



**PROTECTING THE FRONTLINE IN THE COVID-19 EPIDEMIC:  
MANAGING EXPOSED HEALTHCARE WORKERS AND THEIR  
WORKING ENVIRONMENTS**

**A TRAINING MANUAL FOR OCCUPATIONAL HEALTH AND  
SAFETY PROFESSIONALS IN THE PUBLIC SECTOR**



**Discipline of Occupational and Environmental Health  
School of Nursing and Public Health,  
University of KwaZulu-Natal**

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PROFESSIONALS IN THE PUBLIC SECTOR**

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## Background

The novel Coronavirus (SARS – COV-2) epidemic (COVID-19) presents with unique challenges for the healthcare system in South Africa, beyond that experienced in the advanced economies of the world. A key factor in responding to the epidemic is the preparedness of our healthcare system, particularly the public health institutions. Healthcare workers (HCWs) are at high risk, not just for developing the more serious forms of the disease, but also for becoming agents for transmission.

The impacts on HCWs have been well documented since the start of the epidemic: among a series of 138 cases treated in a Wuhan hospital, 29% were HCWs (Koh, 2020), and by 11 February 2020, 1716 HCWs had been infected in China, with six deaths (Koh, 2020). In the US state of Washington, 25 HCWs were placed under observation after presenting with symptoms. Our past experiences need to guide our current responses: in the SARS outbreak of 2002, one-fifth of all cases were HCWs (Chan-Yeung, 2004)

As HCWs represent the very frontline of our responses to the epidemic, ensuring their health will be critical to ensuring ongoing service delivery. South Africa already experiences a shortage of health personnel, and understaffing at our institutions are likely to compromise our response – thus ensuring HCWs stay on the frontline for as long as possible, and stay healthy will improving our chances of minimizing the expected toll from the epidemic.

A critical concern as well, is that because of their close contact with infected patients, HCWs become agents of disease transmission – either through unprotected work clothing or personal items such as cellphones, watches, glasses, water bottles, lunchboxes etc.

For these reasons, we believe that it is imperative that a clearly defined strategy targeting the frontline HCWs is immediately implemented across all institutions, not just isolation centres.

This training manual is aimed at two categories of professionals in occupational health. These are the Occupational Health and Safety (OHS) Officers that are appointed at each public health institution, and secondly, the staff members of each institution's Employee Health Service, with particular reference to the Occupational Health Nurses (OHN) and the Occupational Medical Practitioners (OMP).

Our ability to protect the **health** of the healthcare worker is critical in the epidemic, as the graphic below shows. Surges in the epidemic increases the demand on health services, increases the impact on HCWs, and consequently, negatively impacts on the quality of care. In the case of this epidemic, a compromised quality of care has a direct effect on human lives. Thus, protecting HCWs is central to defeating the epidemic.



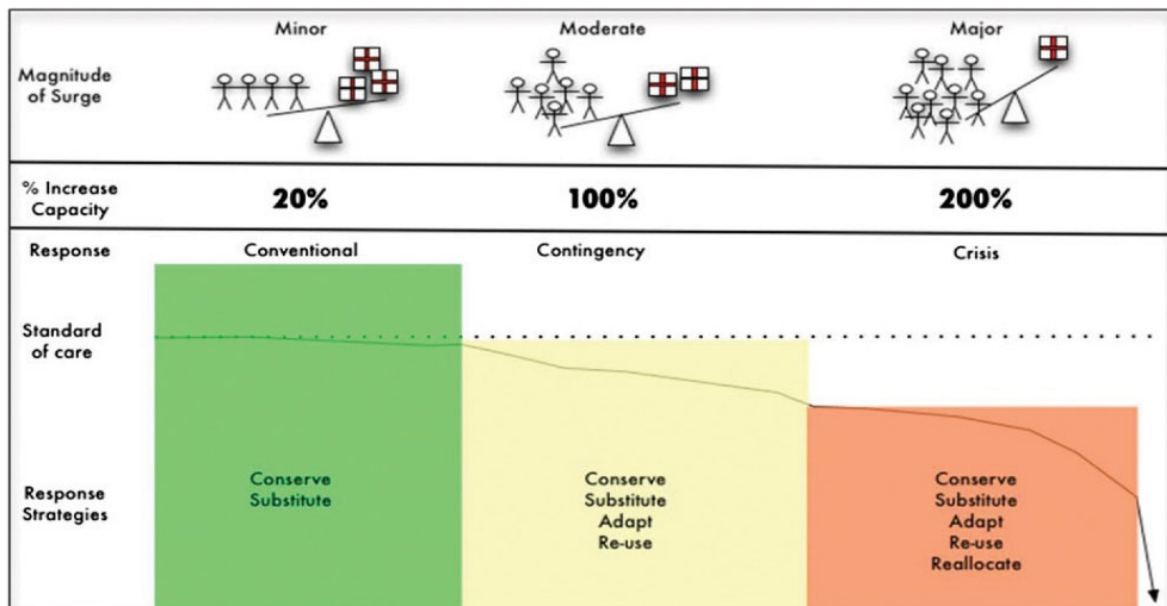


Image from *Care of the Critically Ill and Injured During Pandemics and Disasters: CHEST Consensus Statement* [https://journal.chestnet.org/article/S0012-3692\(15\)51985-5/pdf](https://journal.chestnet.org/article/S0012-3692(15)51985-5/pdf)

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**SECTION 1:**  
**THE OCCUPATIONAL HEALTH AND SAFETY**  
**OFFICER/MANAGER AT THE INSTITUTIONAL LEVEL IN THE**  
**PUBLIC HEALTH SERVICE**

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## Objectives of this Training

1. Understand the role of the OHS Officer/Manager in the epidemic
2. Develop skills and knowledge to become a trainer of health and safety representatives and all healthcare workers
3. Be able to conduct an environmental risk assessment with respect to the Covid-19 epidemic
4. Be able to implement hazard control with respect to the Covid-19 epidemic
5. Be able to respond to queries from the general workforce and management about exposure, hazard and risk with respect to the epidemic
6. Be able to monitor and evaluate hazard control measures and address weaknesses and gaps as soon as these arise

## Participants Expectations of the Training

List what are your expectations of this training programme?

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2. \_\_\_\_\_  
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3. \_\_\_\_\_  
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4. \_\_\_\_\_  
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5. \_\_\_\_\_  
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6. \_\_\_\_\_  
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What, in your opinion, are the roles and responsibilities of the OH Officer/Manager in the context of the epidemic?

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2. \_\_\_\_\_  
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3. \_\_\_\_\_  
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4. \_\_\_\_\_  
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5. \_\_\_\_\_  
\_\_\_\_\_
6. \_\_\_\_\_  
\_\_\_\_\_

### Functions of the OH Officer/Manager

1. Educate and train health and safety representatives and general healthcare workers (HCW) at my institution;
2. Perform a comprehensive environmental risk assessment at the institution, based on potential exposure
3. Implement appropriate hazard control to reduce the risk
4. Monitor hazard controls to identify weaknesses and gaps
5. Monitor the use of protective equipment resources and its availability
6. Liaise with Supply Chain Management to ensure continuous supply



### Defining Hazard, Risk and Exposure



**Hazard:** the inherent property of a source, item, substance or process to cause harm (illness, injury, mental impairment, physical or social wellbeing, damage to property)

**Exposure:** describes the amount of, and the frequency with which, the hazard reaches a person, group of people or the environment, through physical contact, inhalation or ingestion

**Risk:** is the possibility of a harmful event arising from exposure to a hazard, under specific conditions.

$$\text{Risk} = \text{Hazard} \times \text{Exposure}$$

Write down an example of a workplace hazard (other than a biological hazard). Describe how this can translate into a risk

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Now write down how you think that the Coronavirus presents as a risk to HCWs. Consider the concepts of Hazard, Exposure and Risk.

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### The “Frontline” HCWs

In the context of Covid-19, we are focusing on the “frontline” and high exposure healthcare workers.

Tier 1 – the highest risk (frontline) category:

- HCWs at the “gateway clinics”, outpatient departments/casualty of all institutions
- HCWs at the isolation centres as designated by the Department of Health
- HCWs responsibility for tracing and testing within the community at household level
- HCWs in the Emergency Medical Rescue Services (EMRS)
- Security services at gates responsible for engaging with patients and visitors

Tier 2, those with high risk, include the following:

- HCWs performing aerosol-generating procedures (e.g., intubation, cough induction procedures, bronchoscopies, some dental procedures and exams, or invasive specimen collection) on known or suspected infected patients.
- HCW or laboratory personnel collecting or handling specimens from known or suspected infected patients.
- Laundry workers, mortuary workers and waste management workers

In your opinion, what should be the content of the training programme for the frontline workers, health and safety representatives and general HCWs?

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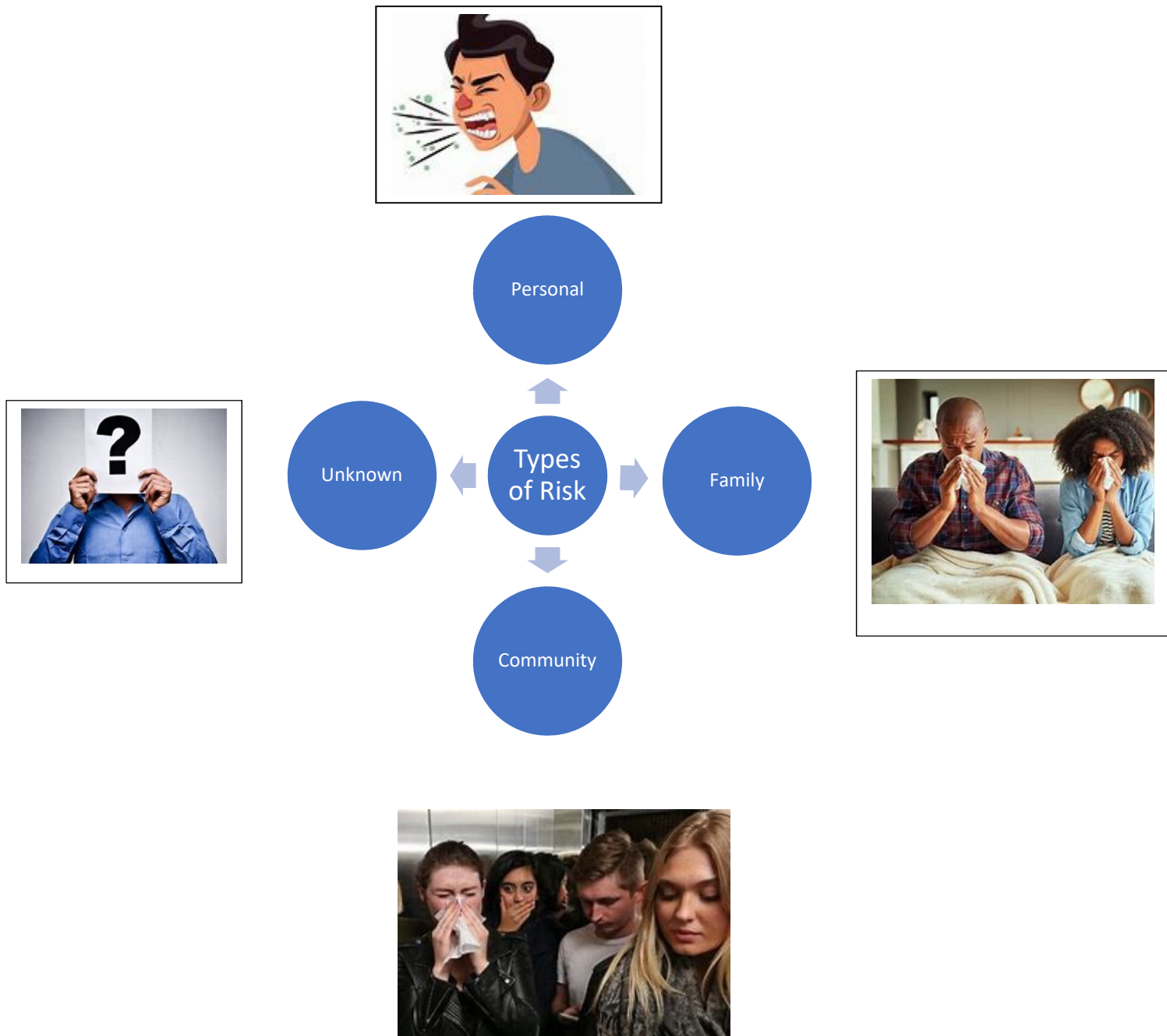
### Frontline Education and Training

Education and Training of the frontline Tier 1 HCW is of paramount importance. The content of training will vary from that of the general training for the other tiers of HCWs. In addition to the basic training about the virus and the epidemic, its routes of spread, and the requisite standards of precaution, the Tier 1 HCW will need to:

- Recognize personal factors that place the HCW at risk for serious adverse response to infection
- Understanding and managing the appropriate environmental and personal protective measures on the frontline
- understand the management of patient triage
- allocation of at risk patient to appropriate consulting rooms
- attending to a at risk patient in the clinical setting
- clinical decision-making with respect to a at risk patient
- management of the consulting room environment post assessment of a at risk patient
- Engaging with the EHS Task Team
- Understanding sick leave, self-isolation and quarantine
- Psychosocial aspects of being on the frontline

## Assessing the Risk in Healthcare Working Environments

### Types of Risks in the Community:



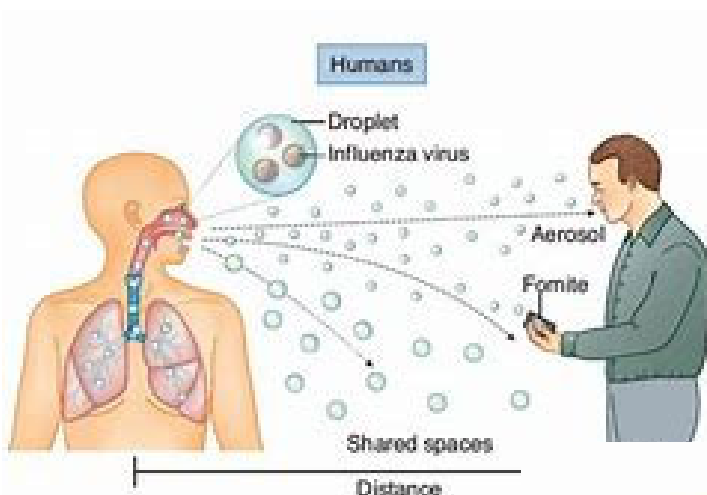


## Disease Transmission

### Methods of Disease Transmission

- Direct Contact
- Droplet Spread
- Airborne Spread

**Direct Contact** is through touching an ill person or a contaminated surface.



### Droplet Transmission:

- Inhaling droplets (up to 0.25mm in diameter).
- Persons within a 2-metre radius are at risk.

### Airborne Transmission:

- Inhaling droplet nuclei (10-20 micrometer in diameter).
- People breathing the same air in a confined space.
- Possible route of transmission for SARS-CoV2 especially in aerosolizing situations (scopes, nebulization, sputum induction etc)



## The Objectives of a Risk Assessment

- The aim of the risk assessment process is to evaluate hazards, then remove that hazard or minimize the level of its risk by adding control measures, as necessary. By doing so, you have created a safer and healthier workplace.

The goal is to try to answer the following questions:

- What can happen and under what circumstances?
- What are the possible consequences?
- How likely are the possible consequences to occur?
- Is the risk controlled effectively, or is further action required?

What approaches do you undertake to assess risk?

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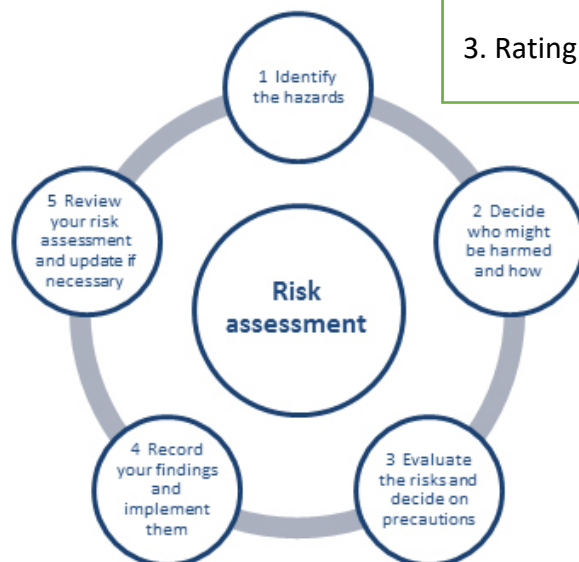
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## Key Steps in Risk Assessment



### Key Steps

1. Identify the hazard
2. Determine the Risk
3. Rating the Risk

## ✓ **Step 1: Identify the Hazard**

Identify the hazard in the Coronavirus Epidemic

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### Key Points of Hazard Presentation

- At Points of Entry to the facility
- In transit through the facility
- Waiting rooms
- Consulting rooms
- Medical Imaging
- Isolation Wards and Rooms
- Special areas:
  - Hospital Laundry
  - Emergency Services
  - Mortuary

## At Point of Entry



- Patients presenting at the entry to the facility
- Presenting with symptoms
- Opportunities for screening and triaging

Symptomatic Patient wearing a face mask.



- Identify areas where groups of people are in close contact with each other i.e. within 2 meters of each other.

Security access control.

- Identify surfaces where droplets can settle and people can touch as doorknobs, stair rails, door, security access control facility, etc.



Many hands on escalator hand rails.

