health
Department:
Health
REPUBLIC OF SOUTH AFRICA

COVID-19 Rational use of personal protective equipment (PPE) Guide

PURPOSE AND SCOPE

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

RATIONAL FOR GUIDANCE DOCUMENT: CORONAVIRUS TRANSMISSION

The SARS-CoV-2 virus (coronavirus) is spread by respiratory droplets and contact with contaminated surfaces. The virus can be transmitted from infected people by cough and sneeze droplets, which land on surfaces and hands. A person can become infected if they inhale coughed or sneezed infectious droplets, or by touching contaminated surfaces and then touching their eyes, nose, or mouth without washing their hands.

MINIMUM PRECAUTIONARY MEASURES AGAINST INFECTION

1. Social distancing must be at least 1.5 metres away from where possible.
2. Wash hands with soap and water for 20 seconds, or use alcohol-based hand sanitiser after contact with any person or after contact with frequently touched surfaces e. g. phones, door handles etc.
3. Cough in the fold of the elbow or in a tissue which you discard and wash your hands.
4. Avoid touching your eyes, nose and mouth with unwashed hands.

REGULATIONS FOR HAZARDOUS BIOLOGICAL AGENTS, 2001

General requirements for the use of personal protective equipment (PPE) for protection of employees against hazardous biological agents (HBA), such as the SARS-CoV-2 virus, are covered in the South African Occupational Health and Safety Act, 1993, Regulations for Hazardous Biological Agents, 2001.

Regulations 11.(1) – 11.(6) and 17 of the HBA Regulations specify the provision, instruction and training, use, storage, cleaning and disposal of PPE.

Annexure C – Precautions for workplaces of the HBA Regulations specifies both Standard and Transmission-Based Precautions. The use of PPE (i.e. gloves, masks, eye protection, face shields and protective clothing is specified within the annexure.

Gloves

Wear gloves (clean, intact non-sterile gloves are adequate) when touching blood, body fluid, secretions, excretions and contaminated items. Put on clean intact gloves just before touching mucous membranes and non-intact skin. Change and dispose of gloves between tasks and procedures -

- on the same person;
- after contact with a material that may contain a high concentration of microorganisms.

Remove gloves promptly after use-

- before touching non-contaminated items and environmental surfaces;
- before attending to another person.

Wash hands immediately following removal of gloves to avoid the transfer of micro-organisms to other persons and environments.

Mask, eye protection, face shield

Wear a mask and eye protection or a face shield-

- to protect mucous membranes of the eyes, nose and mouth;
- during procedures and activities that are likely to generate splashes or sprays of blood or body fluid, secretions and excretions.

Protective clothing

Wear appropriate protective clothing to protect skin and to prevent soiling of clothing during procedures and activities that are likely to generate splashes or sprays of blood, body fluid, secretions and excretions. Select protective clothing that is appropriate for the activity and amount of fluid likely to be encountered. Remove soiled protective clothing as promptly as possible and consider it contaminated. Wash hands immediately after removal of protective clothing to avoid the transfer of micro-organisms to other people or environments.

All PPE must adhere to the below specifications.

(Source: Business for South Africa COVID 19)

1.Disposable Surgical Masks	Masks must be • made from four layers of fabric • splash proof • pleated horizontally with 3 pleats • soft, pliable material that is well-bonded • have four tie backs for fastening around head • fit a wide range of face shapes, comfortably and for ease of breathing • have a rubber/foam or silicone strip over nasal bridge • have a semi-flexible malleable form to adjust and fit over nasal bridge Packaging must state • latex and fibreglass free status • fluid resistance; minimum 80mmHg • odour free • bacterial/micro-organism filtration efficacy • mask classification and type • manufacturer details
2. Disposable Surgical Mask with visor/ separate face shield	Mask must • consist of above specifications for disposable surgical mask • have attached bonded, transparent visor • may have foam band attached • shield must extend from chest, at least 15cm past chin, extend around sides of face beyond lateral margin eyes • shield must ideally attach to hood or extend beyond forehead posteriorly

