For further information, see section 6. **Management of COVID-19 infection in the health-care worker.**

Case definitions

Case definitions combine clinical (such as signs and symptoms) and epidemiological criteria. These definitions are to be used to guide patient management.

<table>
<thead>
<tr>
<th>Suspected COVID-19 case</th>
<th>A person who meets the clinical OR epidemiological criteria:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Clinical criteria:</strong></td>
<td>A patient with respiratory illness presenting with at least 1 or more of the following symptoms:</td>
</tr>
<tr>
<td></td>
<td>• Fever (above 37.5°C or history of fever)</td>
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<tr>
<td></td>
<td>• Cough</td>
</tr>
<tr>
<td></td>
<td>• Shortness of breath</td>
</tr>
<tr>
<td></td>
<td>• Sore throat</td>
</tr>
<tr>
<td></td>
<td>• Loss of smell or taste</td>
</tr>
<tr>
<td></td>
<td>• Fatigue</td>
</tr>
<tr>
<td><strong>Epidemiological Criteria:</strong></td>
<td>Close contact with confirmed COVID-19 case in 14 days prior to onset of symptoms.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Probable COVID-19 case</th>
<th>A person meeting both clinical AND epidemiological criteria OR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Clinically suspected case</strong> for whom testing could not be performed for any reason OR</td>
<td></td>
</tr>
<tr>
<td><strong>Suspected case</strong> for whom testing for COVID-19 is inconclusive by laboratory testing.</td>
<td></td>
</tr>
</tbody>
</table>
**Confirmed COVID-19 case**
A person with laboratory confirmation (rt-PCR or GeneXpert) of COVID-19 infection, irrespective of clinical signs and symptoms.

**When someone is no longer a suspect, probable or confirmed COVID-19 case**
- In the same way that people can become suspected or confirmed COVID-19 cases, they can revert to a general population status following a negative test result or recovery.
- Refer to the COVID-19 Clinical Management guidelines for further details of when a person no longer requires to be isolated.

**COVID-19 death**
A COVID-19 death is defined for surveillance purposes as:
- A death resulting from a clinically compatible illness in a probable or confirmed COVID-19 case, unless there is a clear alternative cause of death that cannot be related to COVID-19 disease (e.g. trauma).
There should be no period of complete recovery between the illness and death.

Reference: PNG COVID-19 surveillance SOP

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**IPC measures for everyone**

Effective measures to reduce the risk of COVID-19 transmission include good hand and respiratory hygiene, physical distancing, staying home and avoiding mass gatherings, getting tested if you are unwell, and wearing a face mask. For advice for people who are feeling unwell, see section 2. IPC in Community settings.

All stakeholders, including business houses, non-government organizations (NGO’s), churches, communities and individuals are encouraged to take the lead in protecting their community and loved ones from COVID-19. Everyone can take ownership by adhering to best practices of prevention and promoting national guidance as per the PNG ‘Niupela Pasin’ COVID-19 website.

**Do the five, help stop the spread**

1. **Hands**: Wash them often
2. **Elbow**: Cough into it
3. **Face**: Don’t touch it
4. **Space**: Keep safe distance
5. **Home**: Stay if you can

HW will need to take additional precautions, depending on their role and work setting.

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3 COVID-19 Clinical Management guidelines
4 PNG COVID-19 surveillance SOP (Version 3, 19 October 2020)
Standard precautions for all patients

Standard precautions represent the minimum infection prevention measures that apply to all patients at all times every day. Standard precautions also need to be used at all times for patients with suspected or confirmed COVID-19.

These standard precautions are designed to prevent the spread of infection to protect patients and HW’s.

Standard precautions include:

- Hand and respiratory hygiene (including use of masks)
- Appropriate use of PPE
- Safe injection practices and disposal of sharps

Hand hygiene

Regular hand-hygiene is one of the most effective actions HW’s can take to reduce the spread of COVID-19. Hand hygiene includes either cleansing hands with an alcohol-based hand rub (ABHR) or with soap and running water.

HWs should apply the World Health Organization (WHO) 5 moments of hand hygiene approach before touching a patient, before any clean or aseptic procedure is performed, after exposure to body fluid, after touching a patient, and after touching a patient’s surroundings.

Hand hygiene tips

- **ABHRs** are preferred if hands are not visibly soiled; All surfaces of the hands should be rubbed with ABHR for 20-30 seconds. Allow to dry well before touching a patient or surfaces.
- **Wash hands with soap and water** when they are visibly soiled; Once hands are wet all surfaces are washed thoroughly with soap for at least 30 seconds, then rinsed and dried thoroughly with a towel.
- **Soap** is particularly effective at inactivating an enveloped virus like COVID-19 due to its oily surface. The surface is dissolved by soap thereby killing the virus. The mechanical action of handwashing is also effective at removing the virus.

For further information, see:

- Annex 1 WHO 5 moments of hand hygiene approach
- Annex 2 Poster: How to handrub
- Annex 3 Poster: How to handwash
- Annex 4: Handwashing alternatives if no water or soap is available
Respiratory hygiene

Respiratory hygiene and cough etiquette are also important measures to reduce transmission of COVID-19.

**Measures to contain respiratory secretions**

- Cover your mouth and nose with a tissue when coughing or sneezing
- If you don’t have a tissue, cough or sneeze into your flexed elbow
- Throw the tissue away immediately after use and perform hand hygiene (i.e. ABHR or hand washing with soap and water)
- Perform hand hygiene after any contact with respiratory secretions (such as wiping a child’s running nose or sneezing)
- Offer a surgical face mask to patients with suspected COVID-19 infection.

**Use of face coverings/masks**

What type of mask to wear and when, depends on how much virus is circulating where you live, where you go and who you are.

**Mask use for the general public**

- Wear a **fabric or medical/surgical mask**. This is especially important when you can’t stay physically distanced, particularly in crowded and poorly ventilated indoor settings.
- Wear a **medical/surgical mask** if you are:
  - over 60
  - have underlying medical conditions
  - feeling unwell, and/or
  - looking after an ill family member

**Mask use for health workers**

- Medical masks are essential PPE when engaging with patients with suspected, probable or confirmed COVID-19 or if you are living in an area with community transmission
- HW working at points of entry such as screening or ED must wear a mask.
- Respirator masks (such as N95) should only be used when performing an AGP or when working in settings where AGPs are performed. A respirator mask must be fitted to ensure it is worn correctly and safe to use (see Annex 8: How to perform a mask seal check).
How to wear a mask

- Clean your hands before you put your mask on, as well as before and after you take it off
- Make sure it covers both your nose, mouth and chin
- Avoid touching the mask while wearing it
- Remove the mask by untying it from behind, not touching the front of the mask
- Replace masks as soon as they become damp with a new clean, dry mask
- Avoid reusing single-use masks
- Perform a mask seal check, prior to use, each time a respirator mask is applied

For further information see **WHO COVID-19 advice for the general public** and:

- Annex 6 How to perform mask seal check
- Annex 7 Do’s and don’ts of wearing a surgical mask safely

Use of Personal protective equipment (PPE)

Rational, correct, and consistent use of PPE helps to reduce the spread of pathogens.

The type of PPE used when caring for COVID-19 suspected or confirmed patients will vary according to the setting, type of personnel, and activity.

In the context of COVID-19, risk assessments are undertaken at the screening area, on assessment and throughout the patient’s care, based on the presence of symptoms or pathological confirmation. Based on this, a decision of what PPE to wear should be made and clearly communicated to the team.

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6 WHO COVID-19 advice for the general public:
<table>
<thead>
<tr>
<th>PPE according to healthcare activities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Points of entry, screening and triage personnel</strong></td>
</tr>
</tbody>
</table>
| **Caring for a suspected/confirmed case of COVID-19 with no AGP** | ● Goggles OR face shield  
● Medical mask  
● Long sleeved gown  
● Gloves |
| **Collecting respiratory specimens OR Caring for a suspected/confirmed case of COVID-19 with AGP** | ● Goggles OR face shield  
● Respirator mask (e.g. N95 or FFP2)  
● Long sleeved gown  
● Apron if gown is not waterproof  
● Gloves |
| **Transport of suspected/confirmed case of COVID-19, including direct care** | ● Goggles OR face shield  
● Medical mask  
● Long sleeved gown  
● Gloves |

For further information see:
- [2. IPC in Community settings](#) (for PPE use in the community)
- [Annex 5 PPE according to risk of different healthcare activities](#)
- [Infection prevention and control during health care when coronavirus disease (COVID-19) is suspected or confirmed](#)

**Rational and appropriate use of PPE**
Overuse of PPE can lead to supply shortages. The following interventions can minimize the need for PPE while protecting HWs and others from exposure to COVID-19.

**Interventions to minimize the need for PPE**
- **Use physical barriers** to reduce exposure to the COVID-19 virus, such as plastic windows or clear plastic sheets. This approach can be implemented in areas of the healthcare setting where patients will first present, such as screening and triage areas, the registration desk at the emergency department (ED), or at the pharmacy distribution window.
- **Restrict HWs** from entering the rooms of COVID-19 patients if they are not involved in direct care. Have a dedicated team of HWs assigned to look after cohorted COVID-19 cases.
- Consider **bundling activities** to minimize the number of times a room is entered (e.g. to check vital signs during medication administration or have food delivered by HWs while they are performing other care) and plan which activities will be performed at the bedside.
• **Restrict visitors**: visitors should not enter the rooms of COVID-19 routinely. In outbreak scenarios visitor access to the hospital should be minimised or stopped. For further information see Section 3. IPC in Healthcare facilities

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**How to put on and remove PPE**

PPE is safe and effective when used correctly. PPE is “**donned**” (i.e. put on) before entering a room / zone and “**doffed**” (i.e.: removed) when leaving.

For visual guidance on how to don and doff PPE see:

- Annex 6: How to put on and remove PPE (when **all items are required**)
- Annex 7: How to put on and remove PPE for aerosol generating procedures (AGP)

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**Avoiding self-contamination and the spread of microorganisms whilst wearing PPE**

- Avoid touching hair, neck or face
- Limit surfaces touched
- Change gloves when torn or physically contaminated
- Correctly doff PPE so that ‘dirty’ PPE surfaces are not touching your skin
- Try to ‘**bundle care**’ where possible, i.e. plan ahead and do whatever is needed in “bundles” of care rather than entering and re-entering the space over and over.

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**Safe injection practices and sharps management**

Breaches in safe injection, infusion and medication vial handling practices have resulted in the transmission of human immunodeficiency disorder (**HIV**) and viral hepatitis around the world.

There are no specific changes to safe injection management in caring for a patient with COVID-19. Standard precautions in addition to contact / droplet precautions apply when administering medications / injections. Standard precautions and standard techniques should be utilised at all times.

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**Checklist for sharps management**

- Isolation areas should have designated sharps disposal units
- Sharps should be placed in a rigid disposal container at the point of use (i.e. in the isolation area)
- Sharps containers should be designated to COVID-19 isolation rooms / areas and not removed and transported for use with other patients
- Facilities should ensure they have administrative controls and processes in place to prevent occupational exposure from blood and bodily fluid splashes
Additional precautions for COVID-19 infection

Additional (or transmission-based) precautions are used when standard precautions alone are insufficient to interrupt transmission, and should be used while caring for, or in contact with a suspected OR confirmed COVID-19 case. Additional precautions include contact, droplet and airborne.

Contact and droplet precautions

In addition to standard precautions, all individuals (HW, visitors, family members etc) should apply contact and droplet precautions for suspected and confirmed COVID-19 patients.

**Principles of contact and droplet precautions**

- **Contact Precautions** protect individuals by minimising the COVID-19 transmission risk from:
  - *direct* physical contact with the patient
  - *indirect* contact from shared patient care equipment or from contaminated environmental surfaces.

- **Droplet Precautions** protect the individual's nose, mouth and eyes mucosa from droplets produced by the patient’s coughing and sneezing.

Airborne precautions

HW performing aerosol-generating procedures (AGP) should also apply airborne precautions:

**Principles of airborne precautions**

- Airborne precautions protect HWS' respiratory tract from very small and unseen airborne droplets that become suspended in the air
- Airborne transmission may occur via small-particle aerosols containing virus that remain infective over time and distance
- During AGPs, these small and unseen airborne droplets become aerosolised
- A correctly fitted respirator mask protects the wearer against these aerosolised droplets

For further information on additional precautions see:

- Section 3. IPC in Healthcare facilities
- Annex 7: How to put on and remove PPE for aerosol generating procedures (AGP)
Concepts of patient movement, transport

In general, patients with suspected or confirmed COVID-19 should move as little as possible, in order to reduce the risk of infecting other people. Movement should only occur if it is medically necessary.

### Scenarios where patient movement could occur

#### Movement between hospitals

- If a person with suspected or confirmed COVID-19 needs to travel to get a COVID-19 test. See section 2. IPC in Community settings

#### Movement within hospitals

- If a hospitalised person with suspected or confirmed COVID-19 needs an investigation (such as an xray). See section 3. IPC in Healthcare facilities
2. IPC in Community settings

In order to keep health workers and communities safe, initial screening and appropriate IPC measures should be incorporated into all community-based health care activities. Additionally, HWs should demonstrate good role modelling behaviours while in community settings. IPC guidelines remain the same regardless of the setting. It is important that HWs do a risk assessment regularly particularly prior to each activity, to ensure they are wearing the correct PPE.