- Evaluate hand hygiene protocol that may have already been instituted at the facility to curb spread from un-sanitized hands.
- Make note of appropriate signage promoting health education about COVID-19 e.g. Information on what COVID-19 is and it's health implications, hand washing techniques, healthcare facilities policy on how patients with or are suspected of having COVID-19 are managed at the facility, cough etiquette, social distancing, etc.

**In transit from the entry point to the next point of contact within the hospital:**



- Identify areas where patients gather in close contact, e.g. shop/tearoom, designated smoking areas.

Busy social area with close contact of people outside a hospital.

- Identify areas where droplets can be settled and other people can have contact with e.g. patient cards, patient toilets, door handles, hand-rails, intercom buttons, elevators, etc.



Admission desk



HCW opening a door in the ward.



## In the Waiting room

- Observe the ventilation of the room- identify areas where poor ventilation is a concern,
- Determine if patients are at the very minimum 1 metre apart; whether they are seated, standing or on a stretcher.



Busy waiting room with close contact of patients.



Separate waiting area for Persons Under Investigation.

### Suggestion Box

*Although not always feasible.....*

Can your facility have a completely separate waiting room/consulting room for PUIs?

Can your institution have designated toilet facilities for PUIs?

Can your facility have a donning and doffing room for the HCW to prepare to consult a PUI?

- Identify if patients who were provided with surgical masks during the triage process, and that they are complying.
- Ensure that suspected cases of COVID-19 are not following the same queue as other out-patients, to prevent cross-infection, if immediate separation is not possible.
- Determine whether the area has a demarcated zone for PUIs and this meets the required standard of 2m spacing
- Ensure that toilet facilities are available and hand washing facilities are readily available.
- Identify overcrowded waiting areas.
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**Consultation room:**



Doctor's consulting rooms.

- Evaluate the airflow in the room. The direction of airflow should be away from the consulting healthcare worker, not towards the healthcare worker.
- Identify the distance of patient to the attending doctor (must be more than 1 meter)
- Identify surfaces where respiratory droplets can settle.
- Can items in the consulting room be minimized to reduce cleaning processes

- Identify medical equipment that may be contaminated during the consultation process e.g. stethoscope, otoscope, bed linen, etc.



Medical equipment used in the consulting rooms.

- Identify appropriate medical waste disposal facilities e.g. red plastic lined bins, clear plastic lined bins, sharps containers, etc.



## Medical Imaging (Xray Department)



Radiographic Department waiting room.

- As this service centre may be the next point of referral for many of the suspected cases, the same risk assessment strategy should be implemented, as outlined above, and modified accordingly to the operations of the x-ray department.



- Movement of PUIs within the hospital are to be kept to a minimum as a rule. Chest x-rays should be done via mobile x-ray bedside units (BSUs)

## Isolation Ward/Facility

- Healthcare workers managing confirmed cases should wear personal protective equipment (PPE) as mentioned else-where.
- Identify surfaces where droplets can accumulate.
- Identify the correct waste management facilities are provided for medical and non-medical waste.
- Evaluate COVID-19 signage and information is displayed e.g. cough etiquette, social distancing, information on COVID-19, etc.
- Hand washing facilities must be available.
- Bathroom facilities must be available.

### Suggestion Box

*Although not always feasible.....*

Can your facility have an isolation ward with an antechamber and negative pressure? Ventilation.

Can your facility have "Airborne Infection Isolation Room (AIIR)?

## Hospital Laundry

- Assess the process that the HCW adopts in removing possibly coronavirus contaminated linen from removal of bed or other places, and disposes of.
- Assess the process adopted by the HCW (usually a general worker/cleaner/porter) in collecting, transporting and dispatch at the facility laundry, and levels of protection used
- Assess the process followed by the laundry worker in the collection and transfer of suspect linen into the washing machine, and potential for risky exposure
- Determine presence of hand washing facilities.
- Determine whether the environment allows for social distancing.

## Mortuary

What do you think are the risky activities within a mortuary?

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## ✓ **Step 2: Determine the Risk**

Having identified the hazard, noting the points at which it presents at your facility, you need to determine the extent to which the hazard presents with a likelihood to cause harm.

**Remember:**

$$\text{Risk (Step 2)} = \text{Hazard (Step 1)} \times ??$$

What factors are going to increase risk in the environments in which the hazard presents?

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### Factors influencing Exposure

- Patient and HCW number in room with regard to room size
- Potential for physical contact between patient and HCW
- Potential for reduced social space (at least 1m, preferably 2m) engagement between patient and HCW
- Presence of physical separation – barriers and partitions in all frontline areas
- Potential for common contact surfaces and personal items (desks, pens, forms etc.)
- Ventilation, particularly in isolation rooms, wards and facilities

## ✓ **Step 3: Rating the Risk**

You now have:

The Hazard

The Exposure

But is the risk Very High, High, Medium or Low

How will you decide this?

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## Determine the likelihood of Risk

	Rating	Description
5	Frequent	Happening now or will occur at least monthly
4	Likely	May occur every 6 – 12 months
3	Possible	May occur every 1 – 5 years
2	Unlikely	May occur every 5 – 10 years
1	Rare	May occur every 10 or more years

## Determine the Severity/Impact

Level 1: Minimal impact or consequence

Level 2: Slight impact

Level 3: Moderate impact

Level 4: Substantial impact

Level 5 Extreme Impact

Risk Rating						
Standard Risk Matrix for any Business						
Impact	5	Medium / High	Medium / High	High	High	High
	4	Low / Medium	Medium / High	Medium / High	High	High
	3	Low / Medium	Low / Medium	Medium / High	Medium / High	High
	2	Low	Low	Low / Medium	Low / Medium	Medium / High
	1	Low	Low	Low	Low / Medium	Low / Medium
		1	2	3	4	5
Likelihood						

Risk Rating: Likelihood * Severity	Minimal 1-2	Low 3-9	Medium 10-15	High 16-20	Extreme 25
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### Risk Assessment tool and evaluation example

Area	Activity	Hazard	Who is affected	Route	Health effects	Baseline controls	Action Plan			Risk Rating				
							Residual control	By who	Date	Min	Low	Med	High	Extreme
Entry	Checking the bags	SARS cov2 droplets	Security officer	Close contact with bags surface	Covid19 symptoms	Alcohol hand rub	Training hand rub	IPC personnel	24/03/20			X		
	Handling files to the patients	SARS cov2 droplets	clerk	Close contact Surface contact (patient files)	Covid 19	Alcohol hand rub	Use of Gloves, masks, Training on correct use	IPC personnel	26/03/20				x	

Work through an example of an area/activity based on your experience

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## Controlling the Hazard

Let's start with a refresher.....Hazard, Exposure and Risk

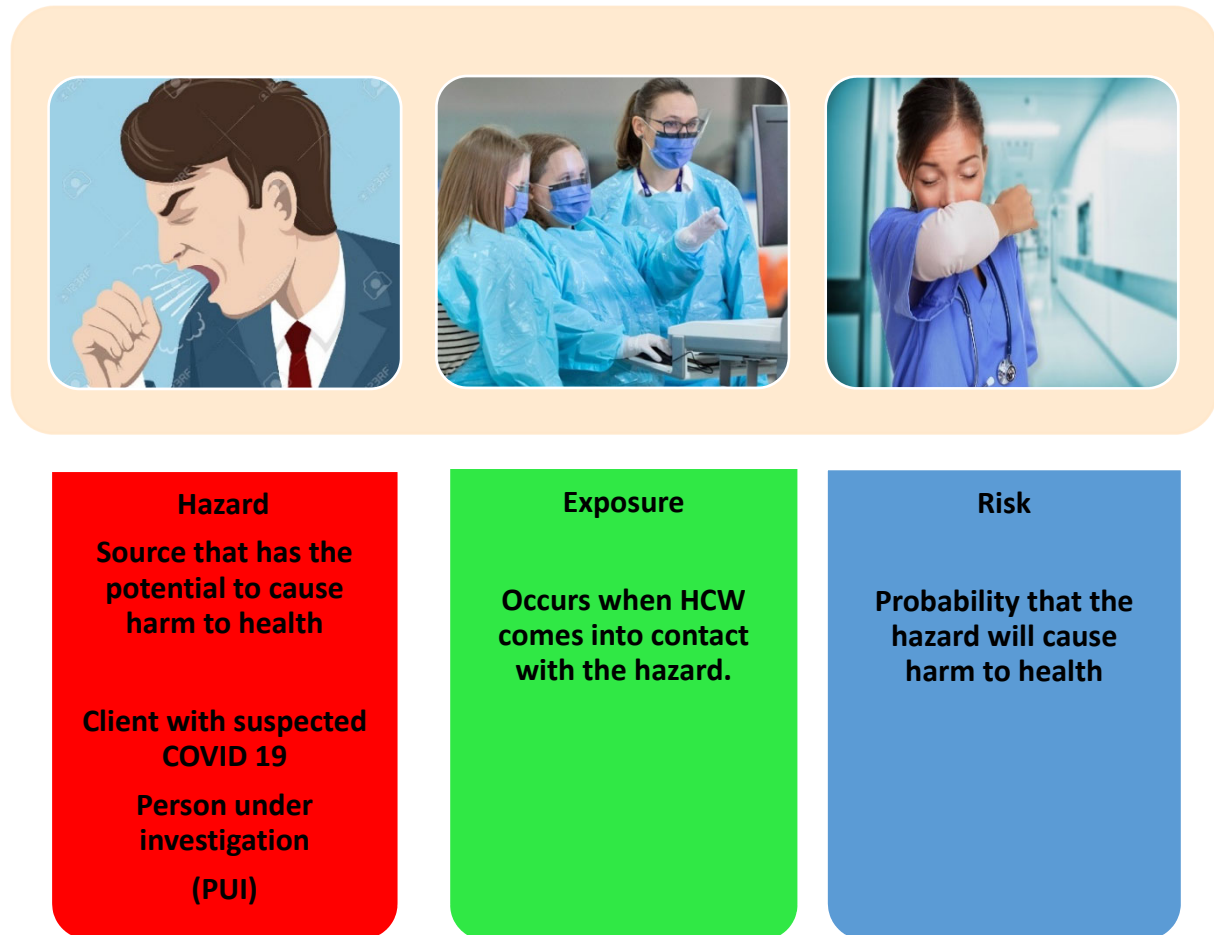


Figure 1: Understand Hazard, Exposure, Risk

## Hazard control of frontline areas during the COVID19 epidemic:

The National Institute of Occupational Safety and Health (NIOSH), endorses a hierarchy of controls that address hazards in the workplace.

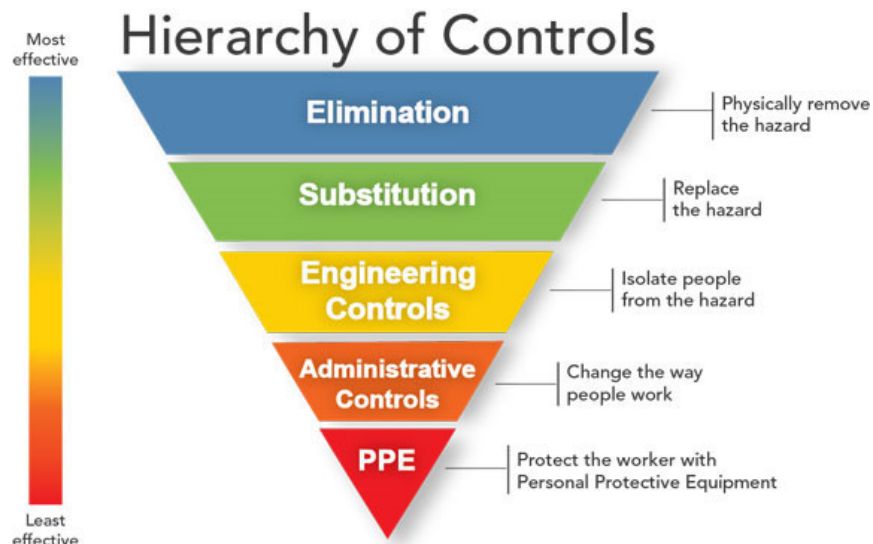


Image from NIOSH <https://www.cdc.gov/niosh/topics/hierarchy/default.html>

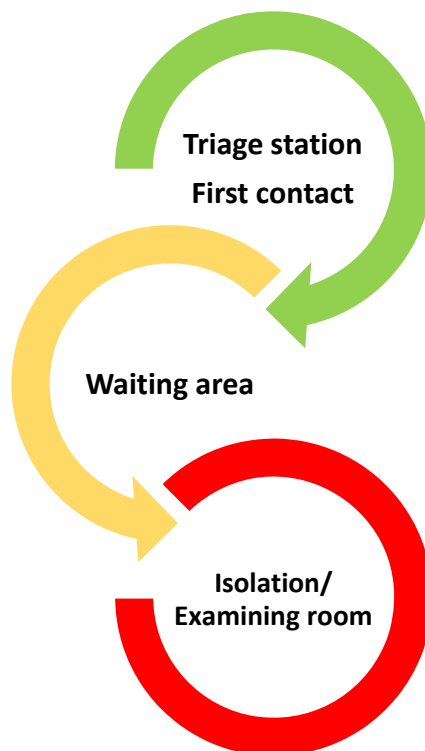


Figure 2: PUI: Hazard control pathway





*Figure 3: Hazard control of each designated area*

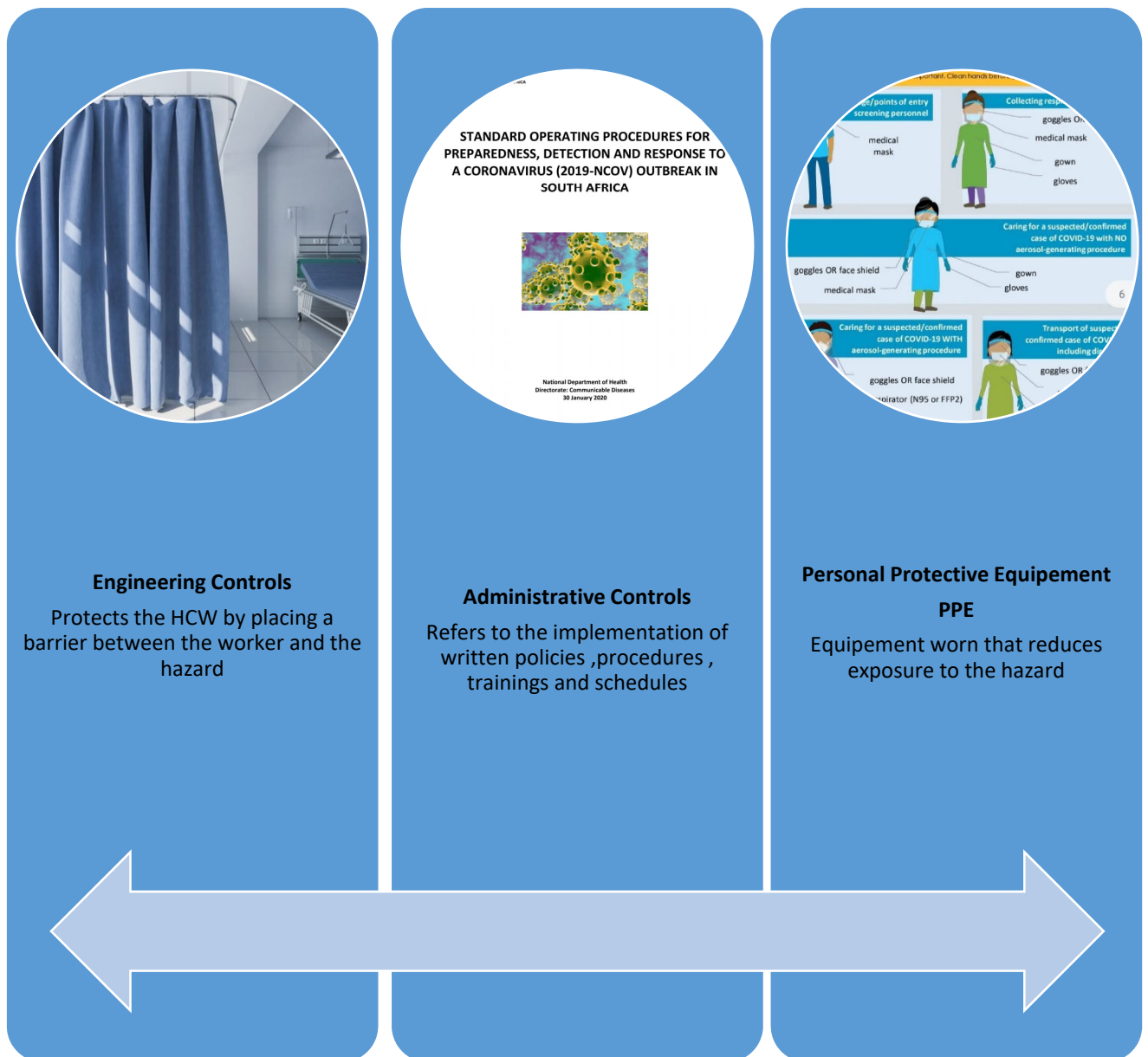


Figure 4 What do hazard controls look like?

## Engineering Controls

### 1) Physical Barriers

- a) building structure: layout of buildings should be assessed for existing structural walls/rooms. Complete isolation area is highly recommended
- b) If a lack of space curtains or partitions can be placed to separate areas within a room.
- c) Procurement of gazebos for smaller health care settings should be considered i.e. PHCs and CHCs.