3. Disposable Protective Respirators	Masks may be registered as FFP2/FFP3/N95/KN95 (or alternative equivalent standard) Specifications must be: • Particulate filtration respirators used for protection against airborne diseases such as tuberculosis • A particulate filtration half mask must cover the chin, mouth and nose; it may/ may not have an exhalation valve • The particulate filtration respirator must not disintegrate during continuous or intermittent use in a 12 hour work day • Parts of the particulate filtration respirator that are more likely to come into contact with the wearer must be hypo-allergenic • Filter performance must meet standards relevant to the specific respirator classification • The respirator must have an adjustable/self-adjustable head harness which ensures ease of donning or removal • The particulate filtration respirator shall have a filtration efficiency of 95% for particles as small as 0.3 microns • The particulate filtration respirator shall have the equivalent of an external hydrophobic fabric layer for droplet protection • Labelling must state; Name or trademark, Filter efficiency/Classification, Approval number, Standard compliance & Size of the respirator
4. Disposable Apron	Apron must be: • Single use or easily sanitised • No-noise, smooth, plastic impermeable • Length from neck: not less than 110cm • Width: not less than 65cm • Thickness: 25 micron • Ties length: not less than 50cm • Ties width: not less than 5cm
5.Protective Surgical Gown	Gown must be: • Non-woven polypropylene (or equivalent material • Single use or easily sanitised • Sterile or non-sterile • Body ± 54 g/m^2 • Sleeves ± 66 g/m^2 • Long sleeves with cuffs • Reinforced in chest and forearm areas • Resistant to liquid penetration • Lint-free • Non- flammable • Bacterial barrier efficiency; to comply with SANS 53795 - Compliance certificate to be submitted ideally • Small/medium/large sizes • Ideally able to be pulled off forwards in doffing

6. Protective Eyewear	Surgical Safety Goggle/shield must be ● Clear Fog free ● Plano (no corrective lens ● Scratch resistant ● Non-reflective ● Wrap around (or closed sides) to give full protection from splashes ● Latex free ● Shatter-proof ● Reusable ● Non-sterile ● To be manufactured from clear distortion free plastic ● Anti-glare properties ● Available in different sizes where appropriate
7. Surgical Gloves	GLOVES: EXAMINATION, NON-STERILE ● Singles ● Powder free ● Ambidextrous ● Maximum thickness at centre of palm for all sizes shall be 0.5 mm for the smooth area and 0.53 mm for the textured area ● Non-sterile ● Latex free (e.g. Nitrile) ● Packed in box dispensers with maximum of 100 gloves per box ● Immediate packaging shall be marked "nitrile gloves" ● Glove should not be rigid and should be elastic enough when donned
	GLOVE, EXAMINATION, NON-STERILE, TYPE 2,(gloves made primarily from nitrile rubber latex, polychloroprene rubber latex, styrene-butadiene rubber solution, styrene-butadiene rubber emulsion or thermoplastic-elastomer solution) ● Single use ● Powder free ● Ambidextrous ● SANS 11193-1 ● 50 pairs of gloves - Box of 100
	GLOVE, EXAMINATION, STERILE, TYPE 2 (gloves made primarily from nitrile rubber latex, polychloroprene rubber latex, styrene-butadiene rubber solution, styrene-butadiene rubber emulsion or thermoplastic-elastomer solution) ● Single use ● Powder free ● Ambidextrous ● SANS 11193-1 ● Packaged as pairs in Sterile Packages ● 50 pairs of gloves - Box of 100
	GLOVES: SURGICAL, STERILE. ● Maximum thickness at approximate centre of palm for all sizes shall be 0.10 mm for the smooth area and 0.13 mm for the textured area ● Sterile ● Powder free