Adherence to standard precautions for all people at all times, should be maintained, particularly regarding hand hygiene, surface and environmental cleaning and disinfection, and the appropriate use of PPE.

COVID-19 screening (including temperature screening) in community settings such as shops, hotels, and restaurants are not covered in this guideline, but can be referred to in a separate SOP.\(^7\)

For information on IPC measures for the general population see section 1. IPC principles in the context of COVID-19.

Guidance for community health workers (CHW)

Community health workers (CHW) have a role in case detection in the community by asking people about symptoms of COVID-19 or contact with other cases while carrying out their daily activities. CHW should be alert for people in the community with symptoms compatible with COVID-19. They should continue their work in the usual way and follow standard precautions.

In the case where a CHW identifies a suspected COVID-19 case, they should discuss with their supervisor on how to further assess the patient and plan further management. This might involve referral of the patient to a health centre, or a recommendation that the person stays at home and is assessed by a HW at home.

<table>
<thead>
<tr>
<th>Screening for COVID-19 during community-based health activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screening for COVID-19 should be done in all settings where it is indicated by the transmission scenario or local policy, or both, as part of every health care encounter. This includes home visits made for ante-natal visits or outreach programmes.</td>
</tr>
<tr>
<td>• The HW should wear a mask, maintain a physical distance of at least 1.5 metres and practice hand hygiene</td>
</tr>
<tr>
<td>Screening should include assessments of:</td>
</tr>
<tr>
<td>• Temperature (if a thermometer is available)</td>
</tr>
<tr>
<td>• Symptoms of fever (more than 37.5°C or a history of fever), cough, shortness of breath, sore throat, loss of smell or taste, fatigueCOVID-19 exposure risk (history of contact with a suspected or confirmed COVID-19 case, contact with other people with COVID-19 like symptoms at home)</td>
</tr>
<tr>
<td>• or people whose screening is negative, the health care visit can continue as usual.</td>
</tr>
</tbody>
</table>

\(^7\) PNG Standard Operating Procedure (SOP) for temperature screening
People whose screen positive are considered suspected COVID-19 cases, and the local system for isolation and management, must be activated according to national surveillance and clinical protocols.

**Additional precautions when in contact with suspected or confirmed cases**

In addition to using standard precautions for all patients, contact and droplet precautions should be used when care is provided to a person with suspected or confirmed COVID-19.

- When a patient is **suspected** to have COVID-19 infection, CHW should wear appropriate PPE (see [Use of Personal protective equipment (PPE)](Use%20of%20Personal%20protective%20equipment%20(PPE))).
- These precautions should be taken by the CHW and any other individuals, including family members, involved in supporting a person with suspected or confirmed COVID-19.

**IPC precautions for the CHW in areas with COVID-19 community transmission**

In the context of widespread community transmission, additional precautions should also be considered when CHW provide essential routine services.
<table>
<thead>
<tr>
<th>Activity</th>
<th>Type of precautions and PPE</th>
</tr>
</thead>
</table>
| **Home visit** (for example, antenatal or postnatal care, or care for a person with tuberculosis, HIV or another chronic condition) | - If feasible, conduct home visits outside in a well-ventilated space and keep a distance of at least 1.5 metres  
- Perform hand hygiene frequently and while providing care, according to WHO’s recommendations on the 5 moments for hand hygiene.  
- Wear gloves only if exposure is expected to blood, body fluids, secretions, excretions, mucous membranes or broken skin.  
- Wear a medical mask. |
| **Outreach activities and campaigns** | **When no direct contact** is involved (for example, during the distribution of insecticide-treated nets)  
- Maintain distance of at least 1.5 metre.  
- No screening required.  
- Wear a medical mask.  
- Perform hand hygiene frequently.  
**When direct contact** is involved (for example, delivering vaccinations)  
- Perform hand hygiene between each patient.  
- Wear a medical mask. |
| **Community case management of acute illness in children** | - Perform hand hygiene according to WHO’s recommendations on the 5 moments for hand hygiene.  
- If the patient is not suspected to have COVID-19: wear a medical mask and gloves for a malaria rapid diagnostic test, as per standard protocol.  
- If the patient is suspected to have COVID-19: wear full PPE (medical mask, eye protection, gloves, gown)  
- If full PPE is not available, use the modified distance community case management protocol, which maintains distance and does not involve direct contact. |
| **Any activity involving direct physical contact with a person with suspected or confirmed COVID-19** | - Perform hand hygiene according to WHO’s recommendations on the 5 moments for hand hygiene.  
- Wear full PPE (medical mask, eye protection, gloves, gown) |
Any activity not involving physical contact (including entering the room of a person with suspected or confirmed COVID-19, but not providing direct care)

- Perform hand hygiene according to the WHO recommendations on the 5 moments for hand hygiene.
- Wear a medical mask
- Maintain distance of at least 1.5 metres
- When possible, conduct interviews outdoors, with the patient also wearing a medical mask, if tolerated

Guidance for paramedics when referring patients

Patients suspected or confirmed COVID-19 might require referral to another facility for testing or for further management. The patient and accompanying staff require appropriate PPE for transfer. If AGP (eg. respiratory tract suctioning) are to be performed during transfer, accompanying staff should wear suitable PPE. Also see Annex 5: PPE according to risk of different healthcare activities.

<table>
<thead>
<tr>
<th>Person involved in ambulance or transfer vehicle</th>
<th>Activity</th>
<th>Type of Precaution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health care worker</td>
<td>Transporting suspected patient to referral facility</td>
<td>Medical mask&lt;br&gt;Long sleeved gown&lt;br&gt;Gloves&lt;br&gt;Eye protection</td>
</tr>
<tr>
<td>Driver</td>
<td>Involved only in driving the suspected patient and the driver’s compartment is separated from the patient</td>
<td>Maintain spatial distance of at least 1.5 metre&lt;br&gt;No PPE required</td>
</tr>
<tr>
<td>Patient with suspected COVID-19</td>
<td>Assisting in loading and unloading the suspected patient</td>
<td>Medical mask&lt;br&gt;Long sleeved gown&lt;br&gt;Gloves&lt;br&gt;Eye protection</td>
</tr>
<tr>
<td></td>
<td>No direct contact with the patient but no separation between driver’s and patient’s compartments</td>
<td>Medical mask</td>
</tr>
<tr>
<td></td>
<td>Transport to the referral facility</td>
<td>Medical mask if tolerated</td>
</tr>
<tr>
<td>Cleaners</td>
<td>Cleaning after and between transport of patients with suspected COVID-19 to the referral healthcare facility</td>
<td>Medical mask&lt;br&gt;Long sleeved gown&lt;br&gt;Apron&lt;br&gt;Heavy duty gloves&lt;br&gt;Eye protection (if risk of splash)</td>
</tr>
</tbody>
</table>
Guidance for rapid response and contact tracing teams

Rapid response and contact tracing team assisting the public health investigation should also wear appropriate PPE according to the following table adapted from WHO guidance. (see Annex 5: PPE according to risk of different healthcare activities).

<table>
<thead>
<tr>
<th>Activity</th>
<th>Type of Precaution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interviewing/assessing suspected or confirmed COVID-19 patients or contacts</td>
<td>No PPE if done remotely (e.g. by telephone) This is the preferred method.</td>
</tr>
<tr>
<td>In person interview/assessment of suspected or confirmed COVID-19 patients</td>
<td>Medical mask Maintain physical distance of at least 1.5 metre The interview should be done outdoors where possible, and the person being interviewed should wear a mask if tolerated</td>
</tr>
<tr>
<td>In person interview/assessment with asymptomatic contacts of COVID-19 patients</td>
<td>Medical mask Maintain a physical distance of 1.5 metre The interview should be done outdoors. If it is necessary to enter indoors, make sure the person does not have a fever, maintain a distance of 1.5 metres and do not touch anything in the household.</td>
</tr>
<tr>
<td>Performing a swab on a suspected COVID-19 case</td>
<td>Long sleeved gown Face protection N95 mask Gloves</td>
</tr>
</tbody>
</table>

Guidance for people who are feeling unwell in the community

People who are concerned they have COVID-19 are encouraged to call the national hotline number (1800 200) or present to their nearest clinic or hospital for advice. This applies to everyone, including HW.

HW should aim to keep up to date on the latest information on COVID-19 symptoms and guidance from trusted sources, such as WHO or local and national health authorities and pass this information to pass in their community.

---

Advice for people who are feeling unwell

People with minor symptoms such as cough, headache, mild fever should:

- Stay home and self-isolate until they recover
- Call their health care provider or hotline for advice
- Have someone bring them supplies
- Wear a medical mask to avoid infecting others if they need to leave their house or have someone near them

People with fever, cough and difficulty breathing should:

- Seek medical attention immediately
- Call by telephone first, if they can and follow the directions of their local health authority

IPC advice for people with mild respiratory symptoms

- Perform hand hygiene frequently, using an ABHR or soap and water.
- Keep a distance of at least 1.5 metres from other people
- Use a face mask; the mask is provided to the patient and worn for as long as possible (change at least once daily).
- Respiratory and cough etiquette should be maintained and if a mask cannot be tolerated, use a disposable tissue to cough into (make sure hands are washed after).
- Keep windows and doors open as much as possible.

Advice for caregivers or those sharing living space with persons with mild respiratory symptoms

- Perform hand hygiene frequently, using an ABHR or soap and water
- Keep a distance of at least 1.5 metre from the affected person when possible
- Wear a face mask when in the same room as the affected person; do not touch the mask when on; if the mask gets dirty or wet change it for a new clean mask.
- Dispose of any tissues (used for cough) immediately after use and wash hands following.
- Keep windows and doors open as much as possible.

Reference: WHO COVID-19 advice for the public

Home isolation of suspected/confirmed/probable cases

Isolation is the separation of people with suspected or confirmed COVID-19 from healthy individuals in a hospital or healthcare facility, designated community facility or at home. The aim of isolation is to stop the spread of COVID-19.

Home care can be considered for:

- Adults and children with suspected, probable or confirmed COVID-19 when inpatient care is insufficient, unavailable or when health authorities perceive a need to expand services to meet their community needs
- Asymptomatic people or those with mild symptoms, without risk factors for a poor outcome\(^{10}\)
- People who do not need supportive care like oxygen, intravenous fluids or intravenous antibiotics.

Patients who have immune suppression (e.g. HIV, cancer, TB), elderly people or people with comorbidities like hypertension, diabetes or chronic lung disease should only be isolated at home after clinical evaluation by the treating clinician.

The decision to isolate an infected COVID-19 patient at home increases the risk of transmission to other family members.

The decision for home isolation is dependent on three factors:

A. Clinical evaluation of the patient
B. Safety evaluation of the home setting
C. The ability of HW to monitor the patient’s condition at home

Only patients who fulfill the three criteria above are allowed to home isolate.

A. Clinical evaluation of the patient

Ensure patient is asymptomatic or has mild symptoms (low grade fever, dry cough, malaise, runny nose, sore throat) without risk factors for a poor outcome AND does not require supportive care (oxygen, iv antibiotics, iv hydration).

Take note of risk factors which include age above 60 years, smoking, obesity and other non-communicable diseases (cardiovascular disease, diabetes mellitus, chronic lung disease, chronic kidney disease and cancer).

B. Considerations in the home

There are many considerations that need to be taken into account while making the decision to isolate at home. These include the availability of a care package, caregiver, and isolation facilities at home.

\(^{10}\) Risk factors include age more than 60 years, smoking, obesity and other non-communicable diseases (cardiovascular disease, diabetes mellitus, chronic lung disease, chronic kidney disease and cancer)
Care Package

Patients isolating at home require the authorities to provide them with a ‘care-package’ in order to remain safely in their homes. The care package should include:

- Paracetamol (to manage fever)
- Soap for individuals and families to safely wash their hands
- Bleach for disinfection (consider detergent and/or soap for cleaning also)
- Basic PPE, such as face masks (for the patient) and gloves for carers to clean/dispose of waste safely.
- Bin liners to allow the patient/carer to dispose of waste safely.

Caregiver for the patient

A person isolating at home might need family or friends to support their daily needs like cooking, cleaning or shopping for essentials. Ideally, they should only have one care-giver and the person allocated should be healthy with no underlying conditions.

Advice for the caregiver

- Learn hand-hygiene, environmental cleaning, understand the importance of respiratory hygiene and cough etiquette and how to safely manage laundry and waste. Refer to the NDOH website for further information.
- Wear a mask while caring for the patient and perform frequent hand-hygiene techniques. Monitor their own symptoms and the symptoms of the patient to report to the health authorities if necessary.

Isolation facilities at home

Where to isolate at home is dependent on the patient’s housing conditions:

- **Option 1**: If the patient lives on their own, they can consider the whole house as a safe area in which they can move in, including their garden. They need to keep a safe distance from other people.
- **Option 2**: If the patient stays with other people, they should stay in a “sick room”, which is a room away from other people in the household. This room should have good ventilation with windows that can open and preferably with a separate bathroom and toilet. This is where the patient will eat, sleep and have their meals.
- **Option 3**: If a separate room is not available, the patient can stay in one area of the house, which is at least 1.5 metres (3 steps) away from other people. They will eat and sleep in this area and have a separate waste-bin. They should avoid contact with vulnerable or high-risk people.
- **Option 4**: In the rural area, if the patient lives in a crowded area, the community should plan a temporary, hauswin close to their home. Privacy, safety and access should also be considered.
C. Monitoring the patient at home

Home-based care should be supported by HW where possible and a HW should be allocated to support each individual isolated at home. There should be a clear communication line between patient and HW for daily check-ins through phone or text where possible.