### 2) Installation of objects to promote hand hygiene

- a) All public spaces including waiting areas should have hand sanitizer dispensers installed (Alcohol-based rub containing at least 60% alcohol)
- b) Taps and basins for handwashing must be in good working order and have enough soap available.

### 3) Ventilation

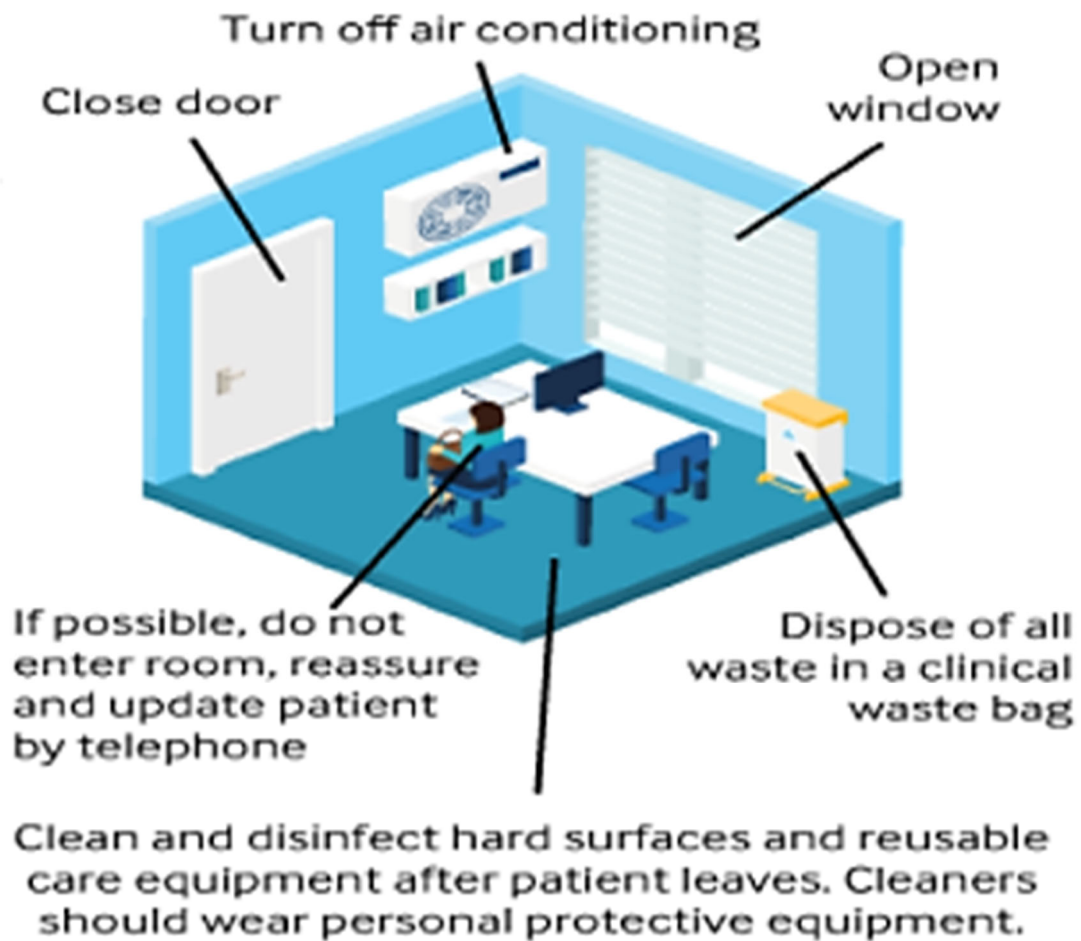
- a) Ventilation is the provision of outdoor air into a building or room and the distribution of that air. The use of fans is not recommended unless there is a designed positive pressure system. Fans promote the recirculation of air with infectious particles within a closed environment.
- b) Air conditioning units in rooms exposed to COVID 19 require air infection control. These units should have high efficiency particulate air (HEPA) filters. Unless the system performs air, infection control the air-conditioning system has to be off.
- c) Natural Ventilation: Rooms with open windows are preferred.

## Isolation room

Located away from waiting areas and other consultation rooms

Without carpeted floors or soft furnishing

Close to separate toilet facility



### Suggestion Box

*Although not always feasible.....*

An airborne infection isolation room (AIIR) is the gold standard for Aerosol-Generating Procedures (AGPs). AIIR rooms have a negative pressure relative to the surrounding pressure. They have more than 12 changes of air and a controlled direction of airflow

## Administrative Controls

### 1) Screening and Triage:

- a) Limit the number of main entrances
- b) All clients screened according the NICD screening tool.
- c) Temperature check to be done for all clients.
- d) Clients meeting NICD criteria be given a medical mask
- e) Avoid overcrowding in all areas
- f) No visitors to be allowed in with PUI



### 2) Client spacing:

- a) Provide adequate space to allow a distance of at least 1 m between clients and HCWs this can be done through organisation of queues and chairs.

### 3) Education and Training:

- a) All HCWs must be informed with relevant information about COVID 19.
- b) Information regarding PPE and infection prevention can be placed within waiting areas as easy to read posters
- c) Information regarding the correct procedure of testing PUI's can be placed on easy to read posters in these rooms and chairs.

### 4) Standard operating procedures (SOPs):

The following SOP should be made by the HSO in coordination with the occupational health and safety task team.

Standard precautions:

- a) Recording system of recording in which HCWs have been exposed to high risk areas
- b) If additional services required e.g. X-Ray Radiography to bring X-Ray machine to the isolation area. Avoid PUI contamination at multiple points.

Standard Precautions are used for client care on a regular basis to promote infection prevention:

- Hand Hygiene
- Respiratory Hygiene
- Cough Etiquette
- Environmental Cleaning
- Client Placement



WHO: <https://europeantissue.com/wp-content/uploads/140728-WHO-Poster-hands-washing-756x1024-756x1024.jpg>

### **5) Environmental Cleaning:**

Environmental cleaning includes regular disinfection of all possible contaminated surfaces i.e. floors, chairs, tables, etc. The HSO should work in conjunction with cleaning staff and IPC teams at healthcare institutions to ensure that tasks are carried out timeously.

- a) Contact and Droplet spread: Disinfection done at least twice daily in 24 hours especially high touch surfaces and floors.
- b) Disinfection of all clinical equipment e.g. BP cuffs and stethoscopes should be done after each patient.
- c) Isolation consulting room cleaned after every client. Linen savers can be used on beds and discarded after each client. Given the infectious particles of COVID 19 more frequent cleaning of high-exposure areas can be done if resources allow.

WHO recommends the use of sodium hypochlorite at 0.5% (equivalent to 5000 ppm) for disinfecting surfaces such as floors and furniture or formulation of 70 % alcohol.

### **6) Waste Management and Disposal:**

- a) Medical waste should be disposed of in a designated area.
- b) Biohazard bags should be labelled clearly, sealed and placed into a second bag before discarding. All individuals handling waste must have appropriate PPE. i.e. boots, apron, long-sleeved gown, thick gloves, medical mask, and goggles or a face shield)
- c) While biohazard bags are awaiting disposal storage should be in a labelled, leak-proof, puncture-resistant container.

### **7) Supply Chain Management:**

These must be addressed, and records kept. One person allocated to keep meticulous record of PPE used and all infection control items e.g. linen savers, soap and alcohol-based hand rub.

## Personal Protective Equipment (PPE)

### Key Principals about PPE in the context of the epidemic

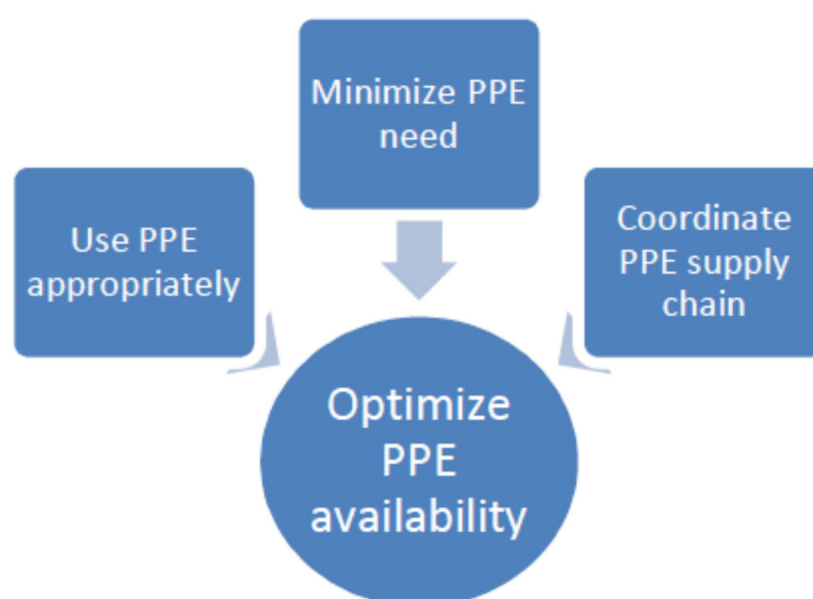
1. It is NOT the firstline in protection – remember the Heirachy of Controls
2. The philosophy of “**rational use of PPE**” must apply at all times
3. PPE use must be based on a sound “**risk assessment**” approach
4. In the time of shortage, “**re-use**” and “**extended use**” under strict guidelines is necessary

Minimal composition of a set of PPE for frontline HCWs exposed to PUI or positive cases of COVID-19 (ECDC, 2020)

Protection	Suggested PPE
<b>Respiratory protection</b>	FFP2 or FFP3 respirator (valved or non-valved version)*
<b>Eye protection</b>	Goggles (or face shield)
<b>Body protection</b>	Long-sleeved water-resistant gown
<b>Hand protection</b>	Gloves

\* In case of shortage of respirators, the use of face masks (surgical or procedural masks) is recommended. When this type of PPE is used, the limitations and risks connected to its use should be assessed on a case-by-case basis.

\*\*The FFP2 is equivalent to the US N95 rating and the FFP3 provides higher protection



WHO: Rational use of PPE in the COVID-19 epidemic (see additional material in this Manual Appendix)





N95 Mask



FFP2 Mask (equivalent to N95) with goggles

## Recommend Hazard Control based on Area and Job Risk Profiling

Area of healthcare facility	Target healthcare staff	Hazard Control and PPE
Entrance	Security staff Information officer	Medical mask Alcohol based hand rub
Card office Clerk's desk (OPDs & wards)	Admin officer in card office Clerks	Medical mask Alcohol based hand rub
Triage and Vital Sign	Healthcare worker e.g. nurse	Medical mask Alcohol based hand rub Gown
Consultation rooms Wards Employee Health Services staff	Healthcare workers e.g. doctors, nurses, physiotherapists	Medical mask/ N95 Respirator (for aerosol generating procedures) Gloves Gown Eye protection Apron (if gown not waterproof; during aerosol generating procedures)
Operating theatre Recovery rooms Procedure rooms	Healthcare workers e.g. doctors, nurses	N95 Respirator Gloves Gown Eye protection Apron

Adapted from WHO Interim Guide to the rational use of PPE among HCWs (WHO, 2020)

## But simply providing PPE is not sufficient!!

See guidance on donning and doffing in Manual Appendix

### Key elements in the provision of PPE:

- Training on the correct use of PPE
- Fit testing, especially for respirators
- Donning and doffing of PPE
- Disposal of PPE
- Extended use and re-use of PPE, especially masks in the era of supply shortage.




# Novel Coronavirus COVID-19

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.

### Triage/points of entry screening personnel




medical mask

### Collecting respiratory specimens



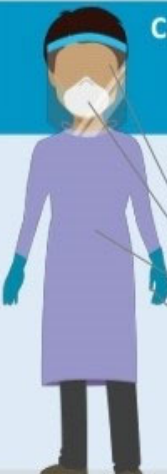
goggles OR face shield  
medical mask  
gown  
gloves

### Caring for a suspected/confirmed case of COVID-19 with NO aerosol-generating procedure




goggles OR face shield  
medical mask  
gown  
gloves

### Caring for a suspected/confirmed case of COVID-19 WITH aerosol-generating procedure



goggles OR face shield  
Respirator (N95 or FFP2)  
gown  
gloves

### Transport of suspected/confirmed case of COVID-19, including direct care



goggles OR face shield  
medical mask  
gown  
gloves

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WHOWPRO



WHOWPRO



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World Health  
Organization  
Western Pacific Region

## Group Interaction

Can you decide which hazard controls apply to each area?

Area	Hazard Control		
	Engineering Control	Administrative Control	PPE
Medical Emergency Clients arriving with EMRS			
Triage / First Contact			
Waiting Area			
Isolation/Examining Room			
Laundry			
Emergency Services			
Mortuary			

**Hazard Control according to area**

Area	Hazard Control		
	Engineering Control	Administrative Control	PPE
Medical Emergency Clients arriving with EMRS	No time to implement controls HCW dons full PPE	No time to implement controls HCW dons full PPE	N95 Respirator Face Shield Gown Gloves
Triage / First Contact	Physical barriers (gazebo) Hand Sanitiser Dispenser Natural Ventilation	Screening and Triage Client spacing	Medical Mask
Waiting Area	Physical Barriers Hand hygiene installations Ventilation	Education and training Standard Operating Procedures Environmental Cleaning Waste management and disposal Supply chain intervention	Medical Mask Face Shield Gown Gloves
Isolation/ Examining Room	Hand Sanitisers	Education and Training Frequent environmental cleaning	N95 Respirator Face Shield Gown Gloves
Laundry			
Emergency Services			
Mortuary			

**Hazard Control according to area (refer to above for details)**

## Hazard Control for Health Care Personnel in Specific Situations

### Emergency Medical Services:

Emergency medical services (EMS) play a vital role in responding to requests for assistance, triaging patients, and providing emergency medical treatment and transport for ill persons.

Updated PPE recommendations for the care of patients with known or suspected COVID-19:

- Facemasks are an acceptable alternative until the supply chain is restored. Respirators should be prioritized for procedures that are likely to generate respiratory aerosols, which would pose the highest exposure risk to HCP. Eye protection, gown, and gloves continue to be recommended.
- If there are shortages of gowns, they should be prioritized for aerosol-generating procedures, care activities where splashes and sprays are anticipated, and high-contact patient care activities that provide opportunities for transfer of pathogens to the hands and clothing of HCP.
- When the supply chain is restored, fit-tested EMS clinicians should return to the use of respirators for patients with known or suspected COVID-19.



### Laundry Staff

Soiled Laundry undergoes a process from the collection in the ward until washing.

1. Removal: Nurses removing COVID contaminated laundry from beds must be attired in full PPE. They can wear the same set of PPEs until all soiled laundry is ready and bagged.
2. Transit: Soiled linen should be placed into double clear labelled bags. Porters transporting bags should wear a medical mask, apron, and gloves.
3. Washing: One allocated person should oversee washing COVID 19 soiled linen in a designated drum. This individual must be attired in full PPE.



### Mortuary

According to the National Department of Health NDOH, the following applies to deceased persons:

#### 1. Handling of dead bodies:

- All persons involved must wear PPE (gown, gloves, medical mask, eye goggles or face shield) when removing a body from the ward.
- Body to be disposed of in body bag, the outer surface and trolley must be disinfected before leaving the ward.
- The family will be allowed to see the body in the mortuary however they will don a medical mask and gloves.
- Staff within the mortuary must wear PPE if in contact with the body for a post mortem.



#### 2. Conveyance of infectious human remains:

Human remains to be placed in a polythene bag and sealed in an airtight container.

#### 3. Disposal of human remains burial or cremation shall be carried out as per by laws of the area municipality.

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**SECTION 2:**  
**THE OCCUPATIONAL HEALTH NURSE AND OCCUPATIONAL  
MEDICAL PRACTITIONER AT THE INSTITUTIONAL LEVEL IN  
THE PUBLIC HEALTH SERVICE**

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## Objectives of this Training

1. Understand the role of the Occupational Health Nurse (OHN) and Occupational Medical Practitioner (OMP) in the epidemic
2. Ensuring that all line managers are aware of your lead role in determining decisions on removal from exposure area, removal from work, isolation, quarantine and return to work
3. Identify workers at high risk for developing severe COVID-19 outcomes, and determine appropriate steps for health protection
4. Understand the rational use of personal protective equipment for staff
5. Being able to conduct an individual exposure risk assessment for affected/exposed workers
6. Make a decision based on risk assessment about removal from exposure, removal from work, isolation quarantine and return to work
7. Understand and be able to explain issues of sick leave, annual leave, unpaid leave to affected workers
8. Determine need for mental health support and understand resources available for this
9. Be able to respond to queries from the general workforce and management about HCW medical management with respect to the epidemic
10. Directly liaise with management and line managers about action taken for any worker, and allow management to identify replacement human resources
11. Be able to monitor and evaluate hazard control measures and address weaknesses and gaps as soon as these arise

## Participants Expectations of the Training

List what are your expectations of this training programme?

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What, in your opinion, are the roles and responsibilities of the OHN and OMP in the context of the epidemic?

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### Functions of the OHP/OMP

1. Identify workers at high risk for developing serious COVID-19 outcomes
2. Provide leadership in the management of the health of the HCW, including decisions on removal, isolation and quarantine
3. Perform a comprehensive individual exposure risk assessment to determine intervention for individual workers
4. Ensure management is aware of decisions to remove workers, and that strategies for replacement are in place
5. Respond to queries about the epidemic, and its impact on the physical and mental health of HCWs
6. Monitor the use of protective equipment resources and its availability



## Identifying the HCW at high risk for serious adverse Covid-19 Outcomes

### **Recommended for removal from frontline exposed areas:**

- Cancer diagnosed HCWs on chemotherapy at present
- Pregnant HCWs
- Those on immunosuppressive therapy i.e. systemic corticosteroids
- HIV diagnosed HCWs who are virally unsuppressed

Other HCWS at risk for COVID 19 include those with:

- Age greater than 60
- Cardiovascular disease
- Diabetes mellitus
- Chronic respiratory disease
- Chronic renal disease

## Conducting the individual Exposure Risk Assessment for presenting HCWs

What do think are the factors that need to be considered in this individual HCW Exposure Risk Assessment?