	• Latex free • The cuff may be beaded or reinforced for strength and easy donning • Paired gloves shall be packaged in sequential, two-layered packaging with a maximum of 50 pairs per box • Inner package shall be clearly marked with the size and the designation "left" or 'L" or "right" or 'R" on the package • Total Protein (Modified Lowry) to be not more than 28 micrograms per gram/glove
	GLOVE, SURGICAL, STERILE, TYPE 2 (gloves made primarily from nitrile rubber latex, polychloroprene rubber latex, styrene-butadiene rubber solution, styrenebutadiene rubber emulsion or thermoplastic-elastomer solution) • Single use • Powder free • One pair (1 left + 1 right) of gloves are folded & packed in a paper wallet • The paper wallet is packed in a plastic pouch which is sealed from all sides • Inner package shall be clearly marked with the size and the designation "left" or "L" or "right" or "R" on the package • Easy donning • To comply with the latest issue of SANS 68Packaged as pairs in Sterile Packages • 50 pairs of gloves - Box of 100
8. Overshoes	Protective overshoes must be: • Able to fully cover adult shoe sizes 3-12 • Be self-elasticated or drawstring around shoe to secure • Be anti-slip • Be anti-static • Be impervious to splash and soaking of liquids, non-porous • Disposable or able to be easily sanitised
9.Protective Hoods	If unattached to respirator, must be: • Open to face area • Anti-static • Able to fit large adult size • Be impervious to splash and soaking of liquids, non-porous • Non-flammable • Drawstring, self-elasticated or long enough to hang over shoulders • Disposable or able to be easily sanitised If attached to a respirator, must meet full regulatory requirements for full respirator PPE as per manufacturing standards.

APPROPRIATE USE OF PPE

PPE is specifically used to protect clinical and non-clinical health workers (including cleaners, ancillary staff and food service workers) from exposure to body fluids or droplet and/or airborne pathogens, chemicals or heat. The use of PPE is based on risk assessment and evidence of the route of transmission for a given microbe.

Minimum composition for PPE set to manage suspected or confirmed cases of COVID-19 disease

Protection	Suggested PPE
Respiratory protection	FFP2 / N95 or FFP3/N99 respirator
Eye protection	Goggles or face shield
Body protection	Long-sleeved water-resistant gown
Hand protection	Gloves

Respiratory protection
The respirator protects from the inhalation of droplets and particles. Given that the fitting of different types of respirator will vary for each user, the respirator will require a fitting test in order to find the best match of Respiratory Protective Equipment (RPE) to user. In the event of the need to assess a suspected case or in the management of a confirmed case, the guide suggests the use of filtering face piece (FFP) respirators class 2 or 3 (FFP2 or FFP3). An FFP3 respirator should always be used when performing aerosol-generating procedures.

Eye protection
Eye and face protection provide protection against contamination to the eyes from respiratory droplets, aerosols arising from Aerosol Generating Procedures (AGPs) and from splashing of secretions (including respiratory secretions), blood, body fluids or excretions.

Eye and face protection can be achieved using any one of the following:

- surgical mask with integrated visor
- full face shield or visor
- polycarbonate safety spectacles or equivalent

Regular corrective spectacles (prescription glasses) are not considered adequate eye protection.

Body protection
Disposable plastic aprons must be worn to protect staff uniform or clothes from contamination when providing direct patient care and during environmental and equipment decontamination. Long-sleeved disposable fluid repellent gowns must be worn when a disposable plastic apron provides inadequate cover of staff uniform or clothes for the procedure or task being performed, and when there is a risk of splashing of body fluids such as during AGPs in higher risk areas or operative procedures.

If non-fluid-resistant gowns are used, a disposable plastic apron should be worn. If extensive splashing is anticipated, then use of additional fluid repellent items may be appropriate.

Disposable aprons are subject to single-use and must be disposed of immediately after completion of a procedure or task and after each patient contact. Hand hygiene should be practised and extended to exposed forearms. Long-sleeved disposable fluid repellent gowns are for a single-use or single session use in certain circumstances but should be discarded at the end of a session or earlier if damaged or soiled.

Hand protection
Disposable gloves must be worn when providing direct patient care and when exposure to blood and or other body fluids is anticipated or likely, including during equipment and environmental decontamination. Disposable gloves are subject to single-use and must be disposed of immediately after completion of a procedure or task and after each patient contact, followed by hand hygiene.

Generic composition for PPE

Table 1 sets out the generic PPE principles to decide on the appropriate PPE to use. There is no evidence that foot or headgear is indicated for protection against droplet and contact precautions and should be avoided.

Table 1: Application of appropriate PPE use

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

Respiratory protection

Usually, in healthcare, only two types of respiratory protection offer adequate protection to the healthcare worker, i.e. face mask and particulate respirators (FFP2(N95) / FFP3(N99).