Provincial health authorities can consider engaging faith or community-based organizations to assist with support services (e.g. for delivery of food or medicine).

### Key considerations for all home isolation

<table>
<thead>
<tr>
<th>General considerations</th>
<th>Handwashing and cough etiquette</th>
</tr>
</thead>
<tbody>
<tr>
<td>- The contact should not share personal items during this time</td>
<td></td>
</tr>
<tr>
<td>- They should have their own linen and cutlery</td>
<td></td>
</tr>
<tr>
<td>- Close contact of any kind with the contact in quarantine should be avoided. This includes hugging, having intimate sexual relations and sleeping next to the contact.</td>
<td></td>
</tr>
<tr>
<td>- All household members should maintain a distance of 1.5 metre from the individual throughout the quarantine period.</td>
<td></td>
</tr>
<tr>
<td>Handwashing and cough etiquette are important practices at home</td>
<td></td>
</tr>
<tr>
<td>- If the patient is coughing or sneezing, they should wear a mask. The mask should be changed daily or if it is wet</td>
<td></td>
</tr>
<tr>
<td>- Masks should be disposed of in a way that other family members can't touch them. If they are made of cloth they should be washed daily with detergent and dried in the sun.</td>
<td></td>
</tr>
</tbody>
</table>
### National Guideline on IPC in the context of COVID-19

#### All household members including the patient should wash their hands with soap and water regularly throughout the day. This could be before meals, after using the bathroom and after washing/cleaning and disposing the waste.

- HW should brief the household on basic hand-washing education.

### Bathroom/toilets

- Bathrooms and toilets should be cleaned adequately especially when shared with a suspected/confirmed COVID-19 patient.
- Bathrooms and toilets should be cleaned and disinfected every day.
- If the bathroom/toilet is shared with the patient, it should ideally be cleaned and disinfected after the patient uses it or at least once daily. Keep diluted bleach (0.1%) and a cloth in the bathroom to do this.
- In rural areas, water will need to be brought from the river in a bucket for the patient to wash daily. Ensure the bucket is cleaned and disinfected after every use and the assistant wears appropriate PPE when delivering and retrieving the bucket of water.

### Environmental factors

- It is important to allow good air flow through the house by opening all windows and doors. Remove mats and floor coverings to allow easy cleaning and disinfection.

### Cleaning and disinfection

- All household surfaces need to be cleaned daily to prevent transmission.
- Household surfaces should be cleaned every day with water and detergent (or soap) and then with disinfectant. This includes table-tops, door knobs, benches, taps, remote controls and mobile phones.
- The care-giver should clean all the shared areas of the house first **before** cleaning the patient’s area to avoid spread of the virus.
- It is important to wear gloves to clean the patient’s area.
- Gloves should be washed then soaked in disinfectant after use and allowed to dry in the sun or thrown away after each use.
- Sleeping mats used by other household members should be wiped with water and detergent (or soap) and dried in the sun.
| Laundry | - Clean the patient’s clothing and bed sheets separately from other household laundry.  
- Use regular detergent in hot water and allow linen to dry in the sunshine. |
|---|---|
| Waste management | Consideration has to be given to the management of the affected patient’s waste at home  
- Waste from the patient should be kept in a bin or plastic bag then can be sealed, in the patients’ room and disposed of separately to other waste.  
- Carers should wear gloves when removing patients’ waste for disposal.  
- Waste can be burned.  
- The patient or carer should make sure they wash their hands thoroughly with soap and water after handling the waste. |
| Food and water | - If the patient lives alone, other community members may need to support them by delivering food, groceries and water.  
- If several people in a household are in quarantine, someone (who is not in quarantine) should be allocated to bring essential items to the household each day. |
| Visitors | - There should be no visitors during isolation. Visitors are only to drop off food or water.  
- There should be a designated point where this is done so that there will be no direct contact between visitor and patient.  
- Communication with family from a balcony to people in the garden for example is encouraged, as long as a physical distance of 1.5 metre minimum is maintained. |
| Psychosocial and economic considerations | - When facilitating home quarantine, consider the psychosocial needs of the patient while they are confined to the home. Regular phone calls or visits (from a safe distance) each day will be beneficial for the patient / family’s well-being.  
- Consider the psychosocial needs of the other household members. What support is available to the individual or family in coping with the emotional impact of being quarantined for 14 days. Mental |
health and psychosocial support (MHPSS) must be available if there is a need.

**Discharge of patients in isolation**

Patients can be discharged from home isolation without repeat testing.

- Asymptomatic patients will be discharged from care after completing 10 days in isolation (calculated from date of laboratory test-PCR or Gene Expert).
- Patients with mild symptoms must complete 10 days of isolation after symptom onset, plus at least 3 days without symptoms (this will mean there is a minimum of 13 days of isolation).
- If symptoms continue, isolation must continue until the patient has had 3 symptom-free days.

**Quarantine for people who may have been exposed**

Quarantine is the separation (and restriction of activities) of well individuals who may have been exposed to COVID-19 from others such as those who have travelled from a COVID-19 hotspot. The objective of quarantine is to monitor the individual for the development of symptoms ensuring the early detection of cases. For additional information see Annex 12: Home quarantine.

**Feasibility of home quarantine**

Determining whether someone’s home is suitable for quarantine of contacts of COVID-19 cases is crucial. Health, local authorities and communities need to ensure that:

- Adequate food, water, hygiene and communication provisions can be made for the quarantine period
- IPC measures can be implemented in the home
- Monitoring the health of quarantined persons can be done during quarantine.
Requirements for home quarantine

Care-package

Authorities may need to support the contacts in the delivery of a “care-package” for the individuals / families to remain in their homes.

- Hand soap and or ABHR
- Fever reducing medicine such as paracetamol
- Disposable mask in case quarantined person develops symptoms of COVID-19
- Disposable gloves/heavy duty gloves for cleaning
- Liquid bleach and soap/detergent for cleaning
- Thermometer (if available)
- Consider face towel, sanitary napkins and maternity pads if necessary

Where to isolate at home

- Refer to Home Isolation considerations above.

Caregiver for the contact in quarantine

Individuals in quarantine may require support from a family member or friend to care for their daily needs particularly if they are elderly, frail or dependent on others for their daily needs (such as cooking, washing and cleaning).

- It is important to limit the number of caregivers in order to reduce the risk of transmission to other people.
- There should be only one caregiver, the family/household should allocate this person carefully by ensuring they are healthy, with no underlying conditions.
- Care-givers should wear a mask if distance of at least 1.5 metre cannot be maintained.
- Caregivers should practice good hand hygiene and cough/respiratory etiquette
- Caregivers should know how to seek help if the patient shows signs of sickness.

Monitoring the health of quarantined person

Contact monitoring teams based within the PHA contact tracing team should follow up people in quarantine daily for the duration of their quarantine period

- Screening of body temperature and symptoms can be done by a quarantined person or their caregiver. A quarantined person or caregiver needs to be educated on how to use the thermometer and monitor symptoms.
- Both quarantined persons and caregivers should understand the importance of quickly seeking medical care if they develop symptoms.
- If the quarantined person develops a fever and respiratory symptoms (e.g. cough, sore throat, shortness of breath), the person or caregiver should call the COVID-19 toll-free hotline 1800 200 or inform PHA quarantine team.
- If the quarantined person becomes symptomatic, they should wear a face mask.
- The RRT should collect nasopharyngeal swabs and send them to the laboratory for assessment and diagnosis. While waiting for test results, the person with symptoms should be isolated at home. Upon confirmation of COVID-19, the health authorities will decide on home isolation or referral to a designated health facility.
- Persons at higher risk of severe disease (individuals aged above 60 years, with underlying medical conditions) may require more frequent monitoring or may require specific medical treatments.

Duration of home quarantine

The latest criteria on release from home quarantine needs to be adhered to:

- Contacts of possible COVID-19 cases are required to complete 14 days quarantine.
- If the contact is assessed and has no symptoms at the end of the 14 days, they do not have to remain in quarantine.

Out-of- hospital cardiopulmonary resuscitation (CPR)

The underlying principles for cardiopulmonary resuscitation (CPR) remain the same in the context of COVID-19 however, the risk to rescuers is greater as CPR is an AGP. Any attempt at resuscitation is better than no attempt. Many sudden cardiac arrests occur in the community and many will be unrelated to COVID-19.

For lay rescuers who are unable or unwilling to do rescue breathing, compression only CPR (+/- defibrillation) is acceptable, ensuring that the rescuer is wearing a mask correctly.

After any attempts at resuscitation, rescuers must adhere to current advice about hand washing, cleaning and decontamination of equipment.

For further information see: International Liaison Committee on Resuscitation guidance.11

### 3. IPC in Healthcare facilities

#### Principle of IPC measures for healthcare facilities

It is vital that each healthcare facility supports or develops a system for IPC management to cope with the pandemic. If an IPC program is not yet in place, an individual or team that can serve as a focal point for IPC activities and structures need to be established as soon as possible.

<table>
<thead>
<tr>
<th>IPC strategies to prevent or limit transmission of COVID-19 in health care settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ensure <strong>screening, early recognition, triage</strong> and <strong>source control</strong> (isolating patients with suspected COVID-19)</td>
</tr>
<tr>
<td>2. Apply <strong>standard precautions</strong> for all patients</td>
</tr>
<tr>
<td>3. Implement <strong>additional precautions</strong> (droplet and contact and when applicable, airborne precautions) for suspected/confirmed COVID-19 cases</td>
</tr>
<tr>
<td>4. Ensure the rationale use of <strong>PPE</strong></td>
</tr>
<tr>
<td>5. Implement <strong>administrative</strong> controls</td>
</tr>
<tr>
<td>6. Use <strong>environmental</strong> and <strong>engineering</strong> controls</td>
</tr>
</tbody>
</table>

At the end of this guideline, there is a checklist to help guide in preparing your healthcare facility. See: [Annex 14 Infection Prevention and Control Checklist in the context of COVID-19 2020](#)

#### General set-up and preparation of healthcare facilities

All HWs should be aware of the high risk of transmission in healthcare facilities and the high impact on public health when an outbreak in healthcare facilities occurs. It is very important to identify and isolate suspected COVID-19 cases from other people at the entrance of the healthcare facility. For the outline of screening and assessment see [Annex 10: Patient flow at the screening and assessment area](#).
Considerations when preparing your healthcare facility for COVID-19

- Open only one entrance to the healthcare facility and close other entry points. Place a screening station at the entrance and screen everyone including HWs and visitors.
- Set up an assessment area where suspected COVID-19 cases are sent for further investigation.
- Set up an isolation area/ward which is designated for suspected/probable/confirmed COVID-19 patients.
- Overcrowding should be avoided. Spatial separation of at least 1.5 metres needs to be maintained between all people and throughout the facility (such as in staff rest areas, offices and waiting rooms).
- Place as many hand hygiene stations as possible and make either ABHR or water and soap readily available for staff, patients and visitors.
- Prepare a well-defined and separate waiting area for suspected cases.
- Post information, like posters and flyers that remind all people in the healthcare facility including HWs, patients and visitors to wear face covering/mask and to perform hand hygiene frequently.
- Install enough trash bins to dispose of used PPE.
- Ensure access to prompt laboratory testing.
- Ensure adequate supplies of PPE.

IPC for screening area

A screening area is the first entry point to a health-care facility where everyone should have their temperature checked and be screened for symptoms of COVID-19. Those who need further investigation for COVID-19 should be separated from other people and referred to the COVID-19 assessment area.

The key to preventing widespread community and facility transmission is screening and triage at all points of access to the health system.
Considerations for the screening area

- Train staff on the signs and symptoms of COVID-19 and the most recent case definition. The screener does not have to be a clinician but they must be able to check the temperature and ask if the person meets the suspected case definition.
- Create a barrier between screener and those who are screened (such as a table or plastic barrier).
- A person who screens people should wear a medical/surgical mask. See Annex 5 PPE according to risk of different healthcare activities.
- Display information at the entrance of the facility/screening area informing people to report if they have signs and symptoms of COVID-19.
- Use a non-contact infrared thermometer for the temperature screening to avoid physical contact. If not available, screen people based on their symptoms only.
- When someone who meets the suspected case definition is identified, provide a mask, explain how to wear a mask safely and correctly and refer the person immediately to an assessment area.

IPC for assessment area

A separate assessment area for further investigation including thorough history taking, physical examination, swabbing for COVID-19, additional tests for other possible differential diagnosis, assessment of severity and stabilization should be identified.

Considerations for the assessment area

- Make sure that all suspected COVID-19 cases wear masks.
- Suspected COVID-19 cases should be positioned at least 1.5 metre apart from each other in a designated, well-ventilated waiting area.
- Hand hygiene stations should be placed in both the waiting area and the assessment area.
- HWs who perform swabbing and assess suspected cases should wear appropriate PPE. If HWs perform AGP (e.g. intubation), respirator masks (such as N95) are necessary.
- Items such as stethoscopes, blood pressure cuffs and thermometers should be designated to these zones and should be cleaned thoroughly after each use.