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### Summary of recommendations for HCWs by risk exposure category

Epidemiologic risk factors	Exposure category	Recommended Monitoring for COVID-19 (until 14 days after last potential exposure)	Work Restrictions for Asymptomatic HCW
Prolonged close contact with a COVID-19 patient <b>who was wearing a facemask</b> (i.e., source control)			
HCW PPE: None	Medium	Active	Exclude from work for 14 days after last exposure
HCW PPE: Not wearing a facemask or respirator	Medium	Active	Exclude from work for 14 days after last exposure
HCW PPE: Not wearing eye protection	Low	Self with delegated supervision	None
HCW PPE: Not wearing gown or gloves	Low	Self with delegated supervision	None
HCW PPE: Wearing all recommended PPE (except wearing a facemask instead of a respirator)	Low	Self with delegated supervision	None
Prolonged close contact with a COVID-19 patient <b>who was not wearing a facemask</b> (i.e., no source control)			
HCW PPE: None	High	Active	Exclude from work for 14 days after last exposure
HCW PPE: Not wearing a facemask or respirator	High	Active	Exclude from work for 14 days after last exposure
HCW PPE: Not wearing eye protection	Medium	Active	Exclude from work for 14 days after last exposure
HCW PPE: Not wearing gown or gloves	Low	Self with delegated supervision	None
HCW PPE: Wearing all recommended PPE (except wearing a facemask instead of a respirator)	Low	Self with delegated supervision	None

Adapted from CDC, 2020

**But what do all these terms mean?!**

## GLOSSARY OF TERMS

**Self-monitoring** means HCP should monitor themselves for fever by taking their temperature twice a day and remain alert for respiratory symptoms (e.g., cough, shortness of breath, sore throat)\*. Anyone on self-monitoring should be provided a plan for whom to contact if they develop fever or respiratory symptoms during the self-monitoring period to determine whether medical evaluation is needed.

**Self-Monitoring with delegated supervision** in a healthcare setting means HCP perform self-monitoring with oversight by the facility's occupational health service. On days HCP are scheduled to work, healthcare facilities could consider measuring temperature and assessing symptoms prior to starting work. Alternatively, a facility may consider having HCP report temperature and absence of symptoms to occupational health prior to starting work. Modes of communication may include telephone calls or any electronic or internet-based means of communication.

**Active Monitoring:** the public health services assumes responsibility for establishing regular communication with potentially exposed people to assess for the presence of fever or respiratory symptoms (e.g., cough, shortness of breath, sore throat). For HCW with *high-* or *medium-risk* exposures, CDC recommends this communication occurs at least once each day. The mode of communication may include telephone calls or any electronic or internet-based means of communication.

**Close Contact:** for healthcare exposures is defined as follows: a) being within approximately 2 metres, of a person with COVID-19 or PUI for a prolonged period of time (such as caring for or visiting the patient; or sitting within 2 metres of the patient in a healthcare waiting area or room); or b) having unprotected direct contact with infectious secretions or excretions of the patient (e.g., being coughed on, touching used tissues with a bare hand)

**High-risk:** HCWs who have had prolonged close contact with patients with COVID-19 who were not wearing a facemask while HCW had their nose and mouth exposed. HCWs in aerosol generating environments (sputum induction, bronchoscopy, nebulisations etc.) are also at high risk.

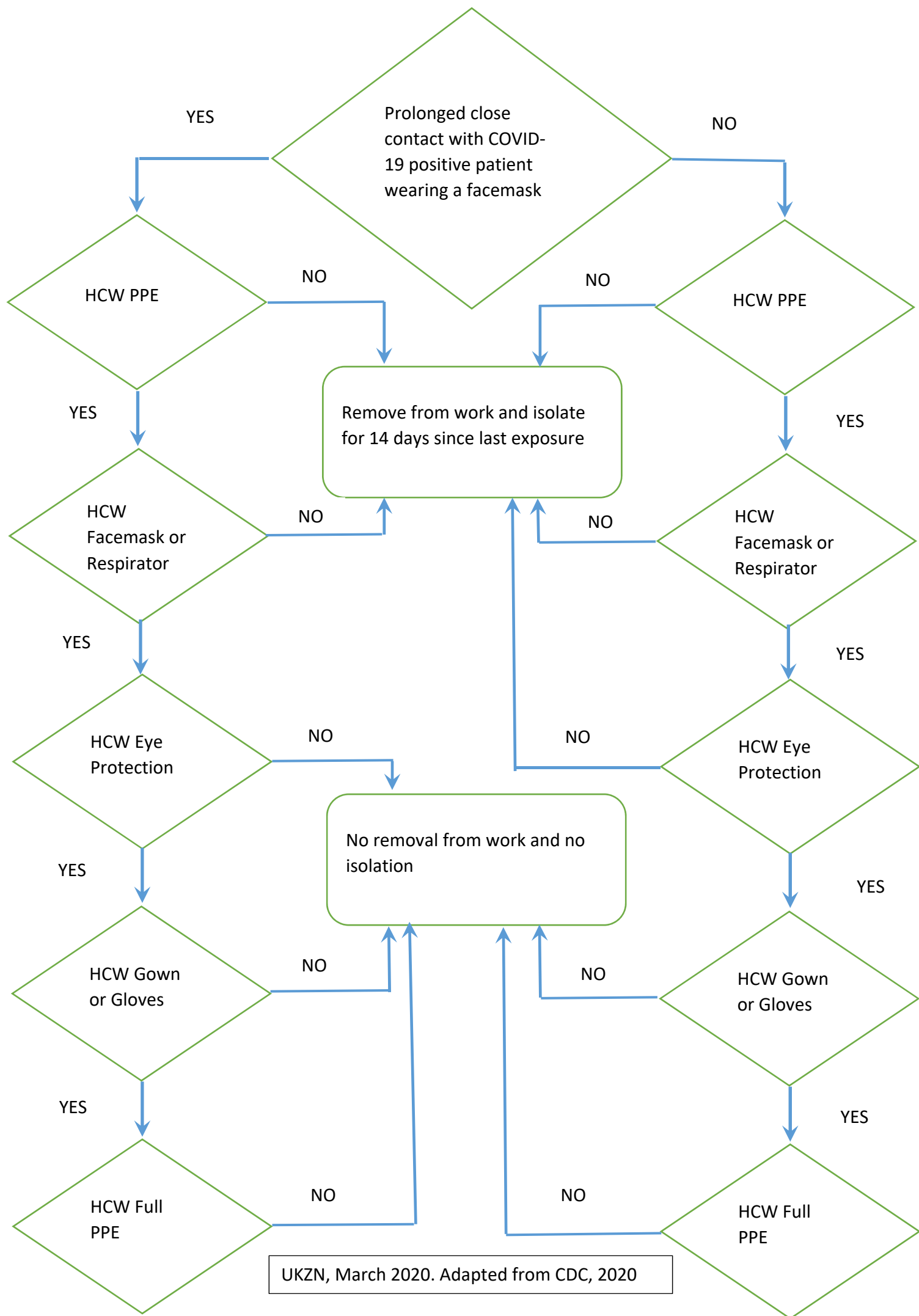
**Low-risk:** HCWs with brief interactions with patients with COVID-19 or prolonged close contact with patients who were wearing a facemask for source control while HCW were wearing a facemask or respirator.

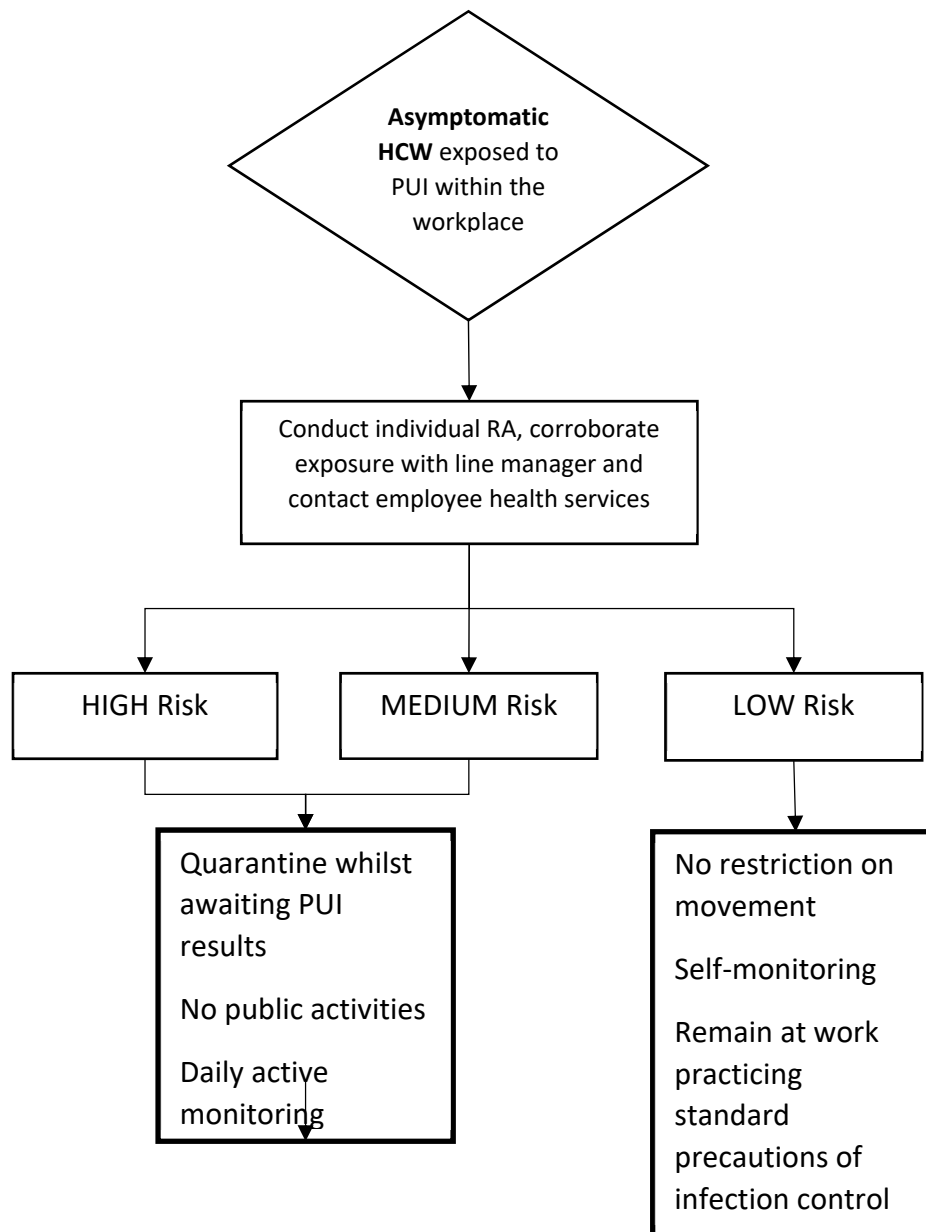
**Medium-risk:** HCWs who had prolonged close contact with patients with COVID-19 who were wearing a facemask whilst HCW's nose and mouth were exposed.

**Isolation:** means the separation of a person or group of people known or reasonably believed to be *infected with a communicable disease and potentially infectious* from those who are not infected to prevent spread of the communicable disease.

**Quarantine:** in general means the separation of a person or group of people reasonably believed to have been *exposed to a communicable disease but not yet symptomatic*, from others who have not been so exposed, to prevent the possible spread of the communicable disease.

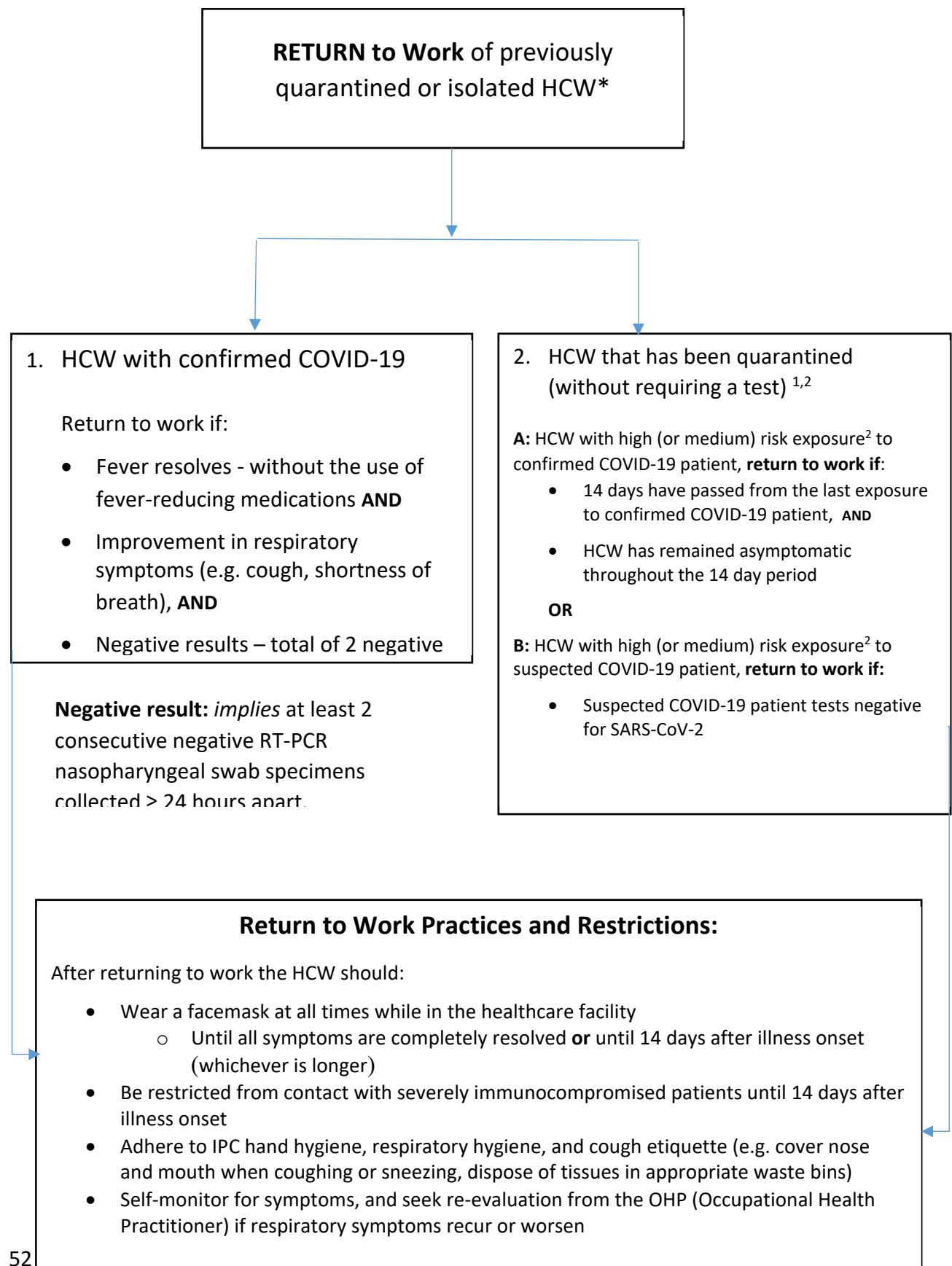
**Community or Travel Associated Exposures:** HCW with potential exposures to COVID-19 in community settings, should have their exposure risk assessed. HCW should inform their facility's occupational health services that they have had a community or travel-associated exposure.





## Criteria for the return-to-work for the health-care worker (HCW) with confirmed or suspected COVID-19

Algorithm for the return-to-work of a HCW with confirmed or suspected COVID-19<sup>1</sup>:





**\*Quarantined HCW:**

- **Forced Quarantine:** HCW quarantined (by a medical practitioner) after prolonged close contact to COVID-19 patient. HCW has remained asymptomatic, and has either tested negative or has not been tested for SARS-CoV-2.
- **Self Quarantine:** HCW has perceived contact with a suspected or probable COVID-19 case and has been in quarantine (with the approval of the OHP and line manager). The HCW has not been tested for SARS-CoV-2, and remains asymptomatic.

## Issues related to Leave/Sick Leave and Absenteesims

What do think leave issues related to the epidemic?

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## Leave and Absenteeism Issues

- The management of an exposed HCW is the responsibility of the OHS
- If HCW is assessed by a private medical practitioner then the decisions made **MUST** be communicated to the OHS within 24 hours
- The OHS team is responsible for conducting an exposure risk assessment in all cases of an exposed HCW; including circumstances where the HCW sought medical advice from a private medical practitioner
- If compulsory quarantine or self-isolation is **advised by a medical practitioner**, then the DPSA circular No 07 of 2020 must be implemented
- The HCW can claim sick leave; if sick leave is exhausted then he/she can claim incapacity leave (Schedule 6 DPSA Circular 7, 2020)
- If a HCW decides to self-isolate or quarantine **without medical intervention** such isolation is deemed as a leave of absence and should be claimed from annual leave and thereafter unpaid leave. Disciplinary action can also be implemented in this case (Schedule 7 DPSA Circular 7, 2020)
- If a HCW refuses to report to duty solely based on fear of COVID-19, that is deemed as unpaid leave and disciplinary action can be implemented (Schedule 7 DPSA Circular 7, 2020)
- Family responsibility leave can be claimed if the HCW needs to take care of his/her spouse/child or life partner who is in self-isolation or quarantine
- Compensation process for COVID-19 has currently not been finalised

## Psychosocial and Mental Health Issues

How do you think these issues will present, and what will be the best ways to prevent them from happening?