Face masks (surgical, medical) which are made of several layers of paper and protect against splashes and droplets. These are widely used in healthcare. Note the following guidelines:

- At any time if surgical masks are touched by unwashed hands, get wet, are soiled, or are removed from the face, they will become contaminated and will no longer provide effective protection. They should then be discarded.
- Masks that are not wet, were not touched by unwashed hands and were not removed from the face, can be worn for up to 8 hours.

- COVID-19 patients when inside a dedicated COVID-19 ward, where staff are wearing PPE, do not need to wear masks.
- COVID-19 patients when outside a dedicated COVID-19 ward must always wear a surgical mask. The mask can be used for up to 8 hours.

In relation to N95 respirators, two different types of "N95 respirators" -

- N95 respirator: is a respiratory protective device designed to achieve a very close facial fit and very efficient filtration of airborne particles. The 'N95' designation means that when subjected to careful testing, the respirator blocks at least 95 percent of very small (0.3 microns) test particles. If properly fitted, the filtration capabilities of N95 respirators exceed those of face masks. However, even a properly fitted N95 respirator does not eliminate the risk of illness or death.
- Surgical N95 respirators (often referred to as "N95s"): Surgical N95 respirators are both approved by NIOSH as an N95 respirator and cleared by the FDA as a surgical mask. These products are frequently referred to as medical respirators, healthcare respirators, or surgical N95s. Surgical N95 respirators are for use by healthcare workers requiring respiratory protection while performing surgery or other tasks that may expose them to high-pressure streams of bodily fluid or conducting work in a sterile field.

All respirators should:

- Be well fitted, covering both nose and mouth
- Not be allowed to dangle around the neck of the wearer after or between each use
- Not be touched once put one
- Be removed outside the patient room, cohort area or COVID-19 ward

Respirators can be single-use or single session use (disposable) and fluid resistant. Note that valved respirators are not fully fluid-resistant unless they are also 'shrouded'. If a valved, non-shrouded FFP3 respirator is used then it should be accompanied by full-face protection for use in aerosol-generating procedures or higher risk acute care areas.

Note the following guidelines:

- Seal check should be performed each time an FFP2(N95) / FFP3(N99) respirator is used (i.e. when it is first put on)
- Negative seal check:
  - Coned shape respirator: Cup hands over respirator without excessive pressure. Breathe in sharply. A light collapse of the respirator should be felt with no air leaking in around the face-to-face piece seal.
  - Duckbill and V-flex type respirator: Breath in sharply. The respirator should collapse inwards.
- Positive seal check:
  - Coned shape respirator: Cup hands over respirator. Blow out. A build-up of air should be felt with no air leaking out around the face-to-face piece seal edges of the device.
  - Duck-bill and V-flex type respirator: Breath out forcefully; the respirator should expand on the exhale.

The FFP2(N95) / FFP3(N99) respirators should ideally be single use only and be discarded once safely removed. However, as there is a global shortage of FFP2(N95) / FFP3(N99) respirators, reuse is strongly encouraged and is preferable as to not having a respirator at all. If HCWs are performing AGP (e.g. sample collection) on several COVID-19 patients sequentially, they may use the same FFP2(N95) /

FFP3(N99) respirator and eye protection for the session; they must, however, change apron and gloves between patients. As the outside surface of the FFP2(N95) / FFP3(N99) respirator will become heavily contaminated with the virus during aerosol-producing procedures, HCWs should take great care not to touch the outside surface and must perform careful hand hygiene after removing it.

For reuse:

Without touching the respirator, slowly lift the bottom strap from around your neck up and over your head.

Lift off the top strap. Do not touch the respirator.

Store respirator in a paper bag with your name on it. Do not crush the respirator when storing it.

Do NOT attempt to disinfect the FFP2(N95) / FFP3(N99) respirator as that destroys its integrity. Note that obviously damaged and visibly contaminated respirators cannot be reused.

Respirators should be compatible with other facial protection used (protective eyewear) so that this does not interfere with the seal of the respiratory protection.

Cloth masks

There is good evidence to show that face masks significantly reduce the spread of infectious respiratory droplets. Through lowered amounts of exhaled Coronavirus, wearing a mask should reduce the spread of infection from the wearer's respiratory droplets. Although a cloth face mask may not be as good as a surgical face mask in hospital settings, the cloth face mask is a suitable alternative to surgical face masks to reduce droplet spread. Hence, cloth face masks are being recommended in situations where social distancing is not possible and respiratory protection for protection against inhalable hazards is not required.