IPC for isolation area/ward

An isolation area needs to be identified for suspected/confirmed COVID-19 cases that require hospitalization. This might be an existing building that has been repurposed or it might be newly built. If suspected cases are to be isolated while they wait for results it is essential that they are kept adequately distanced from confirmed cases. All HWs should be aware that this area poses high risk of transmission and adherence to IPC guidelines should occur at all times.
Considerations for the isolation area/ward

- Ideally the isolation area should be located away from other clinical areas. Patients should be placed in **well-ventilated single rooms** or in adequately distanced beds. Health facilities are encouraged to explore areas for isolation that have a separate entrance, are well-ventilated and have doors that can be closed to prevent public access.

- When single rooms are not available or the bed occupancy rate is anticipated to be at 100% or more, suspected, probable, and confirmed patients should be **grouped together (cohorted)** in adequately ventilated areas with beds placed at least 1.5 metres apart (e.g. suspected with suspected).

- PPE should be easily accessible to staff working in these areas, there should be a one-way flow with clear donning and doffing areas at the entrance to the room.

- A **hand hygiene station** should be located near the point of care, at the entrance and exit of the isolation room.

- Do not put more than one patient on a single hospital bed.

- Maintain **adequate ventilation** with open windows and open louvres to create good air flow.

- Preferably the room should have a toilet and bathroom so the patient doesn’t have to leave the room. If not, a dedicated bathroom and toilet should be allocated for this individual patient or group of cohorted patients.

- Surfaces should be easy to clean (no carpet and no curtains that cannot be washed). If there are curtains, they should be cleaned between patients to ensure curtains from a COVID-19 positive patient is not then in a room with non-infected patients.

- Items such as stethoscopes, blood pressure cuffs and thermometers should be designated to these zones and disinfected between use.

- Assess work-stations and consider using tape on the floor to mark where chairs need to be spaced.

- Clearly identify red zone (areas at high risk of transmission – such as patient areas and doffing areas) and green zone (areas of low risk such as work stations and donning area).
Managing patients in isolation areas

- Ideally there is no visitor access to the isolation area.
- All individuals, including family members, visitors and staff who enter the isolation area should wear appropriate PPE. If HWs perform AGP (e.g. intubation), respirator masks are necessary (see Annex 5: PPE according to risk of different healthcare activities).
- All patients must wear a surgical mask
- Reduce stress and anxiety in patients by explaining what you are doing and why you do it
- A dedicated team of HW’s should be designated to care for COVID-19 patients and should not work elsewhere
- The routine visiting of multiple medical teams should be avoided; care can be transferred to a specialist medical team for the duration of their illness to prevent cross-transmission through various areas of the facility.
- After patient care, appropriate doffing, disposal of all PPE’s and hand hygiene should be carried out
- A new set of PPE is needed when care is given to a different patient
- Equipment (such as thermometers, blood pressure cuffs and stethoscopes) should be dedicated to each patient. If equipment needs to be shared among patients, clean and disinfect it with 70% ethanol contained solution between use for each individual patient.
Aerosol-generating procedures

In addition to contact and droplet precautions, airborne precautions are required for all AGPs. Airborne precautions, particularly in the context of the current COVID-19 pandemic, should be used in all patients with Severe Acute Respiratory Illness (SARI) undergoing AGPs.

AGPs include:
- Intubation and extubation
- CPR
- Manual ventilation (using a bag-valve-mask system prior to intubation)
- Bronchoscopy
- Tracheostomy care (all cares)
- Sputum induction (using nebulised aerosol hypertonic saline)
- Autopsy

### Considerations on IPC for AGPs

<table>
<thead>
<tr>
<th>General considerations</th>
<th>Perform procedures in a single room with open windows.</th>
</tr>
</thead>
<tbody>
<tr>
<td>#</td>
<td>If no single rooms are available, ensure maximum distance possible from unprotected staff and patients.</td>
</tr>
<tr>
<td>#</td>
<td>Wear long sleeved gown, gloves, respirator mask, eye protection and a waterproof apron for procedures expected to have high volumes of fluid. Perform a seal check of the respirator mask. See Annex 8: How to perform a mask seal check</td>
</tr>
<tr>
<td>#</td>
<td>Limit the number of persons present in the room to the absolute minimum required for the patient’s care and support.</td>
</tr>
<tr>
<td>#</td>
<td>At least 45 minutes should elapse prior to disinfecting the room.</td>
</tr>
<tr>
<td>#</td>
<td>HWs and cleaners should wear respirator masks when entering the room where any of AGP has been performed within the previous 45 minutes.</td>
</tr>
</tbody>
</table>

### Manual ventilation by bag valve masks (BVMs)

- Duration of manual ventilation should be minimised.
- A two-handed bag valve mask technique should be used to contain infective droplets.
- Use BVM with a viral filter fitted if available.

### Intubation

- Should be undertaken by the most qualified staff who are also trained in airborne precautions. Refer to the Clinical
Management guidelines for details of the intubation procedure.\(^{12}\)

- Anticipate the need, and appropriateness, for intubation where possible. Seek specialist advice as required in order to ensure the decision to escalate care is appropriate (i.e.: if no intensive care facility is available intubation is not considered).
- Optimise pre-oxygenation to reduce the need for rescue interventions and generation of aerosols.
- Ensure cuff inflated correctly before commencing positive pressure ventilation.
- Laryngoscope should be placed in a sealed bag immediately after use and sent for sterilisation, or clean with detergent and water, dry, and wipe with 70% alcohol.

**Suctioning**

- Use of a closed suction system is recommended.
- Avoid open airway suctioning as it breaks the ventilator circuit and exposes staff to aerosols.
- If a closed suction system is not available, the principles of open airway suctioning would be the same as for all AGPs.

**Extubation**

- A simple oxygen mask should be placed on the patient immediately post-extubation to minimise aerosolization from coughing.
- Oral suctioning may be performed, with appropriate PPE including respirator masks.

**Cardio-pulmonary resuscitation (CPR)**

- Identify as early as possible any patients at risk of further deterioration.
- Treating doctors should identify clear goals of care on admission to hospital (including whether CPR is appropriate in the event of further deterioration). *Seek specialist advice as required in order to ensure the decision to escalate care is appropriate*.
- PPE should be readily available to staff. It is accepted that donning PPE may cause a delay in commencing resuscitation though this is critical to the safety of staff.
- Do not do mouth-to-mouth resuscitation. Do not put your face close to listen for breaths. Responders should assess

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\(^{12}\) PNG National guidelines on clinical management for COVID-19 cases in healthcare settings
breathing by looking for chest rise and fall from the end of the bed.

- If there are no breaths visible or no signs of life commence compression resuscitation only.\(^\text{13}\)
- If the patient is already receiving oxygen via a face mask, leave the mask on during chest compressions (as this may limit aerosol spread).
- Restrict the number of staff and/or relatives in the room to a minimum.

**IPC for Intensive Care Units (ICU)**

Principles of the preparation and management of patients in ICU are the same as those of isolation ward/area. Further details of procedures can be found in the clinical management Guidelines.\(^\text{14}\)

An emergency trolley should be available in every ward and should be equipped with PPE and appropriate equipment.

The principles of transferring patients to/from ICU are the same as those of other situations. However, HWs who transfer intubated patients should wear respiratory masks in case of accidental disconnection of breathing circuit.

**Visitors to the healthcare facility**

Unnecessary visitors should not be allowed to enter healthcare facilities in order to avoid overcrowding. All visitors should be screened for symptoms of COVID-19 at the entrance of the facility. If any visitors have symptoms of COVID-19 they should not be allowed to enter the facility and should be referred for clinical assessment.

Restrictions should be placed on visitors to areas where suspected or confirmed COVID-19 cases are being managed. In general, it is not allowed, though there may be some special circumstances where it is important to allow one visitor (this includes designated visitors, such as a mother, father or guardian for the patient).

**General consideration on visitors to the healthcare facility**

- During cluster outbreaks or widespread community transmission restrict visitors to the health facility
- Ensure that all visitors wear face masks in the health care facility.
- Restrict entry to allow only visitors who are essential such as the parents of paediatric patients and caregivers.

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\(^{13}\) ANZICS, Australian and New Zealand Intensive Care Society COVID-19 Guidelines, 2020

\(^{14}\) PNG National Guidelines on Clinical Management for COVID-19 in healthcare settings v2
• Maintain a record of all visitors allowed in the facility and provide it to security personnel.
• Educate caregiver visitors on hand hygiene, respiratory etiquette, physical distancing and standard precautions.
• Restrict movement of the visitor within the healthcare facility.
• Prohibit the presence of visitors during AGPs.

Principles of visitor management to patients with suspected or confirmed COVID-19

• Encourage family members to assign a single caregiver to the patient. These caregivers should not be people who are at high risk for severe COVID-19, such as older people or people with underlying medical conditions.
• Identify alternatives for direct interaction between patients, family members, other visitors and clinical staff, including making remote communications available.
• Maintain a record (name and contacts) of all persons entering the patient’s room. This is to enable rapid contact tracing should anyone develop signs or symptoms of the disease.
• All visitors should wear the required PPE and provide clear instructions about how to put on and remove PPE and perform hand hygiene to ensure that visitors avoid self-contamination.
• Restrict the amount of time that each visitor can spend in the area.

Movement of patients within hospital

Movement and transport of suspected/probable/confirmed patients should be minimized to avoid unnecessary exposures.

Principles of movement and transport of patients

• Restrict movement and transport of patients to essential diagnostic tests and referral to other facilities only.
• Use a predetermined transport route to minimize exposure for staff, other patients and visitors and ensure the pathway is clear.
• Ensure the patient wears a surgical mask for the duration of the transfer and performs hand hygiene prior and after transfer.
• Ensure HWs who are transporting patients wear appropriate PPE (See Use of Personal protective equipment (PPE)).
• Notify the area receiving the patient of any necessary precautions as early as possible, before the patient’s arrival.
• Clean and disinfect surfaces which the patient is in contact with.
Collecting and handling laboratory specimens

All specimens collected from suspected patients for laboratory investigations are regarded as potentially infectious. HWs who collect, handle or transport any clinical specimens adhere rigorously to the following measures and biosafety practices to minimize the possibility of exposure.

**Guidance for sample collection**

- Ensure HWs who collect specimens including nasopharyngeal and oropharyngeal swabbing use appropriate PPE.
- Ensure all personnel who transport specimens are trained in safe handling practices and spill decontamination procedures.
- Place specimens for transport in leak-proof specimen bags (i.e. secondary containers) that have a separate sealable pocket for the specimen (i.e. a plastic biohazard specimen bag), with the patient’s label on the specimen container (i.e. the primary container), and a clearly written laboratory request form.
- Ensure laboratories in healthcare facilities adhere to appropriate biosafety practices and transport requirements, according to the type of organism being handled.
- Document clearly each patient’s full name, date of birth and suspected COVID-19 of potential concern on the laboratory request form.
- Notify the laboratory as soon as possible that the specimen is being transported.
- For further information on COVID-19 sample collection see the Clinical Management Guidelines\(^\text{15}\) and the Sample Collection SOP\(^\text{16}\).

Radiological imaging

Patients with suspected or confirmed COVID-19 might need radiological imaging either at the radiology department or bedside (in the assessment or isolation areas). Principles of movement to the radiology department are outlined in the section above.

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\(^{15}\) PNG National Guidelines on Clinical Management for COVID-19 in healthcare settings v2

\(^{16}\) PNG COVID-19 Surveillance SOP Version 5, 22 October 2020
Considerations for radiological imaging

**Radiographers**
- Radiographers should wear appropriate PPE: a medical mask, gloves and a long-sleeved gown
- A lead gown is to be worn under the PPE

**Mobile x-ray/ultrasound machine**
- Cover the mobile x-ray/ultrasound machine with plastic wrap if available
- X-ray cassettes should be placed in two layers of disposable plastic bags. Clean on both sides after the procedure
- The ultrasound probes must be cleaned and use disposable probe covers if available. Sterile gloves can be used as an alternative.
- Seek assistance from ward staff to help position patients, open or close doors to the imaging area
- Disinfect the machines after the examination

**Radiological imaging in radiology department**
- Machines should be disinfected properly in between the cases
4. Environmental, linen, waste management

Safe handling, cleaning and disinfection of patient care equipment

HWs should be aware that COVID-19 can be transmitted through medical equipment.

**Principles of handling medical equipment**
- Where possible, use dedicated medical equipment like stethoscopes, blood pressure cuffs and thermometers for patients with suspected/confirmed COVID-19 and disinfect between each patient.
- All medical equipment used for patient care is cleaned and disinfected according to manufacturer’s instructions in between use for each patient. Wipe with a cloth that has been soaked in the 70% ethyl alcohol and leave to dry before use.
- Post signs on the isolation area door indicating that equipment must not removed
- Remove all non-essential furniture and ensure that the remaining furniture is easy to clean and does not conceal or retain dirt or moisture within or around it.
- Stock the PPE supply in high-risk areas such as the isolation area, COVID-19 assessment area and ER. Setup a trolley outside the door to hold PPE and an area with a waste bin to doff PPE.

**Environmental cleaning and disinfection**

Cleaning with detergent and water, followed by disinfection, rinsing and drying, is the most useful method for removing viruses from surfaces. Cleaning means physically removing microorganisms and dirt from the surfaces. Disinfecting means using chemicals to kill microorganisms on the surface. Viruses like COVID-19 are sensitive to detergents and disinfectants. For recommended disinfectant solutions see the following table.