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## Appendices

### WHO Rational Use of PPE

ECDC TECHNICAL REPORT. Guidance for wearing and removing personal protective equipment in healthcare settings for the care of patients with suspected or confirmed COVID-19. February 2020.

<https://www.ecdc.europa.eu/sites/default/files/documents/COVID-19-guidance-wearing-and-removing-personal-protective-equipment-healthcare-settings-updated.pdf>

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World Health Organization (WHO). Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected: Interim guidance 25 January 2020. Available at: [https://www.who.int/publications-detail/infection-preventionand-control-during-health-care-when-novel-coronavirus-\(ncov\)-infection-is-suspected-20200125](https://www.who.int/publications-detail/infection-preventionand-control-during-health-care-when-novel-coronavirus-(ncov)-infection-is-suspected-20200125)

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# Guidance for wearing and removing personal protective equipment in healthcare settings for the care of patients with suspected or confirmed COVID-19

February 2020

## Scope of this document

This document provides support to healthcare workers managing suspected or confirmed cases of novel coronavirus 2019 (COVID-19). The general objectives of the document are:

- to present the minimal set of personal protective equipment (PPE) required for managing suspected or confirmed COVID-19 cases;
- to make healthcare workers aware of the critical aspects of the donning and doffing of PPE; and
- to strengthen occupational safety in healthcare workers for patients suspected of, or confirmed with, COVID-19.

This document is based on current COVID-19 knowledge and PPE best practices.

ECDC will update this document based on the evolving situation and if new relevant information arises.

## Target audience

Healthcare workers and infection prevention and control personnel in EU/EEA countries and in the United Kingdom.

## Background

### What is SARS-CoV-2 and COVID-19?

The causative agent involved in the current outbreaks of COVID-19 is a virus belonging to the family of *Coronaviridae* (genus: *Betacoronavirus*), a large family of enveloped, positive-sense single-stranded RNA viruses. Coronaviruses are transmitted in most instances through large respiratory droplets and contact transmission, but other modes of transmission (i.e. airborne and faeco-oral) have also been proposed.

The average incubation period is estimated at 5 to 6 days, ranging from 0 to 14 days [1]. There is currently no specific treatment or vaccine against COVID-19.

More disease background information is available online from [ECDC](#) [2] and [WHO](#) [3], and in the last ECDC Rapid Risk Assessment [4].

## Suggested minimal PPE set

The suggested minimal PPE set protects from contact, droplet and airborne transmission. The composition of the set is described in Table 1 and shown in Figure 1.

**Table 1. Minimal composition of a set of PPE for the management of suspected or confirmed cases of COVID-19**

Protection	Suggested PPE
<b>Respiratory protection</b>	FFP2 or FFP3 respirator (valved or non-valved version)*
<b>Eye protection</b>	Goggles (or face shield)
<b>Body protection</b>	Long-sleeved water-resistant gown
<b>Hand protection</b>	Gloves

\* In case of shortage of respirators, the use of face masks (surgical or procedural masks) is recommended. When this type of PPE is used, the limitations and risks connected to its use should be assessed on a case-by-case basis.

### **Respiratory protection**

The respirator protects from the inhalation of droplets and particles. Because different types of respirators fit differently between users, the respirator requires a fitting test.

ECDC suggests the use of class 2 or 3 filtering face-piece (FFP) respirators (FFP2 or FFP3, Figure 1) when assessing a suspected case or managing a confirmed case. A FFP3 respirator should be always used when performing aerosol-generating procedures.

Face masks (surgical masks) mainly protect from exhaled droplets [5]; their use is recommended in case of shortage of respirators and on a case-by-case assessment. Surgical masks do not require fit testing.

### **Eye protection**

Goggles, or face shields (Figure 2), should be used to prevent virus exposure of the eye mucosa.

Important: goggles need to fit the user's facial features and have to be compatible with the respirator.

### **Body protection**

Long-sleeved water-resistant gowns should be used to prevent body contamination. This PPE item does not need to be sterile unless it is used in a sterile environment (e.g. operating room).

If water-resistant gowns are not available, a single-use plastic apron worn over the non-water-resistant gown can be used.

### **Hand protection**

Gloves should be used when managing suspected or confirmed COVID-19 patients.

For more detailed information about PPE when caring for COVID-19 suspected or confirmed patients in healthcare settings, please refer to this [ECDC technical document](#) [6].

**Figure 1. Suggested minimal PPE set for the management of suspected or confirmed cases of COVID-19: FFP2 or FFP3 respirators, goggles, long-sleeved water-resistant gown and gloves**

**Figure 2. A face shield**



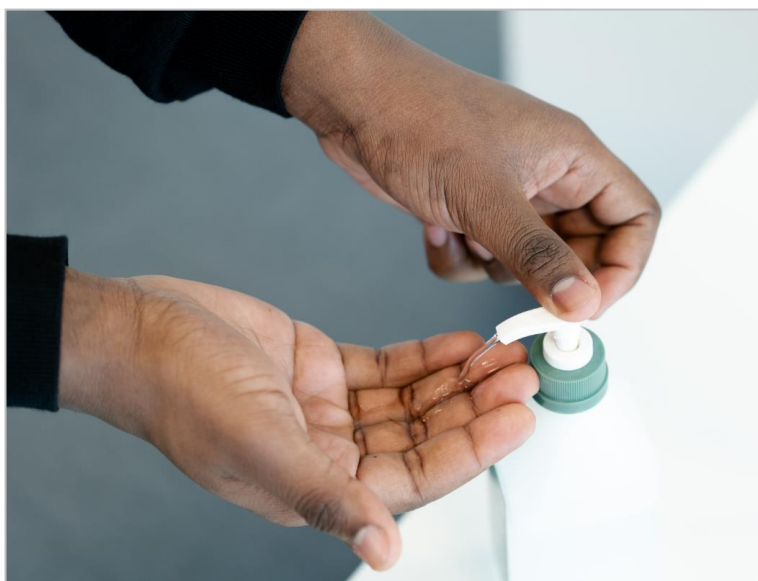
Most PPE components come in different sizes, and it is important to stress that PPE does not follow a one-size-fits-all principle. A proper PPE fit is essential to obtain protection; a non-suitable size will not protect its wearer.

There are different options for wearing (donning) and removing (doffing) PPE. ECDC suggests the following procedure for safe donning and doffing.

## **Wearing (donning) the PPE**

Before wearing the PPE for managing a suspected or confirmed COVID-19 case, proper hand hygiene should be performed following international recommendations [7]. This is a critical aspect in this setting and should be performed using an alcohol-based solution in accordance with the manufacturer's instructions (Figure 3).

**Figure 3. Hand hygiene performed using alcohol-based solution**



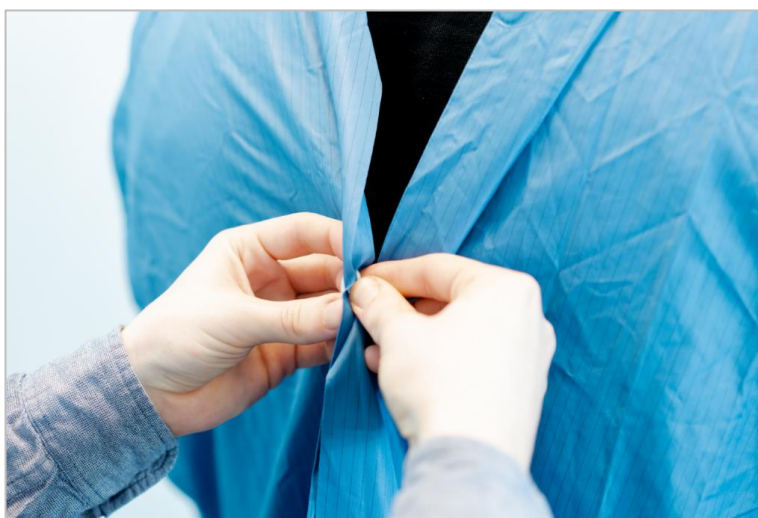


The first PPE to be donned (Figure 4) is the gown. There are different types of gowns (single use, reusable); this guidance presents a reusable long-sleeved water-resistant gown. When using a gown with back closure, as shown below, a second operator should assist in buttoning up the back (Figure 5).

**Figure 4. Donning of a long-sleeved water-resistant gown**



**Figure 5. Buttoning up the backside of the gown; performed by an assistant**



After wearing the gown, it is suggested to proceed with the respirator that protects from the inhalation of droplets and particles. ECDC suggests that FFP2 or FFP3 respirators (Figure 6) be used for all procedures when managing a suspected or a confirmed COVID-19 case. It is important to perform a fitting test after the respirator has been put on, following the manufacturer's instructions. There are different methods to fit-test a respirator. Further information can be found in the ECDC technical document '[Safe use of personal protective equipment in the treatment of infectious diseases of high consequence](#)' [5].

**Figure 6. Wearing of a FFP (class 2 or 3) respirator**



The metal nose clip needs to be adjusted (Figure 7) and the straps have to be tightened to have a firm and comfortable fit. If you cannot achieve a proper fit, position the straps crosswise. However, this minor modification could imply a deviation from the recommendations in the manufacturer's product manual.

**Figure 7. Fitting the respirator's metal nose clip**



If a face mask (surgical mask) is worn as substitution for a respirator (Figure 8), it is important to correctly position it on the face and adjust it with the metal nose clip (Figure 9) in order to achieve a proper fit.

**Figure 8. Wearing of a face mask (surgical mask)**





**Figure 9. Fitting the face mask's metal nose clip**

Once the respirator has been properly positioned, put on the goggles for eye protection. Place the goggles over the mask's straps and ensure that the textile elastic strap fits snugly – but not too tightly (Figures 10 and 11).

**Figure 10. Wearing of goggles with textile elastic strap****Figure 11. Side view of goggles with an elastic textile strap**

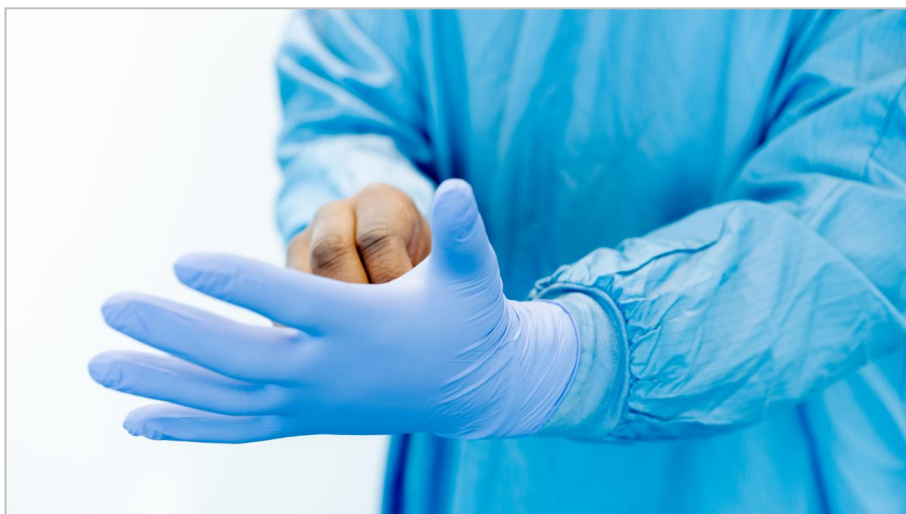
If goggles with temples are used, make sure that they are properly positioned and fit well (Figure 12).

**Figure 12. Wearing of goggles with temples**



After the goggles, the gloves are next. When wearing gloves, it is important to extend the glove to cover the wrist over the gown's cuffs (Figure 13). For individuals allergic to latex gloves, an alternative option, for example nitrile gloves, should be available.

**Figure 13. Wearing of gloves**

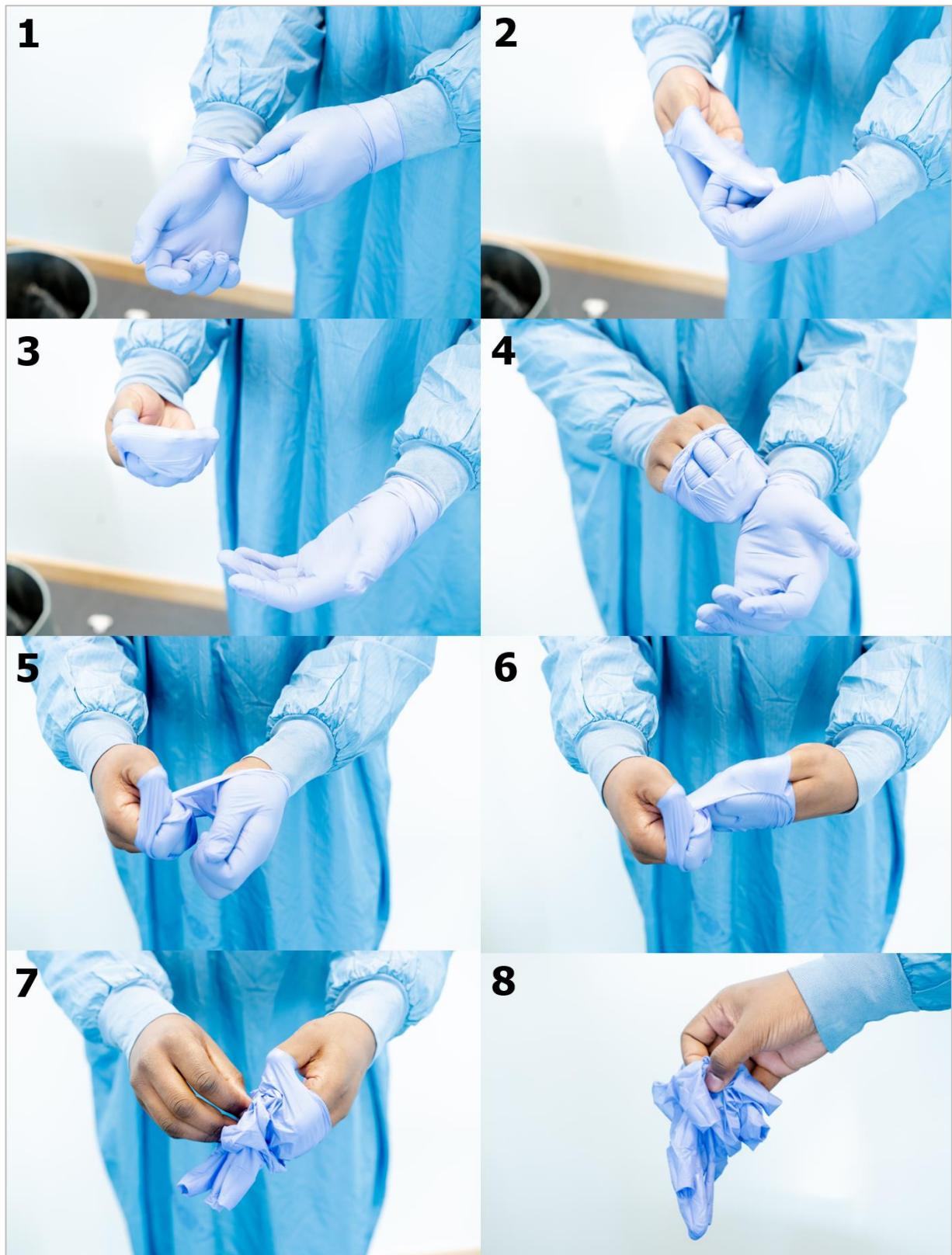


## Removing (doffing) the PPE

Wearing the PPE correctly will protect the healthcare worker from contamination. After the patient has been examined, the removal (doffing) of the PPE is a critical and important step that needs to be carefully carried out in order to avoid self-contamination because the PPE could by now be contaminated.

The gloves are removed first because they are considered a heavily contaminated item. Use of alcohol-based hand disinfectant should be considered before removing the gloves. The gloves should be removed following eight steps (Figure 14).

Start by (1) pinching and holding the glove (with the other gloved hand) between the palm and wrist area, (2) peeling the glove away from the wrist (3) until it turns inside out covering the fingers. With the now half-gloved hand, (4) pinch and hold the fully gloved hand between the palm and wrist, (5) peel the glove away from the wrist (6) until it turns inside out and covers the fingers. Now that both hands are half-gloved, (7) remove the glove from one hand completely by grabbing the inside part of the glove and peeling it away from the hand, and do the same for the remaining half-gloved hand using the non-gloved hand, while always grabbing the inside part of the glove. Dispose of the gloves (8) in a biohazard bin.

**Figure 14. Removal of gloves (steps 1 to 8)**

After the removal of gloves, hand hygiene should be performed and a new pair of gloves should be worn to further continue the doffing procedure. Using a new pair of gloves will prevent self-contamination.