Face masks are recommended as an addition to hand-washing and social distancing – it does not replace these two more important strategies. The cloth face mask should never be promoted as a primary prevention strategy and be used in accordance with guidance from relevant local authorities.

FFP@ / N95 respirators and surgical medical masks are reserved for health workers and suspected infected COVID-19 cases as well as for workers in respirator zones to prevent exposure to inhalable particulate hazards in the workplace

Cloth masks can be used when an individual comes into contact with people and social distancing can't be maintained like when using bus transport, attending essential services, general public use, etc. Cloth masks should always be accompanied by clear user instructions on strict mask use (donning, doffing, disposal, etc.) and hygiene. They could also be used for suspected infected COVID-19 cases.

Cloth face masks should—

- fit snugly but comfortably against the side of the face;
- cover the nose and mouth completely;
- be secured with ties or ear loops;
- include multiple layers of fabric;
- allow for breathing without restriction; and
- be able to be laundered and machine dried without damage or change to the shape

Face masks should not be lowered when speaking, coughing or sneezing. Face masks should not be repeatedly touched – fiddling with the mask repeatedly is strongly discouraged as it is important to avoid touching the face with hands. The inner side of the mask should not be touched by hands.

It is important to wash hand first before putting on the face mask. Individuals should be careful not to touch their eyes, nose, and mouth when removing their cloth face and wash their hands after removing the face mask. Wash cloth face masks with warm (60–90 °C (140–194 °F)) common household detergent, and dry thoroughly. If possible, iron the mask after washing as it will help with disinfection. Each person will need to have at least two face masks so that one face mask is available when the other is being washed.

Cloth masks must be accompanied with instructions to the wearer of the mask. As the minimum the instructions must cover the following points:

- The importance to use the masks in addition to control measures such as hand washing, social distancing, etc.
- Washing off with soap and water or an alcohol-based hand rub before handling and putting on the mask
- To cover the nose and the mouth with the mask and to make sure that there are no obvious gaps between the mask and the wearer's face.
- Avoid touching the mask when using it. If the mask needs to be touched or adjusted, wash hands with soap and water or an alcohol-based hand rub after touching the mask. This also applied when the mask is removed.

A cloth mask of acceptable standard and design must consist of three layers:

- Outer layer (faces towards other people) must be made from thick weave cotton like denim, calico, upholstery fabric, etc. It must be water repellent, easy to clean and quick drying.
- Inner layer (which sits against the face) this can be made with the same material as the outer layer. Both polyester and nylon fabrics are preferred. Cotton can be used but this fabric can be highly water absorbent and become wet against skin.
- Middle/Filter layer (which sits between) this can be the same fabric as inner/outer layer or fabric that is used in lining of suit jackets or formal coats. The layer could also be gauze from the pharmacy (non-woven), dried out wet wipes (unscented), or brand-new polyester floor wipes (dry ones). It is recommended that the non-woven layer be replaced daily with a fresh one and not be reused.
    - Avoid T-shirt material.
    - Use fabrics that can be washed in hot water and ironed.

- Cleaning and disinfection instructions

Cloth masks for healthcare workers. Cloth masks are ***not recommended*** for health personnel because there is no filtration or protection against droplets or splashes. There is also the "wicking effect" (drawing moisture) which increases the risk of mucous membrane contamination.

Cotton masks for source isolation (community). The urgent need to preserve essential PPE, especially face masks for healthcare workers, the use of cloth masks may be considered for source isolation for community healthcare workers, security, and the general public particularly when travelling in enclosed spaces such as taxis.

Replacement and extending the use of PPE.

Respirators are for single use or single session use and then are to be discarded as healthcare (clinical) waste (hand hygiene must always be performed after disposal) or if re-usable cleaned according to manufacturer's instructions. It is important that the respirator maintains its fit, function and remains tolerable for the user.

The respirator should be discarded and replaced and NOT be subject to continued use in any of the following circumstances:

- is damaged
- is soiled (for example, with secretions, body fluids)
- is damp
- facial seal is compromised
- is uncomfortable
- is difficult to breathe through

The manufacturers' guidance should be followed in regard to the maximum duration of use.