Make sure that environmental cleaning and disinfection procedures are followed consistently and correctly.

<table>
<thead>
<tr>
<th>Disinfectant</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium hypochlorite at 0.1%</td>
<td>Disinfection of surfaces such as benches, bed rails, windows and bathroom surfaces</td>
</tr>
<tr>
<td>Sodium hypochlorite at 0.5%</td>
<td>Disinfection of surfaces that have been contaminated with blood or bodily fluids.</td>
</tr>
<tr>
<td>70% alcohol/ethanol containing solution</td>
<td>Disinfection of small items or those that cannot tolerate bleach</td>
</tr>
</tbody>
</table>
Refer to the **SOP on cleaning & disinfecting in healthcare facilities in the context of COVID-19** for the details of the cleaning and disinfection process in an assessment area and an isolation area/ward.17

### Preparation of sodium hypochlorite (chlorine) disinfection solution

- 3.5% liquid bleach is readily available across Papua New Guinea. It will need to be diluted in order to be used for disinfection.
- Solutions must be prepared in a well-ventilated area.
- Protective eye-wear, apron and heavy-duty gloves are worn when preparing bleach solutions (a surgical mask is not required if prepared in a well-ventilated area).
- Diluted bleach is used within 24 hours after preparation, as decomposition increases with time if left unused. A new batch is made every 24 hours and placed in a cleaned and dried container. It is kept away from direct sunlight.
- For a simple visual guide on how to prepare chlorine solution see [Annex 11: How to make chlorine (bleach) solution for disinfecting surfaces](#).

### Considerations for cleaners

- It is essential that all surfaces are first cleaned with soap and water before applying a disinfectant. Disinfectants are not substitutes for cleaning.
- Where possible, proceed from cleaner to dirtier areas to avoid spreading dirt and microorganisms. Consider cleaning low-touch surfaces before frequently touched surfaces.
- Use separate cleaning tools and freshly prepared solutions for toilets and bathroom surfaces.
- Where possible, use disposable cloths/paper towels and disposable mop heads. Alternatively, ensure used cloths and mop heads are laundered and dried after use to minimize the degree of contamination.
- PPE requirements for cleaning staff (who are cleaning a COVID-19 room): heavy-duty gloves, long sleeved gown and closed shoes. Eye protection and surgical masks are required if there is a risk of splashing from blood or body substances. Cleaning staff perform hand hygiene before putting on and after removing PPE.
- If possible, keep windows open for ventilation whilst using disinfectants.
- Never spray a detergent or disinfectant directly on any surface, as it can create splashes, aerosolise particles or make the spill bigger. Instead, apply cleaning agent/disinfectant to cloth/paper towel to decontaminate surfaces.
- Never double-dip cleaning cloths into portable containers (e.g., bottles, small buckets) used for storing environmental cleaning products.

17 SOP: Cleaning & disinfecting in healthcare facilities in the context of COVID-19
- Never shake mop heads and cleaning cloths—this disperses droplets or dust that could be infectious.
- Do not hang up and swat carpets or rugs/mats as this can disperse the virus.
- It is vital that cleaning staff are informed to avoid touching their face, especially their nose, eyes and mouth, when cleaning. It is critical that cleaning staff receive training and support on PPE and these processes.
- After applying a disinfectant to a surface, it is necessary to wait for the required exposition time to ensure it kills the virus on the surfaces. Once the contact time has lapsed, the disinfectant is rinsed with clean water.

**Recommended frequency of cleaning of environmental surfaces, according to the patient areas with suspected or confirmed COVID-19 patients**

<table>
<thead>
<tr>
<th>Patient area</th>
<th>Frequency</th>
<th>Additional guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screening/triage area</td>
<td>At least twice a day</td>
<td>Focus on high-touch surfaces, then floors (last)</td>
</tr>
<tr>
<td>Inpatient rooms/cohorted-occupied</td>
<td>At least twice daily, preferably three times daily, in particular for high-touch surfaces</td>
<td>Focus on high-touch surfaces, starting with shared/common surfaces, then move to each patient bed; use new cloth for each bed if possible; then floor (last)</td>
</tr>
<tr>
<td>Inpatient rooms – unoccupied (terminal cleaning)</td>
<td>Upon discharge/transfer</td>
<td>Low- touch surfaces, high-touch surfaces, floors (in that order); waste and linens removed, bed thoroughly cleaned and disinfected</td>
</tr>
</tbody>
</table>
| Outpatient/ambulatory care rooms    | After each patient visit (in particular for high-touch surfaces) and at least once daily terminal clean | High-touch surfaces to be disinfected after each patient visit  
Once daily low-touch surfaces, high-touch surfaces, floors (in that order); waste and linens removed, examination bed thoroughly cleaned and disinfected |
| Hallways/corridors                  | At least twice daily             | High-touch surfaces including railings and equipment in hallways, then floors (last) |
| Patient bathrooms/toilets           | Private patient room toilet at least twice daily  
Shared toilets: at least three times daily | High-touch surfaces, including door handles, light switches, counters, faucets, then sink |
| bowls, then toilets and finally floor (in that order) | Avoid sharing toilets between staff and patients |

**Safe handling and cleaning of infectious linen**

All linen used in the direct care of patients with suspected and confirmed COVID-19 is managed as ‘infectious’ linen. Linen is handled, transported and processed in a manner that prevents exposure to the skin and mucous membranes of staff, contamination of their clothing and the environment.

**Considerations for handling linen**

The following measures are taken when handling contaminated or infectious linen:

- Staff receive appropriate training on handling and processing of infectious linen.
- All contaminated or infectious linen is placed in leak proof linen bags/receptacles up to three quarters full and then the bag is tied at the mouth and labelled e.g. ward/care area and date.
- Transport linen to laundry or designated laundering area for immediate processing.
- Clean and disinfect hampers or other carts for transporting laundry.
- Do not shake dirty laundry as it can cause the virus to be dispersed through the air.
- Do not place used/infectious linen on the floor or any other surfaces e.g. tabletop.
- Do not sort used/infectious linen once bagged.
- Do not overfill laundry receptacles.
- Do not place inappropriate items in the laundry receptacle e.g. used equipment/needles.

**Cleaning infected linen**

Every healthcare facility maintains the standard precautions required to protect the worker from exposure to potentially infectious materials during collection, handling, and transportation of contaminated linen through the use of PPE, containment and labelling. Manual cleaning of contaminated linen is discouraged and instead, it is advisable to use washing machines wherever they are available.

**Machine Cleaning**

When a machine launder is available, wash items as appropriate in accordance with the manufacturer’s instructions. If possible, launder linen using 60°C-90°C water setting and dry linen completely.
Machine cleaning checklist

- The cleaner must wear surgical mask, face protection, long sleeved gown, apron and utility gloves
- For soiled linen remove the solid dirt first by sluicing
- Pre-wash linen using a detergent
- Adjust the washing machine temperatures to 90°C for at least 10 minutes (to kill microorganisms)
- Doff PPE
- Perform hand hygiene
- Dry the linen under the sun
- Perform hand hygiene.

Manual Cleaning

If a washing machine is not available, clean infected linen manually.

Manual cleaning checklist

- The cleaner must wear surgical mask, face protection, long sleeved gown, apron, and utility gloves
- For soiled linen remove the solid dirt first by sluicing
- Immerse in detergent solution and use mechanical action (e.g., scrubbing) to remove dirt
- Disinfect by immersing the linen in chlorine 0.05% solution for 30 minutes
- Rinse with clean water to remove residue
- Remove PPE
- Allow to fully dry, ideally hanging on a clothesline in the sun
- Perform hand hygiene.

After washing, cleaned and dried linen are ironed if possible, folded, and packaged for transport, and stored in an enclosed cupboard or room to avoid contamination.

Waste management

All waste with potential or known COVID-19 contamination is managed in the same way as standard infectious medical waste. Use typical engineering and administrative controls, safe work practices, and PPE to prevent worker exposure to the waste. Such measures help protect
workers from sharps and other items that can cause injuries or exposures to infectious material.

**Considerations for waste management**

- Waste handlers must wear surgical mask, heavy duty gloves, face protection, boots, and long-sleeved gown).
- All waste from COVID-19 assessment/isolation areas/wards should be considered “infectious” and should be handled with this in mind.
- Double layered bags should be used for the collection of infectious waste to ensure that no accidental leakage occurs from the bags.
- Do not hold waste bags against the body
- Dispose and secure waste in a general waste bag and dispose as per facility protocol
- Dispose of cleaning solutions as per facility guidelines.
- Infectious waste must be treated without delay and not be left lying around the facility. Waste is stored for a maximum period of 24 hours in a dedicated, secured space before it is transferred to the incinerator/pit for burning. This area must not accessible to animals or people other than those managing waste.
- Medical waste from COVID-19 isolation area is treated or decontaminated to reduce the microbial load in the waste
- Treatment processes methods include incineration, chemical disinfection, grinding/shredding/disinfection methods.

NB: Many existing health facilities across PNG currently do not have access to incineration and routinely use pits for the disposal of infectious waste. It is important to note that GeneXpert cartridges used for testing COVID-19 must be incinerated.

Existing PHAs and district health services managers must work with authorities to develop a process of incineration for all infectious waste. Any pit burning that is undertaken must be done under the following conditions:

- Create a system whereby the pit is burning at a set time each day.
- Ensure the area is far away from the facility and inaccessible to animals.
- Ensure the pit is fenced off and well signposted.
- Ensure the staff disposing of the waste and managing the burning are wearing appropriate PPE, have received appropriate training on IPC and monitor the area (to ensure no animals or humans can enter) throughout the burning.

Pit burning is not a long-term solution for the management of infectious waste.
5. Safe management of a dead body in the context COVID-19

This guidance has been developed to support the safe and respectful handling of dead bodies, suspected or confirmed to have COVID-19, irrespective of cause of death. This guidance should be provided and explained to religious leaders and organizations, next of kin, and other affected community members to ensure that these measures are understood, accepted, and implemented.

Key points

- Based on current evidence, COVID-19 is transmitted between people through droplets and close contact with possible spread through faeces. Except in the case of haemorrhagic fevers (such as Ebola, Marburg) and cholera, dead bodies are generally not infectious. There are certain circumstances where additional precautions may need to be taken, such as using airborne precautions during autopsy, though these precautions are specific to staff working in those environments.

- It is a common myth that people who have died of an infectious disease should be cremated, but this is not true. Cremation is a cultural and/or religious choice that may be based on available resources.

- People may die of COVID-19 in healthcare facilities, homes or other locations. The safety and well-being of everyone who cares for deceased patients is the priority. Any person who is not trained in the use of standard precautions and PPE must not touch the body. This includes HW, family, mourners, and religious leaders. Before attending to a deceased person, HW and carers must ensure that hand washing facilities and appropriate PPE are available. The same precautions apply for managing the person as were in place before their death.

- Hasty disposal of the deceased is unnecessary and should be avoided; the dignity of the dead, their cultural and religious traditions and their families must be respected throughout. HWs and authorities should manage each situation individually, balancing the rights of the family, the need to investigate the cause of death and the risk of exposure to infection.

Death in a healthcare facility

Care of body immediately after death

As quickly as possible:

- the doctor should complete the death certificate
- the body should be prepared according to usual practices
- staff should continue to wear appropriate PPE
- the next of kin should be notified as soon as possible
All family members are advised not to directly interact with the dead body. They should not touch or kiss the body. They should hand-wash with soap and water or use an ABHR for 20 seconds after viewing the body.

**Belongings of deceased**

Before returning to the next of kin:

- **Non-clothing** items should be handled with gloves and cleaned with neutral detergent followed by disinfectant of at least 70% ethanol alcohol or 0.1% (1000 ppm) bleach
- **Clothing** items should be handled with gloves and put in a bag. The outside of the bag should be wiped with 70% ethanol alcohol or 0.1% (1000 ppm) bleach.

**Advice for the next of kin**

- Use gloves and practice strict hand hygiene when handling the bag containing personal belongings.
- Handle clothing items with gloved hands and machine wash clothing with warm water and laundry detergent at 60–90°C (140–194°F).
- If machine washing is not possible, clothes can be soaked in hot water and soap in a large drum or pot using a stick to stir and being careful to avoid splashing.
- The drum should then be emptied, and the linens soaked in 0.5% bleach for approximately 30 minutes.
- Finally, the laundry should be rinsed with clean water and the clothes allowed to dry fully in sunlight.

**Preparing the body for transfer to the mortuary or burial site**

Anyone involved in the care and transfer of the deceased should use standard and contact precautions, depending on their level of contact. Hand hygiene before and after is imperative.

**Checklist for preparing a dead body for transfer to a mortuary or burial site**

- Anyone handling the deceased must wear gloves, long sleeved gown and medical masks. If there is a risk of splashes of bodily fluids or secretions staff also wear face protection and respirators
- If extubation is required staff should wear a respirator mask as well as a long-sleeved gown, gloves, and face protection.
- Prepare the body for transfer including removing all intravenous lines, catheters and other tubes; ensure that any body fluids leaking from orifices are contained with cloths or pads
- Keep both the movement and handling of the body to a minimum
- Clearly label body linen/bag as containing COVID-19, such as ‘Risk of COVID-19 – handle with care’
- Wrap body in cloth, body bags are not necessary (unless there is excessive fluid leakage)
- Conduct identification checks at the time of body preparation as the body bag or cloth must not be reopened once the body is inside
- Transfer to the mortuary as soon as possible. No special transport equipment or vehicles are needed.
- Any form of transportation (air, land and sea) of the deceased body is subject to requirements and protocols of appropriate authorities.