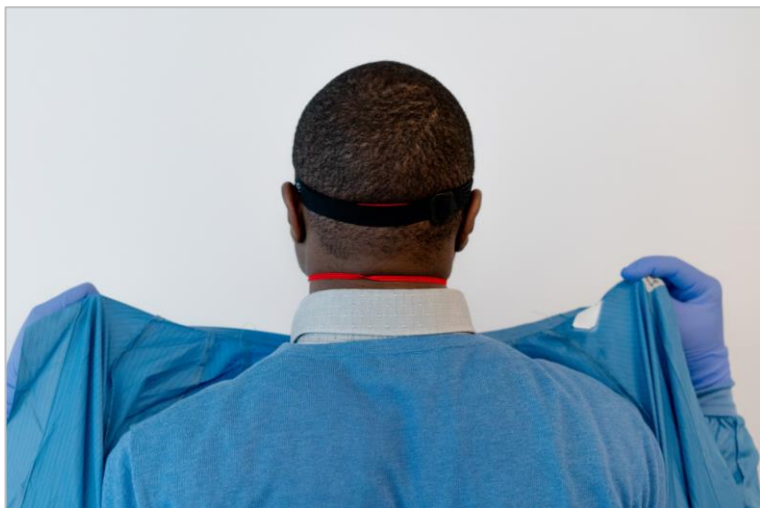


With the new pair of gloves on, the gown should be removed. When using a gown with back closure (as used in this document), a second operator should assist in unbuttoning the backside of the gown (Figure 15). The assistant should wear gloves and a surgical mask, which need to be removed after opening the gown. After the gloves of the assistant are removed, hand hygiene should be performed using an alcoholic solution. After the gown has been unbuttoned, the gown can be removed by the healthcare worker by grabbing the back of the gown (Figure 16) and pulling it away from the body, keeping the contaminated front part inside the gown (Figure 17).

**Figure 15. Unbuttoning of the backside of the gown, performed by an assistant**



**Figure 16. Removal of gown: grabbing the back of the gown**



**Figure 17. Removal of gown: pulling the gown away from the body**



Single-use gowns can now be disposed of; reusable gowns have to be placed in a bag or container for disinfection (Figure 18).

**Figure 18. Placing the gown in a biohazard container for disinfection**



After the gown, the goggles should be removed and either disposed if they are single-use, or placed in a bag or container for disinfection. In order to remove the goggles, a finger should be placed under the textile elastic strap in the back of the head and the goggles taken off as shown in Figure 19. Touching the front part of the goggles, which can be contaminated, should be avoided. If goggles with temples are used, they should be removed as shown in Figure 20.

**Figure 19. Removal of goggles with textile elastic strap (steps 1 to 4)**



**Figure 20. Removal of goggles with temples (steps 1 and 2)**

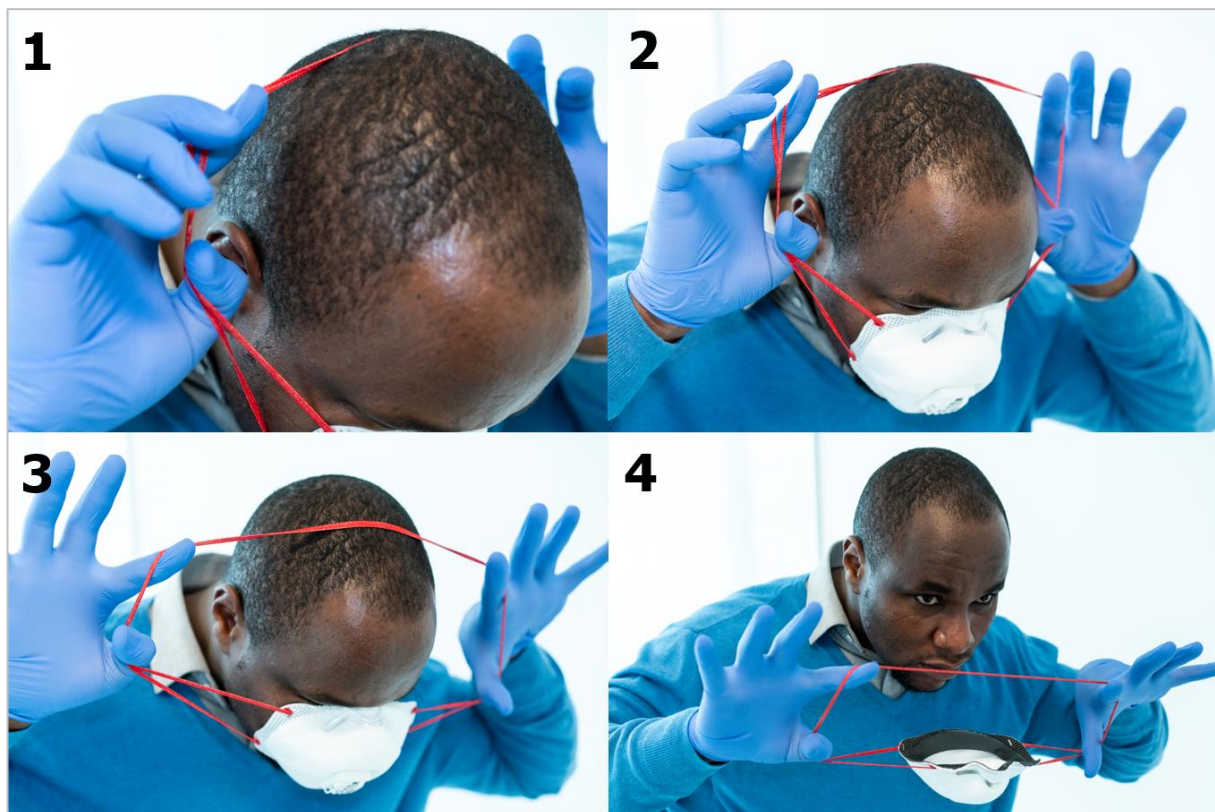




The respirator should be removed next. In order to remove the respirator, a finger or thumb should be placed under the straps in the back and the respirator taken off as shown in Figure 21.

The respirator (or the surgical mask) should be disposed of after removal. It is important to avoid touching the respirator with the gloves (except for the elastic straps) during its removal.

**Figure 21. Removal of respirator (steps 1 through 4)**



The last PPE items that should be removed are the gloves. Use of alcohol-based solution should be considered before removing the gloves. The gloves should be removed in accordance with the procedure described above. After glove removal, hand hygiene should be performed.

## Contributing ECDC experts (in alphabetical order)

Cornelia Adlhoch, Orlando Cenciarelli, Scott Chiossi, Mikolaj Handzlik, Michael Ndirangu, Daniel Palm, Pasi Penttinen, Carl Suetens

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# Coronavirus Disease 2019 (COVID-19)

## Interim U.S. Guidance for Risk Assessment and Public Health Management of Healthcare Personnel with Potential Exposure in a Healthcare Setting to Patients with Coronavirus Disease (COVID-19)

March 7, 2020

### Summary of Recent Changes

Update: This Interim Guidance was updated on March 7, 2020 to make the following changes:

- Updating recommendations regarding HCP contact tracing, monitoring, and work restrictions in selected circumstances. These include allowances for asymptomatic HCP who have had an exposure to a COVID-19 patient to continue to work after options to improve staffing have been exhausted and in consultation with their occupational health program. (See Additional Considerations and Recommendations at the end of the document)
- Removed requirement under “self monitoring with delegated supervision” for healthcare facilities to actively verify absence of fever and respiratory symptoms when healthcare personnel (HCP) report for work. This is now optional.
- Simplified risk exposure categories based on most common scenarios with focus on presence/absence of source control measures; use of personal protective equipment (PPE) by HCP; and degree of contact with the patient (i.e., prolonged versus brief)
- Added language advising HCP to inform their occupational health program if they have travel or community-associated exposures as defined in [Interim US Guidance for Risk Assessment and Public Health Management of Persons with Potential Coronavirus Disease \(COVID-19\) Exposure in Travel-associated or Community Settings](#).

## Background

Coronaviruses are a large family of viruses that are common in humans and in many different species of animals, including camels, cattle, cats, and bats. Rarely, animal coronaviruses can infect people and then spread between people such as with SARS-CoV, MERS-CoV, and now with SARS-CoV-2.

Published and early reports suggest spread from person-to-person most frequently happens during close exposure to a person infected with COVID-19. Person-to-person appears to occur similar to other respiratory viruses, mainly via respiratory droplets produced when an infected person coughs or sneezes. These droplets can land in the mouths, noses, or eyes of people who are nearby or possibly be inhaled into the lungs. Although not likely to be the predominant mode of transmission, it is not clear the extent to which touching a surface contaminated with the virus and then touching the mouth, nose, or eyes contributes to transmission.

## Purpose

This interim guidance is intended to assist with assessment of risk, monitoring, and work restriction decisions for HCP with potential exposure to COVID-19. For guidance on assessment and management of exposure risk in non-healthcare settings, refer to the [Interim US Guidance for Risk Assessment and Public Health Management of Persons with Potential Coronavirus Disease \(COVID-19\) Exposure in Travel-associated or Community Settings](#). The guidance for non-healthcare settings can also be used to identify the movement, public activity and travel restrictions that apply to the HCP included here.

Because of their often extensive and close contact with vulnerable individuals in healthcare settings, a conservative approach to HCP monitoring and restriction from work was taken to quickly identify early symptoms and prevent transmission from potentially contagious HCP to patients, HCP, and visitors. The signs and symptoms\* described in this guidance are broader than those described when assessing exposures for individuals not working in healthcare. Healthcare facilities should have a low threshold for evaluating symptoms and testing symptomatic HCP, particularly those who fall into the *high-* and *medium-risk* categories described in this guidance.

This guidance is based on currently available data about COVID-19. Recommendations regarding which HCP are restricted from work may not anticipate every potential scenario and will change if indicated by new information.

Healthcare facilities, in consultation with public health authorities, should use clinical judgement as well as the principles outlined in this guidance to assign risk and determine need for work restrictions. CDC remains available for further consultation by calling the Emergency Operations Center at 770-488-7100. This cautious approach will be refined and updated as more information becomes available and as response needs change in the United States.

## Other Resources

For guidance on risk assessment and public health management of persons not working in a U.S. healthcare setting refer to: [Interim US Guidance for Risk Assessment and Public Health Management of Persons with Potential Coronavirus Disease \(COVID-19\) Exposure in Travel-associated or Community Settings](#).

For infection prevention and control guidance for healthcare settings caring for Persons with Known or Under Investigation (PUI) for Coronavirus Disease (COVID-19), refer to the [Interim Infection Prevention and Control Recommendations for Patients with Known or Patients Under Investigation for Coronavirus Disease \(COVID-19\) in a Healthcare Setting](#).

## I. Definitions Used in this Guidance

**Self-monitoring** means HCP should monitor themselves for fever by taking their temperature twice a day and remain alert for respiratory symptoms (e.g., cough, shortness of breath, sore throat)\*. Anyone on self-monitoring should be provided a plan for whom to contact if they develop fever or respiratory symptoms during the self-monitoring period to determine whether medical evaluation is needed.

**Active monitoring** means that the state or local public health authority assumes responsibility for establishing regular communication with potentially exposed people to assess for the presence of fever or respiratory symptoms (e.g., cough, shortness of breath, sore throat)\*. For HCP with *high-* or *medium-risk* exposures, CDC recommends this communication occurs at least once each day. The mode of communication can be determined by the state or local public health authority and may include telephone calls or any electronic or internet-based means of communication.

For HCP, active monitoring can be delegated by the health department to the HCP's healthcare facility occupational health or infection control program, if both the health department and the facility are in agreement. Note, inter-jurisdictional coordination will be needed if HCP live in a different local health jurisdiction than where the healthcare facility is located.

**Self-Monitoring with delegated supervision** in a healthcare setting means HCP perform self-monitoring with oversight by their healthcare facility's occupational health or infection control program in coordination with the health department of jurisdiction, if both the health department and the facility are in agreement. On days HCP are scheduled to work, healthcare facilities could consider measuring temperature and assessing symptoms prior to starting work. Alternatively, a facility may consider having HCP report temperature and absence of symptoms to occupational health prior to starting work. Modes of communication may include telephone calls or any electronic or internet-based means of communication.

Occupational health or infection control personnel should establish points of contact between the organization, the self-monitoring personnel, and the local or state health departments of authority in the location where self-monitoring personnel will be during the self-monitoring period. This communication should result in agreement on a plan for medical evaluation of personnel who develop fever or respiratory symptoms (e.g., cough, shortness of breath, sore throat)\* during the self-monitoring period. The plan should include instructions for notifying occupational health and the local public health authority, and transportation arrangements to a designated hospital, if medically necessary, with advance notice if fever or respiratory symptoms occur. The supervising organization should remain in contact with HCP through the self-monitoring period to manage self-monitoring activities and provide timely and appropriate follow-up if symptoms occur in a HCP. Note, inter-jurisdictional coordination will be needed if HCP live in a different local health jurisdiction than where the healthcare facility is located.

located.

**Close contact** for healthcare exposures is defined as follows: a) being within approximately 6 feet (2 meters), of a person with COVID-19 for a prolonged period of time (such as caring for or visiting the patient; or sitting within 6 feet of the patient in a healthcare waiting area or room); or b) having unprotected direct contact with infectious secretions or excretions of the patient (e.g., being coughed on, touching used tissues with a bare hand).

Data are limited for definitions of close contact. Factors for consideration include the duration of exposure (e.g., longer exposure time likely increases exposure risk), clinical symptoms of the patient (e.g., coughing likely increases exposure risk) and whether the patient was wearing a facemask (which can efficiently block respiratory secretions from contaminating others and the environment), PPE used by personnel, and whether aerosol-generating procedures were performed.

Data are insufficient to precisely define the duration of time that constitutes a prolonged exposure. However, until more is known about transmission risks, it is reasonable to consider an exposure greater than a few minutes as a prolonged exposure. Brief interactions are less likely to result in transmission; however, clinical symptoms of the patient and type of interaction (e.g., did the patient cough directly into the face of the HCP) remain important. Recommendations will be updated as more information becomes available.

Risk stratification can be made in consultation with public health authorities. Examples of brief interactions include: briefly entering the patient room without having direct contact with the patient or their secretions/excretions, brief conversation at a triage desk with a patient who was not wearing a facemask. See [Table 1](#) for more detailed information.

**Healthcare Personnel:** For the purposes of this document HCP refers to all paid and unpaid persons serving in healthcare settings who have the potential for direct or indirect exposure to patients or infectious materials, including body substances; contaminated medical supplies, devices, and equipment; contaminated environmental surfaces; or contaminated air. For this document, HCP does not include clinical laboratory personnel.

## II. Defining Exposure Risk Category

While body fluids other than respiratory secretions have not been clearly implicated in transmission of COVID-19, unprotected contact with other body fluids, including blood, stool, vomit, and urine, might put HCP at risk of COVID-19.

Table 1 describes possible scenarios that can be used to assist with risk assessment. These scenarios do not cover all potential exposure scenarios and should not replace an individual assessment of risk for the purpose of clinical decision making or individualized public health management. Any public health decisions that place restrictions on an individual's or group's movements or impose specific monitoring requirements should be based on an assessment of risk for the individual or group. Healthcare facilities, in consultation with public health authorities should use the concepts outlined in this guidance along with clinical judgement to assign risk and determine need for work restrictions.

For this guidance *high-risk* exposures refer to HCP who have had prolonged close contact with patients with COVID-19 who were not wearing a facemask while HCP nose and mouth were exposed to material potentially infectious with the virus causing COVID-19. Being present in the room for procedures that generate aerosols or during which respiratory secretions are likely to be poorly controlled (e.g., cardiopulmonary resuscitation, intubation, extubation, bronchoscopy, nebulizer therapy, sputum induction) on patients with COVID-19 when the healthcare providers' eyes, nose, or mouth were not protected, is also considered *high-risk*.

*Medium-risk* exposures generally include HCP who had prolonged close contact with patients with COVID-19 who were wearing a facemask while HCP nose and mouth were exposed to material potentially infectious with the virus causing COVID-19. Some *low-risk* exposures are considered *medium-risk* depending on the type of care activity performed. For example, HCP who were wearing a gown, gloves, eye protection and a facemask (instead of a respirator) during an aerosol-generating procedure would be considered to have a medium-risk exposure. If an aerosol-generating procedure had not been performed, they would have been considered *low-risk*. See [Table 1](#) for additional examples.

*Low-risk* exposures generally refer to brief interactions with patients with COVID-19 or prolonged close contact with patients who were wearing a facemask for source control while HCP were wearing a facemask or respirator. Use of eye protection, in addition to a facemask or respirator would further lower the risk of exposure.

Proper adherence to currently recommended infection control practices, including all recommended PPE, should protect HCP having prolonged close contact with patients infected with COVID-19. However, to account for any inconsistencies in use or adherence that could result in unrecognized exposures HCP should still perform self-monitoring with delegated supervision.

HCP with no direct patient contact and no entry into active patient management areas who adhere to routine safety precautions do not have a risk of exposure to COVID-19 (i.e., they have *no identifiable risk*.)