Facial hair could prevent a good facial seal and therefore it is recommended that wearers of RPE should be clean shaven.

Usually PPE is discarded after a single patient or procedure, however, because of an acute shortage of PPE during the COVID-19 outbreak, the World Health Organisation and United States Centers for Disease Control and Prevention are considering extended use and/or reuse of certain PPE. For South Africa, it is recommended that the extended use of PPE is preferable than reprocessing, the latter being expensive, but this has not been validated and the integrity of the PPE cannot be guaranteed.

Table 2: Guidelines on extended use or re-use (reprocessing) of PPE

Type of PPE	Extended use	Reprocess
Gloves (non-sterile)	No	No
Face masks	Yes. Until damp or torn, or to end of shift. Change if contaminated	No
N95 respirators	Yes. Up to 1 week for same HCW (as TB protocol), unless respirator integrity or leak-proof seal is compromised	Pending (WHO)
Aprons	Yes, if not visibly contaminated (maintain 1m distance)	No
Gown Cotton gowns and aprons	Water resistant - yes if not visibly contaminated (1m)	Yes - launder cotton gowns Discard aprons if contaminated
Goggles	Yes but do not contaminate hands	Yes - wash with soap and water. Dry. Wipe over with alcohol wipes
Face shields	Yes, but do not contaminate hands	Yes - wash with soap and water. Dry. Wipe over with alcohol wipes

Donning and doffing of PPE

Please note that PPE should be put on and taken off in a specific order:

Donning

1. Long-sleeved fluid-resistant, disposable gown (and a plastic apron if required in line with standard precautions)
2. FFP2/3/N95 respirator (perform a fit check)/surgical mask
3. Eye protection (goggles or a face shield)
4. Gloves which should be pulled over the cuffs of the gown.

Removal

1. Once outside of the patient/risk room the worker should remove their gloves and gown being careful to avoid contaminating their clothing underneath
2. Perform hand hygiene
3. Remove the goggles/face shield
4. Perform hand hygiene
5. Remove the FFP2/3/N95 respirator or surgical mask being careful not to touch the front of the respirator/mask
6. Perform hand hygiene.

Additional recommendations

- Gloves should be changed if they become torn or heavily contaminated, and hand hygiene be performed
- Gowns should be changed if they become soiled, and hand hygiene be performed

- If re-useable PPE is used, such as goggles, these must be cleaned and disinfected prior to reuse. Staff must be trained in this process

The following poster summarises the correct way to put on and take off PPE including the disposal of all contaminated PPE in an infectious waste container.

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

SEQUENCE FOR PUTTING ON PERSONAL PROTECTIVE EQUIPMENT (DONNING)

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

Apron

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

Mask or N95 Respirator

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

Goggles or Visor

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

Gloves

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

SEQUENCE FOR TAKING OFF PERSONAL PROTECTIVE EQUIPMENT (DOFFING)

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

Gloves

- ***Wash hands***
- Securely grasp the outside of glove with the opposite gloved hand; peel off; discard as infectious waste

- Slide the fingers of the un-gloved hand under the remaining glove at the wrist; peel off; discard as infectious waste

Apron or Gown* (See Note)

- ***Wash hands***
- Unfasten or break apron/gown ties
- Pull the apron away from the neck and shoulders, touching the inside of the apron only and bring it forward and over the head

- Turn the apron inside out, fold or roll into a bundle and discard as infectious waste

Goggles or Visor* (See Note)

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

Mask or N95 Respirator

- Untie or break bottom ties, followed by top ties or elastic.

- Remove by handling the ties only and discard as infectious waste.
- ***Wash hands***

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

RECOMMENDED PPE FOR HCWs DURING DIRECT CONTACT WITH OR CARING FOR COVID-19 SUSPECTED OR CONFIRMED CASES

The Visuals below provide summarised recommendations about when and which PPE is required in various healthcare settings.

