PPE for COVID19 & minimize risk

Preventing and controlling transmission of COVID 19 infection in Africa
PPE: Objectives

• Define PPE
• Risk assessment for wearing of PPE
• Rules about PPE and infection control practices
• Types of PPE and their recommended use in the care of Covid-19
What is PPE?

• Any type of face mask, glove, or clothing that acts as a barrier between infectious materials and the skin or eyes, nose and mouth (mucous membranes)

• When used properly, PPE can help prevent the spread of infection from one person to another
Who should put on (don) Personal Protective Equipment (PPE)?

• All clinical workers
• Those who care for patients with symptoms e.g. suspected cases with COVID-19
• All laboratory staff
• All support staff e.g. cleaners, waste handlers
• Family members who care for COVID-19 patients
Administrative control for minimising need for PPE

1. **Administrative Controls:**
   - Policies and procedures based on sound epidemiology and best practice
   - Education and training- how to don and doff

2. **Engineering Controls:**
   - Facility to have infrastructure to store and destroy
   - Infrastructure to contain spread

3. **Personal Protective Equipment (PPE) what is available**

**NOTE:** The above must be employed in conjunction with each other ensure proper IPC measures
Questions to ask before you carry out care on any patient

- **Contact**
  - What contact will I have with the Patient, what is the likely infection, what is mode of transmission

- **Procedure**
  - What procedure am I going to perform?

- **Risks**
  - Risk of splashes/sprays/needle stick/inhalation/aerosols

- **POCRA**

- **Control**
  - Available means of preventing or minimizing risk eg PPE
Risk Assessment and PPE

- **Risk assessment:**
- risk of exposure and extent of contact anticipated with blood, body fluids, respiratory droplets, and/or open skin
  - Select which PPE items to wear based on this assessment
  - Perform hand hygiene according to the WHO “5 Moments”
  - Should be done for each patient, each time

  **Make this routine!**

Remember that instruments, equipment, linen, supplies, and hard surfaces can be contaminated with blood and body fluids as well.

**The contamination is not always visible.**
Rules about the use of PPE

• PPE can be a transmitter of microbes when contaminated.

• Use of PPE to allay personal prejudice or fear without indication for a procedure can sometimes increase the risk of infection

• Not a substitute for poor infection control practice (including engineering) or nursing procedure

• All PPE have a limited life and must be discarded after use as indicated, usually after each patient use
Use of PPE for Covid-19

• The use of personal protective equipment (PPE) by healthcare workers requires a risk evaluation of the level of care.

• Triage:
  • Collection of specimens for laboratory diagnosis
  • Suspected or confirmed case of COVID-19 requiring healthcare facility admission and NO AGP
  • Suspected or confirmed case of COVID-19 requiring healthcare facility admission and AGP
Principles for using PPE (1)

• Always clean your hands before and after wearing PPE
• PPE should be available where and when it is indicated
  • in the correct size
  • select according to risk or per transmission based precautions
• Always put on before contact with the patient’s body fluid/or when patient has contact precaution
• Always remove immediately after completing the task and/or leaving the patient care area
• NEVER reuse disposable PPE
• Clean and disinfect reusable PPE between each use
Principles for using PPE (2)

- Change PPE immediately if it becomes contaminated or damaged
- PPE should not be adjusted or touched during patient care; specifically
  - never touch your face while wearing PPE
  - if there is concern and/or breach of these practices, leave the patient care area when safe to do so and properly remove and change the PPE
- Always remove carefully to avoid self-contamination (from dirtiest to cleanest areas)
Hand Hygiene and PPE

- Best way to prevent the spread of germs in the health care setting and community
- Our hands are our main tool for work as health care workers - and they are the key link in the chain of transmission
Types of PPE Used in care of Covid-19 patient

- GLOVES – protect hands
- GOWNS/ APRONS – protect skin and/or clothing
- MASKS – protect mouth/nose
  - RESPIRATORS – protect respiratory tract from airborne infectious agents.
- GOGGLES – protect eyes
- FACE SHIELDS – protect Face (mouth, nose, and eyes)
<table>
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<tr>
<th>Level of case</th>
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<tr>
<td>Triage</td>
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<tr>
<td>Collection of specimens for laboratory diagnosis</td>
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<tr>
<td>Suspected or confirmed case of COVID-19 requiring healthcare facility admission and NO aerosol-generating procedure</td>
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<tr>
<td>Suspected or confirmed case of COVID-19 requiring healthcare facility admission and WITH aerosol-generating procedure</td>
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<table>
<thead>
<tr>
<th>Hand hygiene</th>
<th>Gown</th>
<th>Medical mask</th>
<th>Respirator (N95 or FFP2)</th>
<th>Goggle (eye protection) OR Face shield (facial protection)</th>
<th>Gloves</th>
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<tr>
<td>X</td>
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To minimize direct unprotected exposure to blood and body fluids, use…