*Currently, this guidance applies to HCP with potential exposure in a healthcare setting to patients with confirmed COVID-19. However, HCP exposures could involve a PUI who is awaiting testing. Implementation of monitoring and work restrictions described in this guidance could be applied to HCP exposed to a PUI if test results for the PUI are not expected to return within 48 to 72 hours. A record of HCP exposed to a PUI should be maintained and HCP should be encouraged to perform self-monitoring while awaiting test results. If the results will be delayed more than 72 hours or the patient is positive for COVID-19, then the monitoring and work restrictions described in this document should be followed.*

**Table 1: Epidemiologic Risk Classification<sup>1</sup> for Asymptomatic Healthcare Personnel Following Exposure to Patients with Coronavirus Disease (COVID-19) or their Secretions/Excretions in a Healthcare Setting, and their Associated Monitoring and Work Restriction Recommendations**

*Both high- and medium-risk exposures place HCP at more than low-risk for developing infection; therefore, the recommendations for active monitoring and work restrictions are the same for these exposures. However, these risk categories were created to align with risk categories described in the Interim US Guidance for Risk Assessment and Public Health Management of Persons with Potential Coronavirus Disease (COVID-19) Exposure in Travel-associated or Community Settings, which outlines criteria for quarantine and travel restrictions specific to high-risk exposures. Use that Interim Guidance for information about the movement, public activity, and travel restrictions that apply to the HCP included here.*

*The highest risk exposure category that applies to each person should be used to guide monitoring and work restrictions.*

Note: While respirators confer a higher level of protection than facemasks, and are recommended when caring for patients with COVID-19, facemasks still confer some level of protection to HCP, which was factored into our assessment of risk.

Epidemiologic risk factors	Exposure category	Recommended Monitoring for COVID-19 (until 14 days after last potential exposure)	Work Restrictions for Asymptomatic HCP
Prolonged close contact with a COVID-19 patient who was wearing a facemask (i.e., source control)			
HCP PPE: None	Medium	Active	Exclude from work for 14 days after last exposure
HCP PPE: Not wearing a facemask or respirator	Medium	Active	Exclude from work for 14 days after last exposure
HCP PPE: Not wearing eye protection	Low	Self with delegated supervision	None
HCP PPE: Not wearing gown or gloves <sup>a</sup>	Low	Self with delegated supervision	None
HCP PPE: Wearing all recommended PPE (except wearing a facemask instead of a respirator)	Low	Self with delegated supervision	None
Prolonged close contact with a COVID-19 patient who was not wearing a facemask (i.e., no source control)			
HCP PPE: None	High	Active	Exclude from work for 14 days after last exposure
HCP PPE: Not wearing a facemask or respirator	High	Active	Exclude from work for 14 days after last exposure



Epidemiologic risk factors	Exposure category	Recommended Monitoring for COVID-19 (until 14 days after last potential exposure)	Work Restrictions for Asymptomatic HCP
HCP PPE: Not wearing eye protection <sup>b</sup>	Medium	Active	Exclude from work for 14 days after last exposure
HCP PPE: Not wearing gown or gloves <sup>a,b</sup>	Low	Self with delegated supervision	None
HCP PPE: Wearing all recommended PPE (except wearing a facemask instead of a respirator) <sup>b</sup>	Low	Self with delegated supervision	None

HCP=healthcare personnel; PPE=personal protective equipment

<sup>a</sup>The risk category for these rows would be elevated by one level if HCP had extensive body contact with the patients (e.g., rolling the patient).

<sup>b</sup>The risk category for these rows would be elevated by one level if HCP performed or were present for a procedure likely to generate higher concentrations of respiratory secretions or aerosols (e.g., cardiopulmonary resuscitation, intubation, extubation, bronchoscopy, nebulizer therapy, sputum induction). For example, HCP who were wearing a gown, gloves, eye protection and a facemask (instead of a respirator) during an aerosol-generating procedure would be considered to have a medium-risk exposure.

Additional Scenarios:

- Refer to the footnotes above for scenarios that would elevate the risk level for exposed HCP. For example, HCP who were wearing a gown, gloves, eye protection and a facemask (instead of a respirator) during an aerosol-generating procedure would be considered to have a medium-risk exposure.
- Proper adherence to currently recommended infection control practices, including all recommended PPE, should protect HCP having prolonged close contact with patients infected with COVID-19. However, to account for any inconsistencies in use or adherence that could result in unrecognized exposures, HCP should still perform self-monitoring with delegated supervision.
- HCP not using all recommended PPE who have only brief interactions with a patient regardless of whether patient was wearing a facemask are considered low-risk. Examples of brief interactions include: brief conversation at a triage desk; briefly entering a patient room but not having direct contact with the patient or the patient’s secretions/excretions; entering the patient room immediately after the patient was discharged.
- HCP who walk by a patient or who have no direct contact with the patient or their secretions/excretions and no entry into the patient room are considered to have no identifiable risk.

III. Recommendations for Monitoring Based on COVID–19 Exposure Risk

HCP in any of the risk exposure categories who develop signs or symptoms compatible with COVID-19 must contact their established point of contact (public health authorities or their facility’s occupational health program) for medical evaluation prior to returning to work

1. *High- and Medium-risk* Exposure Category

HCP in the *high- or medium-risk category* should undergo active monitoring, including restriction from work in any healthcare setting until 14 days after their last exposure. If they develop any fever (measured temperature >100.0oF or subjective fever) OR respiratory symptoms consistent with COVID-19 (e.g., cough, shortness of breath, sore throat)\* they should immediately self-isolate (separate themselves from others) and notify their local or state public health authority and healthcare facility promptly so that they can coordinate consultation and referral to a healthcare provider for further evaluation.

2. *Low-risk* Exposure Category

HCP in the *low-risk category* should perform self-monitoring with delegated supervision until 14 days after the last potential exposure. Asymptomatic HCP in this category are not restricted from work. They should check their

temperature twice daily and remain alert for respiratory symptoms consistent with COVID-19 (e.g., cough, shortness of breath, sore throat)\*. They should ensure they are afebrile and asymptomatic before leaving home and reporting for work. If they do not have fever or respiratory symptoms they may report to work. If they develop fever (measured temperature  $\geq 100.0^{\circ}\text{F}$  or subjective fever) OR respiratory symptoms they should immediately self-isolate (separate themselves from others) and notify their local or state public health authority or healthcare facility promptly so that they can coordinate consultation and referral to a healthcare provider for further evaluation. On days HCP are scheduled to work, healthcare facilities could consider measuring temperature and assessing symptoms prior to starting work. Alternatively, facilities could consider having HCP report temperature and symptoms to occupational health prior to starting work. Modes of communication may include telephone calls or any electronic or internet-based means of communication.

### 3. HCP who Adhere to All Recommended Infection Prevention and Control Practices

Proper adherence to currently recommended infection control practices, including all recommended PPE, should protect HCP having prolonged close contact with patients infected with COVID-19. However, to account for any inconsistencies in use or adherence that could result in unrecognized exposures, HCP should still perform self-monitoring with delegated supervision as described under the low-risk exposure category.

### 4. *No Identifiable risk* Exposure Category

HCP in the *no identifiable risk* category do not require monitoring or restriction from work.

### 5. Community or travel-associated exposures

HCP with potential exposures to COVID-19 in community settings, should have their exposure risk assessed according to [CDC guidance](#). HCP should inform their facility's occupational health program that they have had a community or travel-associated exposure. HCP who have a community or travel-associated exposure should undergo monitoring as defined by that guidance. Those who fall into the *high-* or *medium-risk* category described there should be excluded from work in a healthcare setting until 14 days after their exposure. HCP who develop signs or symptoms compatible with COVID-19 should contact their established point of contact (public health authorities or their facility's occupational health program) for medical evaluation prior to returning to work.

## Additional Considerations and Recommendations:

While contact tracing and risk assessment, with appropriate implementation of HCP work restrictions, of potentially exposed HCP remains the recommended strategy for identifying and reducing the risk of transmission of COVID-19 to HCP, patients, and others, it is not practical or achievable in all situations. Community transmission of COVID-19 in the United States has been reported in multiple areas. This development means some recommended actions (e.g., contact tracing and risk assessment of all potentially exposed HCP) are impractical for implementation by healthcare facilities. In the setting of community transmission, all HCP are at some risk for exposure to COVID-19, whether in the workplace or in the community. Devoting resources to contact tracing and retrospective risk assessment could divert resources from other important infection prevention and control activities. Facilities should shift emphasis to more routine practices, which include asking HCP to report recognized exposures, regularly monitor themselves for fever and symptoms of respiratory infection and not report to work when ill. Facilities should develop a plan for how they will screen for symptoms and evaluate ill HCP. This could include having HCP report absence of fever and symptoms prior to starting work each day.

Facilities could consider allowing asymptomatic HCP who have had an exposure to a COVID-19 patient to continue to work after options to improve staffing have been exhausted and in consultation with their occupational health program. These HCP should still report temperature and absence of symptoms each day prior to starting work. Facilities could have exposed HCP wear a facemask while at work for the 14 days after the exposure event if there is a sufficient supply of facemasks. If HCP develop even mild symptoms consistent with COVID-19, they must cease patient care activities, don a facemask (if not already wearing), and notify their supervisor or occupational health services prior to leaving work.

\* Fever is either measured temperature  $\geq 100.0^{\circ}\text{F}$  or subjective fever. Note that fever may be intermittent or may not be present in some patients, such as those who are elderly, immunosuppressed, or taking certain medications (e.g., NSAIDs). Clinical judgement should be used to guide testing of patients in such situations. Respiratory symptoms consistent with COVID-19 are cough, shortness of breath, and sore throat. Medical evaluation may be recommended for lower temperatures ( $<100.0^{\circ}\text{F}$ ) or other symptoms (e.g., muscle aches, nausea, vomiting, diarrhea, abdominal pain headache, runny nose, fatigue) based on assessment by public health authorities.

# Rational use of personal protective equipment for coronavirus disease 2019 (COVID-19)

Interim guidance  
27 February 2020



Coronavirus disease 2019 (COVID-19), caused by the COVID-19 virus, was first detected in Wuhan, China, in December 2019. On 30 January 2020, the WHO Director-General declared that the current outbreak constituted a public health emergency of international concern.

This document summarizes WHO's recommendations for the rational use of personal protective equipment (PPE) in healthcare and community settings, as well as during the handling of cargo; in this context, PPE includes gloves, medical masks, goggles or a face shield, and gowns, as well as for specific procedures, respirators (i.e., N95 or FFP2 standard or equivalent) and aprons. This document is intended for those who are involved in distributing and managing PPE, as well as public health authorities and individuals in healthcare and community settings, and it aims to provide information about when PPE use is most appropriate.

WHO will continue to update these recommendations as new information becomes available.

## Preventive measures for COVID-19 disease

Based on the available evidence, the COVID-19 virus is transmitted between people through close contact and droplets, not by airborne transmission. The people most at risk of infection are those who are in close contact with a COVID-19 patient or who care for COVID-19 patients.

Preventive and mitigation measures are key in both healthcare and community settings. The most effective preventive measures in the community include:

- performing hand hygiene frequently with an alcohol-based hand rub if your hands are not visibly dirty or with soap and water if hands are dirty;
- avoiding touching your eyes, nose and mouth;
- practicing respiratory hygiene by coughing or sneezing into a bent elbow or tissue and then immediately disposing of the tissue;
- wearing a medical mask if you have respiratory symptoms and performing hand hygiene after disposing of the mask;
- maintaining social distance (a minimum of 1 m) from individuals with respiratory symptoms.

Additional precautions are required by healthcare workers to protect themselves and prevent transmission in the healthcare setting. Precautions to be implemented by healthcare workers caring for patients with COVID-19 disease include using

PPE appropriately; this involves selecting the proper PPE and being trained in how to put on, remove and dispose of it.

PPE is only one effective measure within a package that comprises administrative and environmental and engineering controls, as described in WHO's *Infection prevention and control of epidemic- and pandemic-prone acute respiratory infections in health care (I)*. These controls are summarized here.

- **Administrative controls** include ensuring the availability of resources for infection prevention and control measures, such as appropriate infrastructure, the development of clear infection prevention and control policies, facilitated access to laboratory testing, appropriate triage and placement of patients, adequate staff-to-patient ratios and training of staff.
- **Environmental and engineering controls** aim at reducing the spread of pathogens and reducing the contamination of surfaces and inanimate objects. They include providing adequate space to allow social distance of at least 1 m to be maintained between patients and between patients and healthcare workers and ensuring the availability of well-ventilated isolation rooms for patients with suspected or confirmed COVID-19 disease.

COVID-19 is a respiratory disease that is different from Ebola virus disease, which is transmitted through infected bodily fluids. Due to these differences in transmission, the PPE requirements for COVID-19 are different from those required for Ebola virus disease. Specifically, coveralls (sometimes called Ebola PPE) are not required when managing COVID-19 patients.

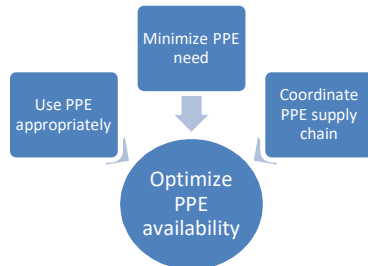
## Disruptions in the global supply chain of PPE

The current global stockpile of PPE is insufficient, particularly for medical masks and respirators; the supply of gowns and goggles is soon expected to be insufficient also. Surging global demand – driven not only by the number of COVID-19 cases but also by misinformation, panic buying and stockpiling – will result in further shortages of PPE globally. The capacity to expand PPE production is limited, and the current demand for respirators and masks cannot be met, especially if the widespread, inappropriate use of PPE continues.

## Recommendations for optimizing the availability of PPE.

In view of the global PPE shortage, the following strategies can facilitate optimal PPE availability (Fig. 1).

**Fig. 1. Strategies to optimize the availability of personal protective equipment (PPE)**



### (1) Minimize the need for PPE

The following interventions can minimize the need for PPE while protecting healthcare workers and other individuals from exposure to the COVID-19 virus in healthcare settings.

- Consider using telemedicine to evaluate suspected cases of COVID-19 disease (2), thus minimizing the need for these individuals to go to healthcare facilities for evaluation.
- Use physical barriers to reduce exposure to the COVID-19 virus, such as glass or plastic windows. This approach can be implemented in areas of the healthcare setting where patients will first present, such as triage areas, the registration desk at the emergency department or at the pharmacy window where medication is collected.
- Restrict healthcare workers from entering the rooms of COVID-19 patients if they are not involved in direct care. Consider bundling activities to minimize the number of times a room is entered (e.g., check vital signs during medication administration or have food delivered by healthcare workers while they are performing other care) and plan which activities will be performed at the bedside.

Ideally, visitors will not be allowed but if this is not possible, restrict the number of visitors to areas where COVID-19 patients are being isolated; restrict the amount of time visitors are allowed to spend in the area; and provide clear instructions about how to put on and remove PPE and perform hand hygiene to ensure visitors avoid self-contamination (see <https://www.who.int/csr/resources/publications/putontakeoff/PPE/en/>).

### (2) Ensure PPE use is rationalized and appropriate

PPE should be used based on the risk of exposure (e.g., type of activity) and the transmission dynamics of the pathogen (e.g., contact, droplet or aerosol). The overuse of PPE will have a further impact on supply shortages. Observing the following recommendations will ensure that the use of PPE is rationalized.

- The type of PPE used when caring for COVID-19 patients will vary according to the setting and type of personnel and activity (Table 1).
- Healthcare workers involved in the direct care of patients should use the following PPE: gowns, gloves, medical mask and eye protection (goggles or face shield).
- Specifically, for aerosol-generating procedures (e.g., tracheal intubation, non-invasive ventilation, tracheostomy, cardiopulmonary resuscitation, manual ventilation before intubation, bronchoscopy) healthcare workers should use respirators, eye protection, gloves and gowns; aprons should also be used if gowns are not fluid resistant (1).
- Respirators (e.g., N95, FFP2 or equivalent standard) have been used for an extended time during previous public health emergencies involving acute respiratory illness when PPE was in short supply (3). This refers to wearing the same respirator while caring for multiple patients who have the same diagnosis without removing it, and evidence indicates that respirators maintain their protection when used for extended periods. However, using one respirator for longer than 4 hours can lead to discomfort and should be avoided (4–6).
- Among the general public, persons with respiratory symptoms or those caring for COVID-19 patients at home should receive medical masks. For additional information, see *Home care for patients with suspected novel coronavirus (COVID-19) infection presenting with mild symptoms, and management of their contacts* (7).
- For asymptomatic individuals, wearing a mask of any type is not recommended. Wearing medical masks when they are not indicated may cause unnecessary cost and a procurement burden and create a false sense of security that can lead to the neglect of other essential preventive measures. For additional information, see *Advice on the use of masks in the community, during home care and in healthcare settings in the context of the novel coronavirus (2019-nCoV) outbreak* (8).

### (3) Coordinate PPE supply chain management mechanisms.

The management of PPE should be coordinated through essential national and international supply chain management mechanisms that include but are not restricted to:

- using PPE forecasts that are based on rational quantification models to ensure the rationalization of requested supplies;
- monitoring and controlling PPE requests from countries and large responders;
- promoting the use of a centralized request management approach to avoid duplication of stock and ensuring strict adherence to essential stock management rules to limit wastage, overstock and stock ruptures;
- monitoring the end-to-end distribution of PPE;
- monitoring and controlling the distribution of PPE from medical facilities stores.



## Handling cargo from affected countries

The rationalized use and distribution of PPE when handling cargo from and to countries affected by the COVID-19 outbreak includes following these recommendations.

- Wearing a mask of any type is not recommended when handling cargo from an affected country.
- Gloves are not required unless they are used for protection against mechanical hazards, such as may occur when manipulating rough surfaces.
- Importantly, the use of gloves does not replace the need for appropriate hand hygiene, which should be performed frequently, as described above.
- When disinfecting supplies or pallets, no additional PPE is required beyond what is routinely recommended. To date, there is no epidemiological information to suggest that contact with goods or products shipped from countries affected by the COVID-19 outbreak have been the source of COVID-19 disease in humans. WHO will continue to closely monitor the evolution of the COVID-19 outbreak and will update recommendations as needed.