- PPE use is based on the outcome of the risk assessment of each situation
- Complete PPE sets are ONLY required when an individual is in direct contact with or caring for a confirmed or suspected COVID-19 patient.
- It is the responsibility of supervisors to ensure that staff are wearing the appropriate PPE for a particular situation, to keep everyone safe.
- Do not use PPE (e.g. FFP2(N95) / FFP3(N99) respirators) when not needed to. PPE stocks will then be preserved to ensure the safety of everyone especially frontline employees.

Employees required to wear a respirator (e.g. FFP2(N95) / FFP3(N99)) should be at least qualitatively fit tested prior to initial use to confirm if the selected respirator size or style can fit a user. A seal check should be performed whenever the user puts on the respirator to confirm if the respirator adequately seals against the face of the wearer.

(Due to RPE shortages, CDC recommend qualitative test since quantitative requires a respirator to be probed during the testing resulting in discarding respirators after the test.)

REFERENCES

National Department of Health. COVID-19 Infection Prevention and Control Guidelines for South Africa, March 2020

National Department of Health. National Practical Manual for the Implementation of the National IPC Strategic Framework, March 2020

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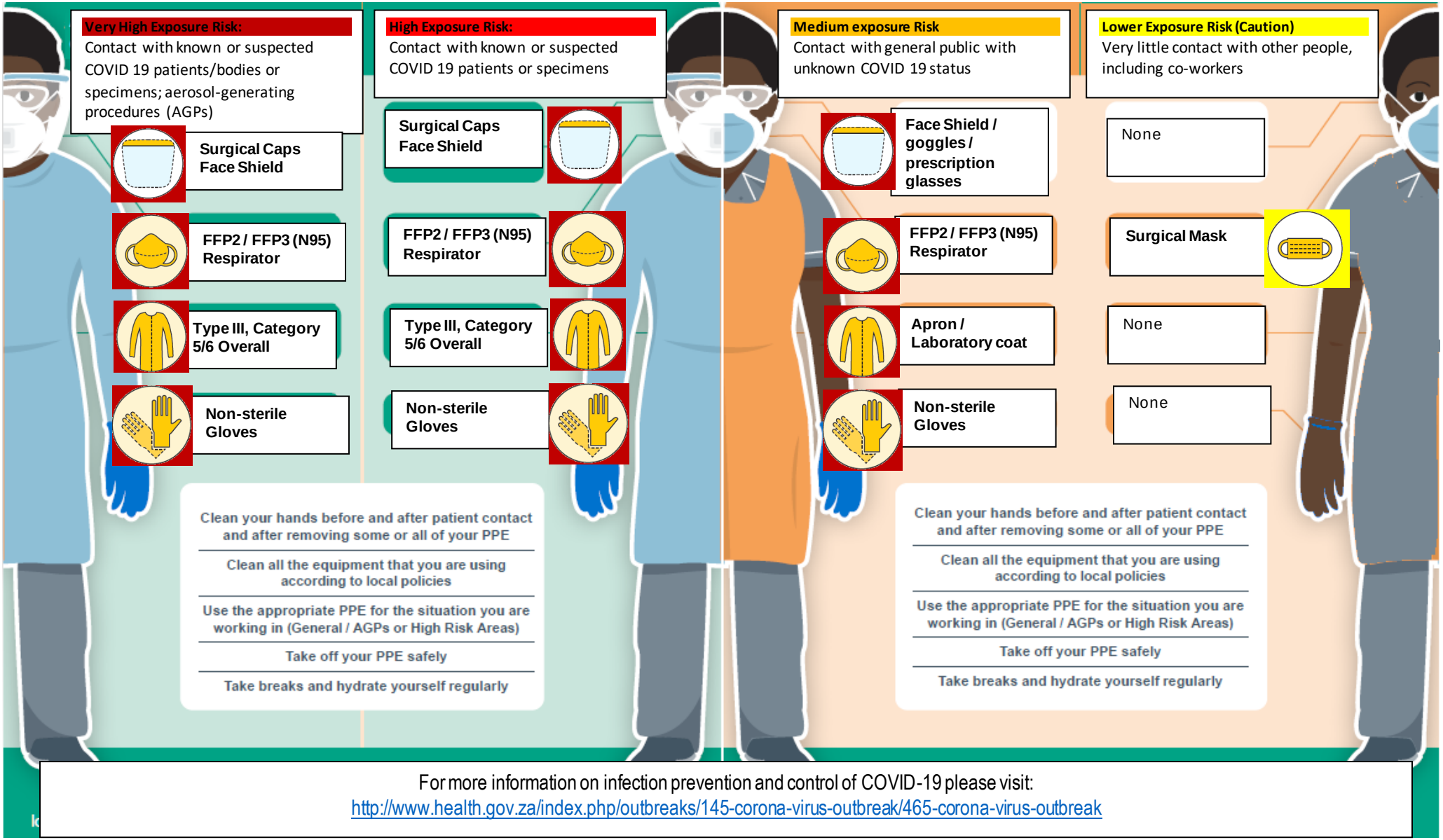
South Africa Occupational Health and Safety Act, Act 85 of 1993 – Regulations for Hazardous Biological Agents, 2001.