**Mortuary care**

Mortuary staff preparing the body should use **standard, contact** and **droplet** precautions depending on their level of contact with the body. A separate morgue is not required. However, the following guidance should be observed.

**Guidance for mortuary care**

- A dedicated area should be allocated within the mortuary refrigerator for COVID-19 bodies (and can be separated with the use of tape or rope and clearly marked for COVID-19).
- Where possible, mortuaries should have procedural arrangements to segregate clean and dirty areas.
- Mortuary staff when preparing the body for placement into the coffin/casket must wear long sleeved gown gloves and medical mask.
- Family viewing should be arranged, and allowance should be made for only a few members to view the body only. If the family wishes to view the body they may do so, using standard precautions at all times including hand hygiene. Mortuary staff give the family clear instructions not to touch or kiss the body. Vulnerable adults (above 60 years) and those with weakened immune systems (including with co-morbidities) are discouraged from coming close to the body. Families should use standard precautions during and after viewing, including handwashing or ABHR use.
- Decontaminate the casket with sodium hypochlorite (bleach) before issuing to the family for burial.

**Autopsy**

If a person died during the infectious period of COVID-19, the lungs and other organs may still contain live virus; **airborne precautions** must therefore be taken during autopsy.
Performing an autopsy on a person with suspected or confirmed COVID-19

- Ensure autopsies are performed in adequately ventilated rooms.
- Minimum staff required should be involved.
- Staff should be fully trained in how to don/doff PPE.
- Staff must wear a long-sleeved fluid-resistant gown, gloves (either two pairs or one pair of autopsy gloves), a medical mask, eye protection (face shield or goggles), and boots/footwear protection.
- A respirator mask (e.g. N95) should be used in the case of AGP, for example procedures that generate small-particle aerosols, such as the use of power saws or the washing of intestines.

Death at home or in the community

People who have died from COVID-19 can be buried or cremated.

Preparing the body

- A minimum number of people should be involved in preparations. Others may observe without touching the body at a minimum distance of 1.5 metre.
- Be culturally sensitive whilst ensuring that family members reduce their exposure as much as possible. Children, older people (above 60 years old), and anyone with underlying illnesses (such as respiratory illness, heart disease, diabetes, or with weakened immune systems) are advised to refrain from preparing the body.
- Any person (e.g. family member, religious leader) preparing the deceased (e.g. washing, cleaning or dressing body, tidying hair, trimming nails or shaving) in a community setting must wear gloves for any contact with the body.
- For any activity that may involve splashing of bodily fluids, eye and mouth protection (face shield or goggles and surgical mask) should be worn.
- Clothing worn to prepare the body should be immediately removed and washed after the procedure or an apron or gown should be worn.

After preparation

- Family and friends may view the body after it has been prepared for burial, but they must be asked not to touch or kiss the body. Limit the number of people at the burial if possible. Family and friends must wash hands thoroughly with soap and water after the viewing.
- People who are in charge of placing the body in the grave must wear gloves. They should wash hands with soap and water after removal of the gloves once the burial is complete.
Instructions to family on burial

Families should follow all guidance provided by health authorities on handling the body of the deceased. The following safety instructions should be provided to family members, religious and community leaders, and any other relevant parties:

**Safe burial: instructions for family members**

- Funerals should be closed casket.
- No touching or kissing of the body.
- Funerals should be held on the same day the body is collected from the mortuary and ideally funeral services held at burial or cremation centre.
- If funerals are allowed, then additional measures should be taken to reduce transmission for mourners at the gathering
- Ensure a physical distance of 1.5 metres between mourners. Seating and space should be set up to accommodate this.
- No shaking of hands, hugging or kissing between mourners should be allowed.
- If possible, the gathering should be held in a well-ventilated space, like an open house or with windows left open.
- Burial attendants or funeral pallbearers must wear gloves and wash hands with soap and water after removal of the gloves following the burial.
- Pay attention to protect children, persons with existing medical conditions and elderly persons in attendance
- In areas of community transmission, anyone attending the funeral should wear a mask.

Environmental cleaning after death

COVID-19 virus has been detected on surfaces and in environments after up to 72 hours, so cleaning the environment is critical to reduce transmission.

In the ward:

- Perform environmental decontamination as per routine cleaning and disinfection processes, including the trolley used to transport the body to the mortuary.

At the mortuary:

- Instruments used are cleaned and disinfected immediately as part of routine procedure.
- All surfaces where persons are placed or autopsies are performed are first cleaned with soap and water
- After cleaning with soap and water, a disinfectant with a minimum concentration of 0.1% bleach (1000ppm) or 70% alcohol is placed on the surface for at least 1 minute before wiping clean.
• Hospital grade disinfectants may also be used as long as they have a label claim against enveloped viruses, and they remain on the surface according to manufacturer’s recommendations.

• Staff must always wear adequate PPE (contact and droplet precautions) for cleaning

• Do not use compressed air and/or water under pressure for cleaning, or any other methods that can cause splashing or might re-aerosolized infectious material.
6. Management of COVID-19 infection in the healthcare worker

This section has been adapted from WHO guidance on prevention, identification and management of HW infection in the context of COVID-19.18

Key points

- HWs include physicians, nurses, allied health workers (x-ray, laboratory staff, physiotherapists etc.), and administrative and support staff, such as cleaning and laundry personnel, admission/reception clerks, patient transporters and catering staff.
- HW in contact with and/or who care for COVID-19 patients are at a higher risk of infection than the general population.
- Transmission involving HW occurs in community settings (such as in households) in addition to health care settings.
- COVID-19 infections among HW may lead to a depleted workforce during a time when the demand on the healthcare system has increased. Mitigating and reducing this risk is essential to protecting their well-being and reducing the spread of COVID-19.

Mitigating and reducing the risk of HW infection

- Appropriate PPE use, hand hygiene, implementation of universal masking policies in health care facilities, and adequate IPC training and education
- A system for managing exposures based on risk assessment should be in place to promote and support HW’s reporting of occupational and non-occupational exposures to COVID-19.
- A system for managing suspected COVID-19 among staff, including measures for staff who test positive for COVID-19 should be in place.
- Clear criteria for returning to work should be established according to the WHO principles for discontinuing isolation for COVID-19.
- Ensure HWs are trained to identify suspected patients and manage them in accordance with guidelines.
- Ensure an adequate patient-to-staff ratio.
- Establish a surveillance process for ILI and acute respiratory infections (ARIs) potentially caused by COVID-19 among HWs.
- Ensure HWs and the general public understand the importance of seeking health care if symptomatic.
- Ensure adherence of IPC policies and procedures for all staff members.

18 Prevention, identification and management of health worker infection in the context of COVID-19: interim guidance, 30 October 2020
Healthcare worker exposure risk assessment

The approach indicated in this guidance distinguishes exposures with high and low risk for COVID-19 infection.

After exposure to a positive COVID-19 case, the occupational health and safety department, or HWs line manager, can advise the HW to:

- **Continue to work** depending on ability to do so and the exposure risk assessment (see below)
- Provide recommendations to monitor symptoms and for additional follow-up as needed
- Arrange for COVID-19 testing according to the national and local testing strategy
- Consider quarantine, depending on the nature of the exposure

Refer to the following table and also Annex 13: Risk assessment form for healthcare workers exposed to COVID-19.

### Healthcare worker exposure risk and advised action

<table>
<thead>
<tr>
<th>Exposure type</th>
<th>Advice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower risk exposure in the workplace</td>
<td></td>
</tr>
<tr>
<td>● Provided direct care to COVID-19 patients</td>
<td>Asymptomatic</td>
</tr>
<tr>
<td>● Present during an AGP on a patient with</td>
<td>• May continue to work following IPC measures.</td>
</tr>
<tr>
<td>COVID-19 while wearing appropriate PPE and</td>
<td>• Reinforce IPC measures.</td>
</tr>
<tr>
<td>following IPC precautions.</td>
<td>• Self-monitor for symptoms and report immediately if developing any</td>
</tr>
<tr>
<td>● Exposure to a colleague who is a suspect or</td>
<td>symptoms.</td>
</tr>
<tr>
<td>confirmed COVID-19 case at work while</td>
<td></td>
</tr>
<tr>
<td>wearing a mask.</td>
<td></td>
</tr>
<tr>
<td>Higher risk exposure in the workplace</td>
<td>Asymptomatic</td>
</tr>
<tr>
<td>● Provided direct care to COVID-19 patients</td>
<td>• Quarantine for 14 days after last exposure.</td>
</tr>
<tr>
<td>● Present during an AGP without respirators.</td>
<td>• Test for COVID-19</td>
</tr>
<tr>
<td>● Close contact with a colleague who is</td>
<td>• Monitor daily for symptoms and notify necessary authorities.</td>
</tr>
<tr>
<td>confirmed COVID-19 with no masks (e.g. in</td>
<td></td>
</tr>
<tr>
<td>a break room, while eating etc.).</td>
<td></td>
</tr>
<tr>
<td>● Exposure to splash or spray of body fluids</td>
<td></td>
</tr>
<tr>
<td>blood and/or a puncture/sharp injury of</td>
<td></td>
</tr>
<tr>
<td>confirmed COVID-19 case.</td>
<td></td>
</tr>
</tbody>
</table>
### Non-occupational exposure
- Contact with a confirmed case who is a family or community member without appropriate IPC measures (mask, physical distancing, hand hygiene).

### Asymptomatic
- Quarantine for 14 days after the exposure.
- Test for COVID-19.
- Monitor daily for symptoms and notify necessary authorities.

### Symptomatic
- Start self-isolation
- Test for COVID-19

### Healthcare worker infection management
Any HW who identifies as **symptomatic** or **tests positive for COVID-19** should:
- Immediately be **isolated** and stop all patient care activities.
- Inform their **supervisor** who should notify the IPC focal point
- **Seek care if feeling unwell** or symptoms worsen through the appropriate referral system.

---

19 PNG National Guidelines on Clinical Management for COVID-19 in healthcare settings v2
Measures for healthcare workers positive for COVID-19

<table>
<thead>
<tr>
<th>Health worker status</th>
<th>IPC Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health worker tests COVID-19 positive (with or without symptoms)</td>
<td>• Isolate in a health-care facility, designated setting (e.g. health-care facility, non-traditional facility), or at home as appropriate and according to clinical condition for a minimum of 10 days plus 3 days without symptoms</td>
</tr>
</tbody>
</table>
| Health worker is symptomatic but tests negative for COVID-19                         | • Follow guidance for diagnostic testing for COVID-19  
  • Consult with the appropriate authority on whether to return to work and consider if additional testing is required for alternate diagnoses according to local guidance  
  • Any HW permitted to return to work should be advised of symptoms to monitor and follow infection control guidance as described above, including the use of appropriate PPE. |

Healthcare worker return to work advice

The latest National guidelines on Clinical Management should be adopted when making decisions about return to work of HWs who were affected by COVID-19, with some additional considerations for specific sub-populations of HWs.

Criteria for releasing COVID-19 patients from isolation

- **Symptomatic** patients may be released from isolation 10 days after symptom onset, plus at least 3 additional days without symptoms (including without fever and without respiratory symptoms).
- **Asymptomatic** individuals can be released from isolation 10 days after they first tested positive.
- Some individuals may experience symptoms (such as a post viral cough among others) beyond the period of infectivity or minimum 13 days of isolation. Medical assessment on a case-by-case basis should determine whether HW are fit to return to work.

Return to work should be decided on a case-by-case basis in collaboration with the IPC focal point and should include the HW’s own preferences.
Conditions for determining whether a HW can return safely to work

- What area of the facility they work in (dedicated to COVID-19 patients, ICU or long-term care versus, direct patient care, or non patient-facing care)
- The clinical conditions (e.g. immunocompromised, age, comorbidities) of the patients for whom the HW may provide care
- The HW’s general health, and severity of previous illness with COVID-19

HW should adhere to the following recommendations when returning to work post-COVID-19 infection:

Recommendations when returning to work post-COVID-19 infection

- Undergo refresher training on IPC practices such as hand and respiratory hygiene, fit test and fit check of respirators, (Annex 8: How to perform a mask seal check) PPE use, masking policies and safe physical distancing,
- Follow recommended public health measures in home and community settings (maintain physical distancing, hand hygiene, respiratory etiquette, mask use),
- Continue to self-monitor for symptoms suggestive of COVID-19 and immediately stop working, report to their respective departments, and self-isolate if new or worsening symptoms develop,
- Receive ongoing support and monitoring for longer term health complications and potential psychological implications.
References

General


2. World Health Organization – Regional Office for Western Pacific, COVID-19 Information for the public page https://www.who.int/westernpacific/emergencies/covid-19/information


5. World Health Organization – Regional Office for Western Pacific, 19 May 2020, How to put on and remove PPE https://www.who.int/westernpacific/internal-publications-detail/how-to-put-on-and-remove-personal-protective-equipment-(ppe)


Community settings


Healthcare facility settings

13. World Health Organization – Regional Office for Western Pacific, 10\textsuperscript{th} March 2020, The COVID-19 risk communication package for healthcare facilities, https://iris.wpro.who.int/handle/10665.1/14482


Environmental


Care of dead body


Healthcare worker exposure and management

Appendices

Annex 1: WHO 5 moments of hand hygiene approach
Annex 2: How to handrub

How to Handrub?