<table>
<thead>
<tr>
<th>SCENARIO</th>
<th>HAND HYGIENE</th>
<th>GLOVES</th>
<th>GOWN</th>
<th>MEDICAL MASK</th>
<th>EYE-WEAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always before and after patient contact, and after contaminated environment</td>
<td>x</td>
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<tr>
<td>If direct contact with blood and body fluids, secretions, excretions, mucous membranes, non-intact skin</td>
<td>x</td>
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<td>If there is risk of splashes onto the health care worker’s body</td>
<td>x</td>
<td>x</td>
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<td></td>
</tr>
<tr>
<td>If there is a risk of splashes onto the body and face</td>
<td>x</td>
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<td>x</td>
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</table>
Personal Protective Equipment (PPE) Cart- (examples of Storage)
Procedure for donning PPE
Preparing to Don PPE

- Ensure you have all the PPE laid out
- Always make sure you have the right size for you
- Plan where to Don and doff
- Plan for waste disposal
- Remember to perform Hand hygiene
DONNING OF GOWN

• Put arms in sleeves, pull gown towards shoulders to fully cover torso from neck to knees, arms to wrists and wrap to the back. Fasten at the back of the neck and tie around the waist,

• Tie the gown securely but in a manner that it can be easily untied when you begin the doffing process. Leave some length of the tie so that it can be pulled and untied without much effort
Donning the Mask

• Perform Hand hygiene, remove a mask from the box and make sure there are no obvious tears or holes in either side of the mask.
• Identify the top - the side of the mask that has a stiff bendable edge is the top and is meant to mold to the shape of your nose.
• The colored side of the mask is usually the front and should face away from you, while the white side touches your face.

- **Face Mask with Ear loops:** Hold the mask by the ear loops. Place a loop around each ear.
- **Face Mask with Ties:** Bring the mask to your nose level and place the ties over the crown of your head and secure with a bow.
- **Face Mask with Bands:** Hold the mask in your hand with the nosepiece or top of the mask at fingertips, allowing the headbands to hang freely below hands. Pull the top strap over your head so that it rests over the crown of your head. Pull the bottom strap over your head so that it rests at the nape of your neck.
• Fit flexible band to nose bridge and snug to face & under chin
Non medical use of cloth masks - community

LET’S STOP THE SPREAD

Should you wear a mask?
Well made cloth masks do not replace the 5 Golden Rules of Good Hygiene. They may offer some extra protection if well made and used correctly.

1. Wash your hands often for at least 20 seconds with soap and water.
2. Do not touch your face with unwashed hands.
3. Cough or sneeze into a tissue or your elbow. Safely throw away the tissue.
4. Keep 1.5 metres apart from others.
5. Stay home if unwell. Contact a hotline or your health worker.

Follow the 5 Golden Rules of Good Hygiene to stop the spread of coronavirus:

Do not use N95 respirators and medical masks. There is a shortage and we must keep them to protect health workers caring for those with COVID-19.

National Hotline: 0800 029 999
Provincial Hotline: 021 928 4102
National WhatsApp: 0600 123 456

FOR MORE INFORMATION: www.westerncape.gov.za
Donning Mask: the Dos and Don’ts
Donning a Respirator (N–95 mask)

Step 1
- Cup the respirator in your hand with the nosepiece at your fingertips, allowing the headbands to hang freely below your head.

Step 2
- Position the respirator under your chin with the nosepiece up.
How to perform a particulate respirator seal check

Step 3
- 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 4
- Place fingertips of both hands at the top of the metal nosepiece
- Mould the nosepiece (USING TWO FINGERS OF EACH HAND) to the shape of your nose
  (Pinching the nosepiece with one hand may result in less performance)
How to perform a particulate respirator seal check

Step 5
– Cover the front of the respiratory with both hands, being careful not to disturb the position of the respirator.

Step 5a: Positive seal check
– **Exhale sharply.** Positive pressure inside the respirator = no leakage. If leakage, adjust the position and/or tension of the straps and retest.
– Repeat until the respirator is secured properly.