WHO Rational use of personal protective equipment (PPE) for coronavirus disease (COVID-19), March 2020.

ECDC Technical Report- Personal protective equipment (PPE) needs in healthcare settings for the care of patients with suspected or confirmed novel coronavirus (2019-nCoV), February 2020.

UK Public Health: COVID-19 personal protective equipment (PPE), April 2020

A Visual guide to HCW PPE



For more information on infection prevention and control of COVID-19 please visit:
http://www.health.gov.za/index.php/outbreaks/145-corona-virus-outbreak/465-corona-virus-outbreak

Very High Exposure Risk

Healthcare workers (e.g. doctors, nurses, dentists, paramedics, emergency medical technicians) performing aerosol-generating procedures (e.g. intubation, cough induction procedures, bronchoscopies, some dental procedures and exams, or invasive specimen collection) on known or suspected COVID-19 patients.

Healthcare or laboratory personnel collecting or handling specimens from known or suspected COVID-19 patients (e.g. manipulating cultures from known or suspected COVID-19 patients).

Morgue workers performing autopsies, which generally involve aerosol-generating procedures, on the bodies of people who are known to have, or suspected of having, COVID-19 at the time of their death.

High Exposure Risk

Jobs with high potential for exposure to known or suspected sources of COVID-19. Workers in this category include:

Healthcare delivery and support staff (e.g. doctors, nurses, and other hospital staff who must enter patients' rooms) exposed to known or suspected COVID-19 patients.

(Note: when such workers perform aerosol-generating procedures, their exposure risk level becomes very high.)

Medical transport workers (e.g. ambulance personnel and porters) moving known or suspected COVID-19 patients in enclosed vehicles.

Mortuary workers involved in preparing (e.g. for burial or cremation) the bodies of people who are known to have or suspected of having COVID-19 at the time of their death.

Medium Exposure Risk

Jobs that require frequent and/or close contact with (i.e. within 2 meters of) people who may be infected with SARS-CoV-2, but who are not known or suspected COVID-19 patients. In areas without ongoing community transmission, workers in this risk group may have frequent contact with travellers who may return from international locations with widespread COVID-19 transmission.

In areas where there is ongoing community transmission, workers in this category may have contact with the general public (e. g. in schools, high-population-density work environments, such as labour centres, consulting rooms, point of entry personnel and some high-volume retail settings).

Low Risk (Caution)

Lower exposure risk (caution) jobs are those that do not require contact with people known to be or suspected of being infected with SARS-CoV-2, nor frequent close contact with (i.e. within 2 meters of) the general public. Workers in this category have minimal occupational contact with the public and other co-workers.

Facial hair and Respirators

*Ensure that hair does not cross the respirator sealing surface

For any style, hair should not cross or interfere with the respirator sealing surface. If the respirator has an exhalation valve, hair within the sealed mask area should not impinge upon or contact the valve.

Employees required to wear a respirator (e.g N95/FFP2/FFP3) should be fit tested prior to initial use to confirm if the selected respirator size or style can fit a user. A seal check should be performed whenever the user puts on the respirator to confirm if the respirator adequately seals against the face of the wearer.

*Adapted from The US Centers for Disease Control and Prevention, The National Personal Protective Technology Laboratory (NPPTL), NIOSH. Facial Hairstyles and Filtering Facepiece Respirators. 2017. Available online at **https://www.cdc.gov/niosh/npptl/RespiratorInfographics.html**. Accessed 26/02/2020.