RUB HANDS FOR HAND HYGIENE! WASH HANDS WHEN VISIBLY SOILED

Duration of the entire procedure: 20-30 seconds

1a. Apply a palmful of the product in a cupped hand, covering all surfaces;

1b. Rub hands palm to palm;

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

3. Palm to palm with fingers interlaced;

4. Backs of fingers to opposing palms with fingers interlocked;

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

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

7. Once dry, your hands are safe.

World Health Organization

Patient Safety
A World Alliance for Safer Health Care

SAVE LIVES
Clean Your Hands

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May 2009

66 – National Department of Health

National Guideline on IPC in the context of COVID-19
Annex 3: How to handwash

How to Handwash?

WASH HANDS WHEN VISIBLY SOILED! OTHERWISE, USE HANDRUB

Duration of the entire procedure: 40-60 seconds

1. Wet hands with water;
2. Rub hands palm to palm;
3. Right palm over left dorsum with interfaced fingers and vice versa;
4. Palm to palm with fingers interlaced;
5. Backs of fingers to opposing palms with fingers interlocked;
6. Rotational rubbing of left thumb clasped in right palm and vice versa;
7. Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;
8. Rinse hands with water;
9. Dry hands thoroughly with a single use towel;
10. Use towel to turn off faucet;
11. Your hands are now safe.
Annex 5: PPE according to risk of different healthcare activities

FOR HEALTHCARE WORKERS

Personal Protective Equipment (PPE) According to Healthcare Activities

Remember: Hand hygiene is always important. Clean hands before putting on, and after taking off, PPE.

For Triage/Points of Entry Screening Personnel:
- Medical mask

For Collecting Respiratory Specimens:
- Goggles OR face shield
- Medical mask
- Gown
- Gloves

For Caring for a Suspected/Confirmed Case of COVID-19 with No Aerosol-Generating Procedure:
- Goggles OR face shield
- Medical mask
- Gown
- Gloves

For Caring for a Suspected/Confirmed Case of COVID-19 With Aerosol-Generating Procedure:
- Goggles OR face shield
- Respirator (N95 or FFP2)
- Gown
- Gloves

For Transport of Suspected/Confirmed Case of COVID-19, Including Direct Care:
- Goggles OR face shield
- Medical mask
- Gown
- Gloves

World Health Organization
Western Pacific Region
Annex 6: How to put on and remove PPE

HOW TO PUT ON AND REMOVE
Personal Protective Equipment (PPE)
How to put on PPE (when all PPE items are needed)

Step 1
- Identify hazards and manage risk
- Gather the necessary PPE
- Plan where to put on and take off PPE
- Do you have a buddy? Mirror?
- Do you know how you will deal with waste?

Step 2
Perform hand hygiene using soap and water (40-60 seconds) or alcohol-based hand rub (20-30 seconds)

Step 3
Put on a gown

Step 4
Put on medical mask and eye protection (e.g., face shield or goggles)

Step 5
Put on gloves over gown cuff

Step 6
Visually check yourself in mirror or with buddy

Note: If performing an aerosol-generating procedure (e.g., aspiration of respiratory tract, intubation, resuscitation, bronchoscopy), a particulate respirator (e.g., US NIOSH-certified N95, EU FFP2 or equivalent respirator) should be used in combination with eye protection. Do user seal check if using a particulate respirator.

How to remove PPE

Step 1
Remove gloves

Step 2
Perform hand hygiene using soap and water (40-60 seconds) or alcohol-based hand rub (20-30 seconds)

Step 3
- Peel off gown roll inside out
- Dispose gloves and gown safely

Step 4
Perform hand hygiene using soap and water (40-60 seconds) or alcohol-based hand rub (20-30 seconds)

Step 5
If wearing eye protection and mask:
- Remove eye protection from behind
- Put eye protection in a separate container for reprocessing
- Remove mask from behind
- Move mask away from face
- Do not touch front of mask
- Do not allow the contaminated mask to touch any surface
- Dispose of mask safely

Step 6
Perform hand hygiene using soap and water (40-60 seconds) or alcohol-based hand rub (20-30 seconds)
Annex 7: How to put on and remove PPE for aerosol generating procedures

**HOW TO PUT ON AND REMOVE**

**Personal Protective Equipment (PPE)**

**How to put on PPE (for aerosol generating procedures)**

**Step 1**
- Identify hazards and manage risk
- Gather the necessary PPE
- Plan where to put on and take off PPE
- Do you have a buddy? Mirror?
- Do you know how you will deal with waste?

**Step 2**
Perform hand hygiene using soap and water (40-60 seconds) or alcohol based hand rub (20-30 seconds)

**Step 3**
Put on a gown

**Step 4**
Put on respirator mask and eye protection (e.g. face shield or goggles)

**Step 5**
Put on gloves over gown cuff.

**Step 6**
Visually check yourself in mirror or with buddy

**How to remove PPE**

**Step 1**
Remove gloves

**Step 2**
Perform hand hygiene using soap and water (40-60 seconds) or alcohol based hand rub (20-30 seconds)

**Step 3**
- Peel off gown roll inside out
- Dispose gloves and gown safely

**Step 4**
Perform hand hygiene using soap and water (40-60 seconds) or alcohol based hand rub (20-30 seconds)

**Step 5**
If wearing eye protection and mask:
- Remove eye protection from behind
- Put eye protection in a separate container for reprocessing
- Remove mask from behind
- Remove lower strap first, then the upper
- Move mask away from face
- Do not touch front of mask
- Do not allow the contaminated mask to touch any surface
- Dispose of mask safely

**Step 6**
Perform hand hygiene using soap and water (40-60 seconds) or alcohol based hand rub (20-30 seconds)

Note: Aerosol generating procedures include aspiration of respiratory tract, intubation, resuscitation, and bronchoscopy, requiring the use of a particulate respirator (N95/KN95 FFP2).
Annex 8: How to perform a mask seal check

HOW TO PUT ON AND REMOVE
Personal Protective Equipment (PPE)

How to perform a particulate respirator seal check

**Step 1**
Perform hand hygiene using soap and water (40-60 seconds) or alcohol-based hand rub (20-30 seconds).

**Step 2**
Cup the respirator in your hand with the nosepiece at your fingertips allowing the headbands to hang freely below your hand.

**Step 3**
Position the respirator under your chin with the nosepiece up.

**Step 4**
Pull the top strap over your head resting it high at the back of your head. Pull the bottom strap over your head and position it around the neck below the ears.

**Step 5**
Place fingertips of both hands at the top of the metal nosepiece. Mold the nosepiece, using the fingers of each hand, to the shape of your nose. Pinching the nosepiece using only one hand may result in less effective respirator performance.

**Step 6**
Cover the front of the respirator with both hands, being careful not to disturb the position of the respirator.

*Step 6a. Positive seal check*
Exhale sharply. A positive pressure inside the respirator = no leakage. If leakage, adjust the position and/or tension steps.

*Step 6b. Negative seal check*
- Inhale deeply. If no leakage, negative pressure will make respirator cling to your face.
- Leakage will result in loss of negative pressure in the respirator due to air entering through gaps in the seal.
Annex 9: Do’s and don’ts of wearing a surgical mask safely

**HOW TO WEAR A MEDICAL MASK SAFELY**

**Do’s**
- Wash your hands before touching the mask
- Inspect the mask for tears or holes
- Find the top side, where the metal piece or stiff edge is
- Ensure the colored-side faces outward
- Place the metal piece or stiff edge over your nose
- Cover your mouth, nose, and chin
- Avoid touching the mask
- Remove the mask from behind the ears or head
- Keep the mask away from you and surfaces while removing it
- Discard the mask immediately after use preferably into a closed bin
- Wash your hands after discarding the mask

**Don’ts**
- Do not use a ripped or damp mask
- Do not wear the mask only over mouth or nose
- Do not wear a loose mask
- Do not touch the front of the mask
- Do not remove the mask to talk to someone or do other things that would require touching the mask
- Do not leave your used mask within the reach of others
- Do not re-use the mask

Remember that masks alone cannot protect you from COVID-19. Maintain at least 1 metre distance from others and wash your hands frequently and thoroughly, even while wearing a mask.
Annex 10: Patient flow at the screening and assessment area

Suspected COVID-19 case
A person who meets the clinical OR epidemiological criteria:

Clinical criteria
a) Respiratory illness presenting with at least 1 or more of the following signs or symptoms:
   - Fever (≥37.5°C or history of fever)
   - Cough
   - Shortness of breath
   - Sore throat
   - Loss of smell or taste

Epidemiological criteria
a) Close contact with a confirmed COVID-19 case in the 14 days prior to onset of symptoms

Probable COVID-19 case
a) A person meeting both clinical AND epidemiological criteria OR
b) Clinically suspected case ‘or whom testing could not be performed for any reason OR
c) A suspected case for whom testing for COVID-19 is inconclusive by testing laboratory

Confirmed COVID-19 case
a) A person with laboratory confirmation (rt-PCR or GeneXpert) of COVID-19 infection, irrespective of clinical signs and symptoms.
Annex 11: How to make chlorine (bleach) solution for disinfecting surfaces

**DISINFECTING SURFACES: GUIDE TO PREPARING CHLORINE (BLEACH) SOLUTION**

1. **Protect yourself by wearing appropriate personal protective equipment (PPE).**
   - For hospitals, clinics and health facilities:
     - Eye protection
     - Medical gown
     - Heavy-duty gloves
     - Apron
     - Pants
     - Closed shoes
   - For homes and other public places:
     - Eye protection
     - Long-sleeved shirt
     - Heavy-duty gloves
     - Apron
     - Pants
     - Closed shoes

2. **Prepare materials.**
   - 3.5% Liquid bleach
   - Water
   - Measuring cup
   - Buckets with lids
   - Labels
   - Marker

3. **Prepare 0.5% chlorine solution.**
   - This strong concentration is used for disinfecting surfaces contaminated with blood spills/stains and other body fluids.
   - Prepare solution in a well-ventilated area.
   - Pour 1 part 3.5% liquid bleach and 6 parts water into a bucket.
   - Stir well.
   - Label bucket to indicate concentration with the date and time of preparation.

4. **Prepare 0.1% chlorine solution.**
   - This concentration is used for regular surface disinfection.
   - Prepare solution in a well-ventilated area.
   - Pour 1 part 0.5% chlorine solution and 4 parts water into a bucket.
   - Stir well.
   - Label bucket to indicate concentration with the date and time of preparation.

**Reminders**

- Clean surfaces first with detergents and water before disinfecting with bleach solution.
- Apply detergent or disinfectant with a cloth or paper towel. Do not spray directly onto surface.
- Prepare bleach solution daily. Discard leftover after 24 hours.
- Seal the bucket with a lid when not in use.
- Store in shade. Keep out of direct sunlight.
- Keep out of children’s reach.
Annex 12: Home quarantine

What is home quarantine?
Quarantine is when you are well but may have been in contact with someone with COVID-19.
You must avoid contact with others and quarantine at home for 14 days to prevent the spread of the virus.

Quarantine means you:
Must not leave your home except:
- in an emergency
- to obtain essential medical care
Must not go into public places including work and shops
Must not let anyone into your home unless they:
- usually live with you
- are entering to provide medical care

How to quarantine?
Stay in your own room - if you can’t do this, keep 1.5m distance from others at all times.
Use a separate bathroom, if possible.
Avoid shared areas and items such as utensils, drinking cup and glass, towels, etc.
Wear a mask when in the same room as others.
Have a supply of healthy food, water and any prescription medicine.

Preventing infection during home quarantine
- Wash your hands frequently with soap and clean water for at least 20 seconds.
- Cover your coughs and sneezes with a bent elbow or tissue. Throw tissue immediately into a bin with cover.
- Avoid touching your eyes, nose and mouth.
- Clean places that you touch with bleach or alcohol disinfectant solution: door handles, phones, laptops, bathroom, toilet, light switches, etc.
- Wash your clothes and beddings in hot water (at 60-90 degrees if possible) with regular detergent.
**Monitor your health during quarantine**

Monitor your symptoms daily.

If you develop a cough, fever or shortness of breath, call the COVID-19 toll-free hotline **1-800-2000** immediately.

---

**Planning home care in case you get COVID-19**

If you test positive for COVID-19, your doctor will make recommendation on your care either at home or at the hospital.

Consider who will take care of you if you do become sick.

---

**Quarantine and vulnerable people**

People over 60 and people with underlying medical conditions are more likely to get very sick from COVID-19.

Arrange support from family, friends, neighbors and healthcare professionals for your care if you become sick.

---

**Your well-being**

Quarantine is important to stop the spread of COVID-19 – but it can be stressful and boring.

Look after your well-being and mental health.

Keep in touch with family members and friends via telephone, email or social media.

Where possible, keep your normal daily routines that can be done while in your room, such as reading and pursuing a hobby.

Eat a healthy diet and get plenty of fluids.

Exercise regularly.

Arrange to work from home if this option is available to you.