Step 5b: Negative seal check
– **Inhale deeply.** If no leakage, a negative pressure will make respirator cling to your face.

Leakage will result in air entering through gaps in seal.
Putting on the Goggles or face Shield

• Place over face and eyes and adjust strap to fit.
• Anti-fog feature improves clarity.

http://www.cdc.gov/hai/pdfs/ppe/PPE-Sequence.pdf
Donning of Gloves

• Gloves come in different sizes, so make sure you choose the right size for a good fit.
• If the gloves are too big, it is hard to hold objects and easier for germs to get inside your gloves; if too small more likely to tear.
• Start by identify the thumbs part and put on ensuring each finger fits in, pull down gently and extend to cover wrist
How to Don PPE

Personal Protective Equipment (PPE)
- guide for hospital clinical staff
Putting off/Doffing of PPE
General Considerations (Doffing PPE)

• Remove all PPE before exiting the patient room except a respirator, if worn.

• Perform Hand Hygiene between steps. If hands become contaminated and immediately after removing all PPE.
Removing Gloves

Outside of gloves are contaminated!

• Using gloved hands, grasp below the palm area of the other gloved hand, pull over fingers and peel backwards to remove turning inside out, hold removed glove in other gloved hand.

• Slide fingers of ungloved hand under remaining glove at wrist and peel off second glove over first glove

• Discard removed gloves in appropriate waste container

• Perform Hand hygiene afterwards
STOP USING GLOVES UNLESS YOU WORK IN A CLINIC OR A HOSPITAL.

Gloves are worn to avoid cross-contamination.

In a clinic/hospital environment, a clinician will glove up before touching a patient and then DISCARD the gloves before moving onto another task.

If you are wearing the same gloves when you shop, touch supplies, the trolley, the door, your phone, your face and so on, YOU ARE SPREADING GERMS!

It’s better not to wear gloves at all.

WASH YOUR HANDS after being to the shop or having completed a task.
Removing a Medical mask

• Perform Hand hygiene
• Avoid touching the front of the mask. The front of the mask is contaminated.
• Only touch the ear loops/ties/band.
• *Face Mask with Ear loops:* Hold both of the ear loops and gently lift and remove the mask.
• *Face Mask with Ties:* Untie the bottom bow first then untie the top bow and pull the mask away from you as the ties are loosened.
• *Face Mask with Bands:* Lift the bottom strap over your head first then pull the top strap over your head.
• Dispose the mask and perform hand hygiene
How to remove a Gown

• With clean hands, untie or break ties at the back and neck
• Touching only the inside of the gown, pull from neck and shoulders, then arms, turning inside out as gown is removed
• Avoid contaminating yourself while doing this
• Roll gown into bundle and discard in appropriate waste
• Perform hand hygiene
Removing protective eye cover

- With clean hands, remove eyewear by handling sides or back only
- Reprocess and store appropriately
- Wash hands
How to remove a respirator

• It's important that you not touch the front of the respirator.
• First, tilt your head forward, gently remove the bottom strap first by slowly pulling it over the head.
• Then remove the top strap, being very careful not to touch the front of the mask.
• Discard the mask safely in waste bin provided and Perform hand hygiene.
How to remove (doff) PPE

Public Health England

The correct order for removal and disposal of Personal Protective Equipment (PPE)
Alternative video: combined donning and doffing
## Extended use of PPE

<table>
<thead>
<tr>
<th>Type of PPE</th>
<th>Extended use</th>
<th>Reprocess</th>
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</thead>
<tbody>
<tr>
<td>Gloves (non-sterile)</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td>Face masks</td>
<td>Yes. Until damp or torn, or to end of shift. Change if contaminated</td>
<td>No</td>
</tr>
<tr>
<td>N95 respirators</td>
<td>Yes. Up to 1 week for same HCW (as TB protocol), unless respirator integrity or leak-proof seal is compromised</td>
<td>WHO Methods not validated: Hydrogen peroxide, ethylene oxide, UV Radiation lamp</td>
</tr>
<tr>
<td>Goggles</td>
<td>Yes but do not contaminate hands</td>
<td>Yes - wash with soap and water. Dry. Wipe over with alcohol wipes</td>
</tr>
<tr>
<td>Face shields</td>
<td>Yes, but do not contaminate hands</td>
<td>Yes - wash with soap and water. Dry. Wipe over with alcohol wipes</td>
</tr>
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</table>

Source: Covid 19 IPC Guidelines for SA and WHO Rational use of PPE for Covid-19 and considerations during severe shortages
References

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