---

As of 28 July 2020
Annex 13: Risk assessment form for healthcare workers exposed to COVID-19

### HEALTHCARE WORKER INFORMATION

<table>
<thead>
<tr>
<th>Last name</th>
<th>First name</th>
<th>Sex</th>
<th>Age (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

#### Healthcare worker role (check all that apply)

- Facilities/maintenance worker
- Food services worker
- Laboratory worker
- Medical doctor (attending)
- Medical doctor (intern/resident)
- Medical technician
- Midwife
- Nursing assistant or technician (or equivalent)
- Nutritionist
- Others, specify

#### Healthcare facility type (select primary location)

- Hospital
- Primary health centre, specify level ________________
- Outpatient clinic, specify clinic type ________________
- Nursing home or skilled nursing facility
- Home care
- Other, specify ________________

### Step 1: Assess the type of activity the HW is engaged in, using the COVID-19 exposure risk assessment form for HW

**Ask the HW**

Did the HW participate in any of the following scenarios with a patient with suspected or confirmed COVID-19 (exposure to COVID-19)?

- A. Direct physical care
- B. Face-to-face contact (within 1.5 metres)
- C. Perform or was present in the same room during any aerosol-generating procedure
- D. Direct contact with the immediate environment

**If HW answers NO**

HW can continue to work, adhere to infection prevention and control precautions and in accordance with local policy. Monitor for symptoms.

**If HW answers YES**

Go to Step 2
Step 2: Determining the level of risk based on exposure

Ask the HW
Did any of the following exposure events occur (no or yes)?
A. Any type of unprotected exposure to body fluids/respiratory secretions during a health care interaction with a COVID-19 patient. (e.g. splash of body fluids/respiratory secretions into the eyes, mouth or non-intact or any sharps injury)?
B. Any major failure in practicing appropriate precautions when providing direct care with a COVID-19 patient. (e.g. Not wearing appropriate PPE. Not wearing surgical mask, not wearing eye protection, not wearing a respirator mask during aerosol-generating procedures)

If HW answers NO
The HW has had a low-risk exposure event

If HW answers YES
The HW has had a high-risk exposure event

LOW RISK exposure advice
A. HW can continue to work and adhere to infection control precautions.
B. Self-monitor for symptoms, for 14 days after the last exposure if symptoms develop, inform their manager/supervisor and manage as per suspected patients.
C. Offer psychosocial support

HIGH RISK exposure advice
A. All HWs must immediately stop all interactions with patients and colleagues.
B. All HWs must inform their manager/supervisor and provide contact information
C. Offer psychosocial support

Management of HWs following a high-risk exposure event will depend upon the current surveillance testing policy and the results of testing:

If PCR is positive:
- Isolate HW in a healthcare facility or designated setting and manage as per national/local policy

If initial PCR is negative:
- Quarantine HW at a designated setting or at home
- Exclude HW from workplace for 14 days
- HW to self-monitor for symptoms for 14 days, if symptoms develop, inform their manager/supervisor and manage as per suspected patients.

If no PCR testing was performed:
- Quarantine HW at a designated setting or at home
- Exclude HW from workplace for 14 days
- Self-monitor for symptoms for 14 days. If symptoms develop manage as per a suspected patient

Part I

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Date of visit</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Name of Facility</td>
<td></td>
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<tr>
<td>3</td>
<td>Address</td>
<td></td>
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<tr>
<td>4</td>
<td>Contact Person</td>
<td></td>
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<tr>
<td>5</td>
<td>Position/Designation</td>
<td></td>
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<tr>
<td>6</td>
<td>Contact Number</td>
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</tbody>
</table>

Part II

<table>
<thead>
<tr>
<th>Activity</th>
<th>Indicator/Evidence</th>
<th>Done</th>
<th>Not Applicable</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Administrative processes</td>
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<tr>
<td>1. The facility has an organized COVID-19 response team, led by Hospital Director or the senior management</td>
<td>a. Minutes of the meeting</td>
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<tr>
<td></td>
<td>b. Frequency of meeting</td>
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<td></td>
<td>c. Last meeting conducted</td>
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<tr>
<td>2. The hospital has a dedicated infection prevention and control team (or key staff member).</td>
<td>a. Infection Prevention and Control Committee with defined roles and responsibilities</td>
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<tr>
<td></td>
<td>b. Infection Prevention and Control protocols/ policies in place</td>
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<tr>
<td>3. Facility has decided its capacity to manage COVID-19 patients (transfer to referral hospitals or admit patients).</td>
<td>a. Medical charts</td>
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<td></td>
<td>b. Referral forms/logbooks</td>
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<tr>
<td></td>
<td>c. Functional ambulance</td>
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<tr>
<td>4. Establish responsibility for tracking information about COVID-19 (e.g. case counts).</td>
<td>a. Written protocol on case reporting of highly transmissible and notifiable infectious diseases</td>
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<tr>
<td></td>
<td>b. Reports/Report forms</td>
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</tr>
<tr>
<td>5. A system is in place to inform the IPC team and COVID-19 response team of suspected/confirmed COVID-19 cases.</td>
<td>a. Infection Prevention and Control Guidelines</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>b. Process Flow Chart</td>
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<tr>
<td>6. The IPC team undertakes investigation and contact tracing when suspected/confirmed cases are reported. The team is trained to</td>
<td>a. Roles and responsibilities of IPC committee</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>b. Written protocol on timely referral and case reporting</td>
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</table>
### B. Infection, prevention & Control Practices

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<table>
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</thead>
<tbody>
<tr>
<td>1. <strong>Regular training for standard and additional precautions as well as PPE use (donning and doffing) is in place.</strong></td>
<td>a. Certificates of training of staff</td>
<td>b. Evidence of a training plan</td>
</tr>
<tr>
<td>2. <strong>Adequate PPE is easily accessible to staff. If the supply of PPE is limited, prioritize staff caring for cases.</strong></td>
<td>a. Inventory of medical supplies</td>
<td></td>
</tr>
<tr>
<td>3. <strong>A system is in place to keep track of which healthcare workers who take care of suspect/confirmed cases.</strong></td>
<td>a. Implement a system of monitoring of health care workers who take care of suspect/confirmed cases</td>
<td>b. Written policy / protocol on timely referral and case reporting of highly transmissible and notifiable infectious diseases</td>
</tr>
<tr>
<td></td>
<td>c. Logbook of reports on sick employees</td>
<td></td>
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<tr>
<td>4. <strong>All healthcare workers including those who do not directly care for patients are instructed to report to the manager if they develop any symptoms and is advised not to report to duty.</strong></td>
<td>a. Written policy / protocol on timely referral and case reporting of highly transmissible and notifiable infectious diseases</td>
<td>b. Reports</td>
</tr>
<tr>
<td>5. <strong>If healthcare workers develop symptoms, they immediately stop all interactions with patients, inform a manager/healthcare facility, and are isolated at a designated setting or home, and tested for COVID-19.</strong></td>
<td>a. Written policy / protocol on timely referral and case reporting of highly transmissible and notifiable infectious diseases</td>
<td></td>
</tr>
<tr>
<td>6. <strong>Protocol is available outlining the criteria for healthcare workers to be quarantined, isolated, and to come back to work after being quarantined, symptomatic or COVID-19 positive.</strong></td>
<td>a. Written policy / protocol on timely referral and case reporting of highly transmissible and notifiable infectious diseases</td>
<td></td>
</tr>
<tr>
<td>7. <strong>All healthcare workers are instructed to practice standard precautions (frequent hand hygiene, respiratory etiquette and physical distancing) not only at healthcare facilities, but also at home and in the community, and</strong></td>
<td>a. Written policy / protocol</td>
<td>b. Signage in all areas (cough etiquette, physical distancing)</td>
</tr>
</tbody>
</table>

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7. A system is in place for the flow of information to reach relevant offices/persons including hospital administration, NDOH/ Surveillance teams.

- Process Flow Chart
- Communication documents

8. There is periodic assessment on compliance with recommended infection prevention practices (internal and/or external audits)

- Audit reports (internal and/or external audits)
also for the non-treatment settings in healthcare facilities.

c. Presence of designated areas or toilets for handwashing or dispenser for hand sanitizers

8. Ensure compliance with hand hygiene practices.

a. Hand hygiene signage in all bathrooms, sinks and at all frequently visited areas
b. Presence of designated areas or bathrooms for handwashing or dispenser for hand sanitizers

9. Soap water and sink or alcohol based hand rub are available and accessible at all patient care areas.

10. Sick leave policies in place.

C. Screening, Triage and Isolation

1. Screen all individuals (staff and non-staff) entering the facility for temperature, symptoms and history of contact with suspected/confirmed cases at all entry points to identify suspected cases.

a. Screening area with staff who undertake temperature, symptom, and contact history screening at entry points
b. Signs and posters directing patients with respiratory symptoms to proceed directly to the screening area
c. A physical barrier between staff and patients (or face shields for staff)
d. Staff is wearing masks
e. Enough stock of masks for suspected patients.
f. Hand hygiene at the entry point

2. Patients and visitors are instructed on recommended hand hygiene and respiratory hygiene/cough etiquette practices.

a. Signage in conspicuous areas

3. Hand hygiene available at all points of care.

a. Have designated areas for handwashing or dispenser for hand sanitizers

4. Signage available to indicate the type of transmission-based precaution to employ.

a. Signs at the entrance to isolation areas to indicate clearly which precaution staff need to use
b. Presence of handwashing areas

5. PPE readily available for use in assessment and isolation areas.

a. Updated inventory of PPEs

6. Direct suspected patients to an assessment area for further assessment.

a. Well-ventilated waiting space with chairs spaced 1.5m apart from each other
7. Isolate suspected/probable/confirmed patients who require hospitalisation in well-ventilated single rooms or if single rooms are not available, they are cohorted in one room. Mixing of suspected and confirmed cases is avoided where possible.

| b. | Guidelines and treatment flowcharts that HWs can easily refer to. |

8. Necessary equipment is available in the isolation room.

| a. | Dedicated toilet |
| b. | Water and soap or ABHR |
| c. | Waste bin |
| d. | Sharp container |
| e. | Dedicated medical equipment |

9. Place posters and signs to indicate PPE required, disinfection guidance etc to guide staff as to processes.

**D. Environmental controls**

1. Have protocols or procedures environmental cleaning and disinfection of patient care areas

| a. | Protocol and mode of disinfection |
| b. | Schedule and frequency of disinfection |
| c. | Train staff on protocols |

2. Management of laboratory specimens, laundry, food service utensils, and medical waste following safe routine procedures according to IPC guidelines.

| a. | Written policies on areas listed |

3. Ensure the healthcare facility has a protocol and a marked route for management and final disposal of infectious waste, including sharps.

| a. | Procedure for the proper disposal of waste and hazardous/infectious |

4. Ensure physical space and guidelines for management of dead bodies resulting from COVID-19.

| a. | Policies and procedures on disposition of dead bodies from COVID-19 |

**E. Clinical Management of Suspected/Confirmed COVID-19 Cases**

1. Follow the National Clinical Guidelines for COVID-19 in Healthcare settings

| a. | Support implementation of pathway |
| b. | Guidelines available at assessment/isolation areas |


| a. | Written policies for HR |
| b. | Contact tracing among health workers |
| c. | Services for health care workers (e.g. Mental health support) |

3. Coordinate with NDOH / PHA regarding collection, preparation, and transport of specimens and releasing of results.

| a. | Documented procedure on collection, preparation, and transport of specimen and reporting of results |
### 4. Establish a system to notify the laboratory ahead of time for COVID-19 specimens.
- **a.** Documented procedures on notification and referral to laboratory
- **b.** Communications

### 5. Avoid moving and transporting patients out of their room or area unless medically necessary. Notify the area receiving the patient of any necessary precautions as early as possible before the patient’s arrival.
- **a.** Process flow chart
- **b.** Proof of dedicated equipment / disinfection after use

### 6. Ensure that healthcare workers caring for suspected/confirmed cases are applying droplet and contact precautions with PPE.
- **a.** Written policies and protocol
- **b.** Appropriate hand hygiene
- **c.** Appropriate PPE
  - masks
  - goggles
  - long-sleeved gowns
  - gloves

### 7. Aerosol-generating procedures minimized. If necessary, ensure N95 respirator, eye protection, glove and gown is used for healthcare workers performing such procedures.
- **a.** Written policies and protocol
- **b.** Appropriate PPE
  - respirators
  - goggles
  - long-sleeved gowns
  - gloves

### 8. Adequate preparation and coordination when transporting patients between units within the hospital.
- **a.** Presence of a coordinated system-wide procedure for prevention of hospital associated infections
- **b.** Process flow chart

### 9. A 1.5 metre distance between beds is ensured regardless of whether patients are suspected of having COVID-19.
- **a.** Ensure at least 1.5 metre between patients at all times

### 10. Designate where possible, a team of healthcare workers to care exclusively for suspected or confirmed cases to reduce the risk of transmission where possible
- **a.** Work schedule of staff

### 11. Only assign healthcare workers who have been adequately trained to attend to the index patients.
- **a.** Written policies

### F. Transport of Suspected/Confirmed Patients

#### 1. Coordinate with NDOH, Rapid response teams regarding transfer.

#### 2. Inform receiving unit of plans for transfer to allow ample time for preparation.
- **a.** Process flow chart
- **b.** Logbooks (at both destination & referral facility) to be maintained
- **c.** Clean and disinfect transport vehicle post transfer