**Table 1. Recommended type of personal protective equipment (PPE) to be used in the context of COVID-19 disease, according to the setting, personnel and type of activity<sup>a</sup>**

Setting	Target personnel or patients	Activity	Type of PPE or procedure
<b>Healthcare facilities</b>			
<b>Inpatient facilities</b>			
Patient room	Healthcare workers	Providing direct care to COVID-19 patients.	Medical mask Gown Gloves Eye protection (goggles or face shield).
		Aerosol-generating procedures performed on COVID-19 patients.	Respirator N95 or FFP2 standard, or equivalent. Gown Gloves Eye protection Apron
	Cleaners	Entering the room of COVID-19 patients.	Medical mask Gown Heavy duty gloves Eye protection (if risk of splash from organic material or chemicals). Boots or closed work shoes
	Visitors <sup>b</sup>	Entering the room of a COVID-19 patient	Medical mask Gown Gloves
Other areas of patient transit (e.g., wards, corridors).	All staff, including healthcare workers.	Any activity that does not involve contact with COVID-19 patients.	No PPE required
Triage	Healthcare workers	Preliminary screening not involving direct contact <sup>c</sup> .	Maintain spatial distance of at least 1 m. No PPE required
	Patients with respiratory symptoms.	Any	Maintain spatial distance of at least 1 m. Provide medical mask if tolerated by patient.
	Patients without respiratory symptoms.	Any	No PPE required
Laboratory	Lab technician	Manipulation of respiratory samples.	Medical mask Gown Gloves Eye protection (if risk of splash)
Administrative areas	All staff, including healthcare workers.	Administrative tasks that do not involve contact with COVID-19 patients.	No PPE required

<b>Outpatient facilities</b>			
Consultation room	Healthcare workers	Physical examination of patient with respiratory symptoms.	Medical mask Gown Gloves Eye protection
	Healthcare workers	Physical examination of patients without respiratory symptoms.	PPE according to standard precautions and risk assessment.
	Patients with respiratory symptoms.	Any	Provide medical mask if tolerated.
	Patients without respiratory symptoms.	Any	No PPE required
	Cleaners	After and between consultations with patients with respiratory symptoms.	Medical mask Gown Heavy duty gloves Eye protection (if risk of splash from organic material or chemicals). Boots or closed work shoes
Waiting room	Patients with respiratory symptoms.	Any	Provide medical mask if tolerated.  Immediately move the patient to an isolation room or separate area away from others; if this is not feasible, ensure spatial distance of at least 1 m from other patients.
	Patients without respiratory symptoms.	Any	No PPE required
Administrative areas	All staff, including healthcare workers.	Administrative tasks	No PPE required
Triage	Healthcare workers	Preliminary screening not involving direct contact <sup>c</sup> .	Maintain spatial distance of at least 1 m. No PPE required
	Patients with respiratory symptoms.	Any	Maintain spatial distance of at least 1 m. Provide medical mask if tolerated.
	Patients without respiratory symptoms.	Any	No PPE required
<b>Community</b>			
Home	Patients with respiratory symptoms.	Any	Maintain spatial distance of at least 1 m. Provide medical mask if tolerated, except when sleeping.
	Caregiver	Entering the patient's room, but not providing direct care or assistance.	Medical mask
	Caregiver	Providing direct care or when handling stool, urine or waste from COVID-19 patient being cared for at home.	Gloves Medical mask Apron (if risk of splash)
	Healthcare workers	Providing direct care or assistance to a COVID-19 patient at home	Medical mask Gown Gloves Eye protection
Public areas (e.g., schools, shopping malls, train stations).	Individuals without respiratory symptoms	Any	No PPE required

<b>Points of entry</b>			
Administrative areas	All staff	Any	No PPE required
Screening area	Staff	First screening (temperature measurement) not involving direct contact <sup>c</sup> .	Maintain spatial distance of at least 1 m. No PPE required
	Staff	Second screening (i.e., interviewing passengers with fever for clinical symptoms suggestive of COVID-19 disease and travel history).	Medical mask Gloves
	Cleaners	Cleaning the area where passengers with fever are being screened.	Medical mask Gown Heavy duty gloves Eye protection (if risk of splash from organic material or chemicals). Boots or closed work shoes
Temporary isolation area	Staff	Entering the isolation area, but not providing direct assistance.	Maintain spatial distance of at least 1 m. Medical mask Gloves
	Staff, healthcare workers	Assisting passenger being transported to a healthcare facility.	Medical mask Gown Gloves Eye protection
	Cleaners	Cleaning isolation area	Medical mask Gown Heavy duty gloves Eye protection (if risk of splash from organic material or chemicals). Boots or closed work shoes
Ambulance or transfer vehicle	Healthcare workers	Transporting suspected COVID-19 patients to the referral healthcare facility.	Medical mask Gowns Gloves Eye protection
	Driver	Involved only in driving the patient with suspected COVID-19 disease and the driver's compartment is separated from the COVID-19 patient.	Maintain spatial distance of at least 1 m. No PPE required
		Assisting with loading or unloading patient with suspected COVID-19 disease.	Medical mask Gowns Gloves Eye protection
		No direct contact with patient with suspected COVID-19, but no separation between driver's and patient's compartments.	Medical mask
	Patient with suspected COVID-19 disease.	Transport to the referral healthcare facility.	Medical mask if tolerated
	Cleaners	Cleaning after and between transport of patients with suspected COVID-19 disease to the referral healthcare facility.	Medical mask Gown Heavy duty gloves Eye protection (if risk of splash from organic material or chemicals). Boots or closed work shoes

Special considerations for rapid response teams assisting with public health investigations <sup>d</sup>			
Community			
Anywhere	Rapid response team investigators.	Interview suspected or confirmed COVID-19 patients or their contacts.	No PPE if done remotely (e.g., by telephone or video conference).  Remote interview is the preferred method.
		In-person interview of suspected or confirmed COVID-19 patients without direct contact.	Medical mask Maintain spatial distance of at least 1 m.  The interview should be conducted outside the house or outdoors, and confirmed or suspected COVID-19 patients should wear a medical mask if tolerated.
		In-person interview with asymptomatic contacts of COVID-19 patients.	Maintain spatial distance of at least 1 m. No PPE required  The interview should be performed outside the house or outdoors. If it is necessary to enter the household environment, use a thermal imaging camera to confirm that the individual does not have a fever, maintain spatial distance of at least 1 m and do not touch anything in the household environment.

<sup>a</sup> In addition to using the appropriate PPE, frequent hand hygiene and respiratory hygiene should always be performed. PPE should be discarded in an appropriate waste container after use, and hand hygiene should be performed before putting on and after taking off PPE.

<sup>b</sup> The number of visitors should be restricted. If visitors must enter a COVID-19 patient's room, they should be provided with clear instructions about how to put on and remove PPE and about performing hand hygiene before putting on and after removing PPE; this should be supervised by a healthcare worker.

<sup>c</sup> This category includes the use of no-touch thermometers, thermal imaging cameras, and limited observation and questioning, all while maintaining a spatial distance of at least 1 m.

<sup>d</sup> All rapid response team members must be trained in performing hand hygiene and how to put on and remove PPE to avoid self-contamination.

For PPE specifications, refer to WHO's novel coronavirus (COVID-19) disease commodity packages at <https://www.who.int/emergencies/what-we-do/prevention-readiness/disease-commodity-packages/dcp-ncov.pdf?ua=1>.

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# Health workers exposure risk assessment and management in the context of COVID-19 virus

Interim guidance  
4 March 2020



Coronavirus disease (COVID-19) was first detected in Wuhan city, China in December 2019. On 30 January 2020, the WHO Director General declared that the current outbreak constituted a Public Health Emergency of International Concern.

Current available evidence is that the COVID-19 virus is transmitted between people through close contact and droplets. People most at risk of infection are those who are in contact with a COVID-19 patient and/or who care for COVID-19 patients. This inevitably places health workers at a high risk of infection.

## Target audience:

This tool is to be used by health care facilities that have either cared for or admitted COVID-19 patients. This form is to be completed for all health workers who have been exposed to a confirmed COVID-19 patient in a health care facility. It is intended to be an operational tool used by health care facilities once a COVID-19 patient has been identified within the facility. This tool will help determine the risk of COVID-19 virus infection of all HCWs who have been exposed to a COVID-19 patient and then provides recommendations for appropriate management of these HCWs, according to their infection risk.

## Objectives:

1. To determine the risk categorization of each HCW after exposure to a COVID-19 patient (see below Part 1: COVID-19 virus exposure risk assessment form for HCWs);
2. To inform the management of the exposed HCWs based on risk (see below Part 2: Management of health worker exposed to COVID-19 virus).

## Part 1: COVID-19 virus assessment of risk of exposure for health workers in health care facilities

Protecting HCWs is of paramount importance to WHO. Understanding HCW exposure to COVID-19 virus and how this translates into risk of infection is critical for informing infection prevention and control (IPC) recommendations. The data that will be captured using this data collection form and risk assessment tool can be used to identify IPC breaches and define policy to mitigate health worker and nosocomial infection. As such, health care facilities using the following risk assessment are encouraged to share deidentified data with WHO to inform discussions about WHO guidance related to IPC. That is, any data shared with WHO should not include any personally identifiable information (Questions 2A, 2B and 2G).

1. Interviewer information	
A. Interviewer name:	
B. Interviewer date (DD/MM/YYYY):	___/___/___
C. Interviewer phone number:	
D. Does the health worker have a history of staying in the same household or classroom environment with a confirmed COVID-19 patient?	<input type="checkbox"/> Yes <input type="checkbox"/> No
E. Does the HCW have history of traveling together in close proximity (within 1 meter) with a confirmed COVID-19 patient in any kind of conveyance?	<input type="checkbox"/> Yes <input type="checkbox"/> No

*If the HCW answers yes for questions 1 D – 1E it is considered a community exposure to COVID-19 virus and health workers should be managed as such. The management recommendations in Part 2: Management of health workers exposed to COVID-19 virus apply only to health care-related exposure.*

2. Health worker information	
A. Last name:	
B. First name:	
C. Age	
D. Sex:	<input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Prefer not to answer
E. City:	
F. Country:	
G. Contact details:	
H. Type of health care personnel:	<input type="checkbox"/> Medical doctor <input type="checkbox"/> Physician assistant <input type="checkbox"/> Registered nurse (or equivalent) <input type="checkbox"/> Assistant nurse, nurse technician (or equivalent) <input type="checkbox"/> Radiology /x-ray technician <input type="checkbox"/> Phlebotomist <input type="checkbox"/> Ophthalmologist <input type="checkbox"/> Physical therapist <input type="checkbox"/> Respiratory therapist <input type="checkbox"/> Nutritionist/dietitian <input type="checkbox"/> Midwife <input type="checkbox"/> Pharmacist <input type="checkbox"/> Pharmacy technician or dispenser

	<input type="checkbox"/> Laboratory personnel <input type="checkbox"/> Admission/reception clerk <input type="checkbox"/> Patient transporter <input type="checkbox"/> Catering staff <input type="checkbox"/> Cleaner <input type="checkbox"/> Other (specify):
I. Health care facility unit type in which the health worker works?	<i>Tick all that apply:</i> <input type="checkbox"/> Outpatient <input type="checkbox"/> Emergency <input type="checkbox"/> Medical unit <input type="checkbox"/> Intensive care unit <input type="checkbox"/> Cleaning services <input type="checkbox"/> Laboratory <input type="checkbox"/> Pharmacy <input type="checkbox"/> Other, specify:
<b>3. Health worker interactions with COVID-19 patient information</b>	
A. Date of health worker first exposure to confirmed COVID-19 patient:	Date (DD/MM/YYYY): __/__/____ <input type="checkbox"/> Not known
B. Name of health care facility where case received care:	
C. Type of health care setting:	<input type="checkbox"/> Hospital <input type="checkbox"/> Outpatient clinic <input type="checkbox"/> Primary health centre <input type="checkbox"/> Home care for mild cases <input type="checkbox"/> Other:
D. City:	
E. Country:	
F. Multiple COVID-19 patients in health care facility	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown Number of patients (approximate if exact number not known):

<b>4. Health worker activities performed on COVID-19 patient</b>	
A. Did you provide direct care to a confirmed COVID-19 patient?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
B. Did you have face-to-face contact (within 1 meter) with a confirmed COVID-19 patient in a health care facility?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
C. Were you present when any aerosol generating procedures (AGP) was performed on the patient? <i>See below for examples</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
- If yes, what type of AGP procedure?	<input type="checkbox"/> Tracheal intubation <input type="checkbox"/> Nebulizer treatment <input type="checkbox"/> Open airway suctioning <input type="checkbox"/> Collection of sputum <input type="checkbox"/> Tracheostomy <input type="checkbox"/> Bronchoscopy <input type="checkbox"/> Cardiopulmonary resuscitation (CPR) <input type="checkbox"/> Other, specify:



D. Did you have direct contact with the environment where the confirmed COVID-19 patient was cared for? E.g. bed, linen, medical equipment, bathroom etc.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
E. Were you involved with health care interaction(s) (paid or unpaid) in another health care facility during the period above?	<input type="checkbox"/> Other health care facility (public or private) <input type="checkbox"/> Ambulance <input type="checkbox"/> Home care <input type="checkbox"/> No other health care facility

#### Exposure of health workers to COVID-19 virus

If the health worker responds 'Yes' to any of the Questions 4A – 4C, the health worker should be considered as being **exposed to COVID-19 virus**

5. Adherence to infection prevention and control (IPC) during health care interactions	
For the following questions, please quantify the frequency you wore PPE, as recommended: 'Always, as recommended' should be considered wearing the PPE when indicated more than 95% of the time; 'Most of the time' should be considered 50% or more but not 100%; 'occasionally' should be considered 20% to under 50% and 'Rarely' should be considered less than 20%.	
A. During the period of a health care interaction with a COVID-19 patient, did you wear personal protective equipment (PPE)?	<input type="checkbox"/> Yes <input type="checkbox"/> No
- If yes, for each item of PPE below, indicate how often you used it:	
- 1. Single gloves	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time (50% or more but not 100%) <input type="checkbox"/> Occasionally 20% to under 50% <input type="checkbox"/> Rarely (less than 20% of the time)
- 2. Medical mask	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely
- 3. Face shield or goggles/protective glasses	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely
- 4. Disposable gown	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely
B. During the period of health care interaction with the COVID-19 patient, did you remove and replace your PPE according to protocol (e.g. when medical mask became wet, disposed the wet PPE in the waste bin, performed hand hygiene, etc)?	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely
C. During the period of health care interaction with the COVID-19 case, did you perform hand hygiene before and after touching the COVID-19 patient? NB: Irrespective of wearing gloves	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely
D. During the period of health care interaction with the COVID-19 case, did you perform hand hygiene	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time

before and after any clean or aseptic procedure was performed (e.g. inserting: peripheral vascular catheter, urinary catheter, intubation, etc.)?	<input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely
E. During the period of health care interaction with the COVID-19 case, did you perform hand hygiene after exposure to body fluid?	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely
F. During the period of health care interaction with the COVID-19 case, did you perform hand hygiene after touching the COVID-19 patient's surroundings (bed, door handle, etc)? Note: this is irrespective of wearing gloves	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely
G. During the period of health care interaction with the COVID-19 case, were high touch surfaces decontaminated frequently (at least three times daily)?	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely

**6. Adherence to infection prevention and control (IPC) when performing aerosol generating procedures (e.g. Tracheal intubation, nebulizer treatment, open airway suctioning, collection of sputum, tracheostomy, bronchoscopy, cardiopulmonary resuscitation (CPR) etc.)**

For the following questions, please quantify the frequency you wore PPE, as recommended: 'Always, as recommended' should be considered wearing the PPE when indicated more than 95% of the time; 'Most of the time' should be considered 50% or more but not 100%; 'occasionally' should be considered 20% to under 50% and 'Rarely' should be considered less than 20%.

A. During aerosol generating procedures on a COVID-19 patient, did you wear personal protective equipment (PPE)?	<input type="checkbox"/> Yes <input type="checkbox"/> No
- If yes, for each item of PPE below, indicate how often you used it:	
- 1. Single gloves	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely
- 2. N95 mask (or equivalent respirator)	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely
- 3. Face shield or goggles/protective glasses	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely
- 4. Disposable gown	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely
- 5. Waterproof apron	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely

B. During aerosol generating procedures on the COVID-19 patient, did you remove and replace your PPE according to protocol (e.g. when medical mask became wet, disposed the wet PPE in the waste bin, performed hand hygiene, etc)?	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely
C. During aerosol generating procedures on the COVID-19 case, did you perform hand hygiene before and after touching the COVID-19 patient? NB: Irrespective of wearing gloves	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely
D. During aerosol generating procedures on the COVID-19 case, did you perform hand hygiene before and after any clean or aseptic procedure was performed (e.g. inserting: peripheric vascular catheter, urinary catheter, intubation, etc.)?	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely
E. During aerosol generating procedures on the COVID-19 case, did you perform hand hygiene after touching the COVID-19 patient's surroundings (bed, door handle, etc)? Note: This is irrespective of wearing gloves	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely
F. During aerosol generating procedures on the COVID-19 case, were high touch surfaces decontaminated frequently (at least three times daily)?	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely

#### 7. Accidents with biological material

A. During the period of a health care interaction with a COVID-19 infected patient, did you have any episode of accident with biological fluid/respiratory secretions? <i>See below for examples</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No
- If yes, which type of accident?	<input type="checkbox"/> Splash of biological fluid/respiratory secretions in the mucous membrane of eyes <input type="checkbox"/> Splash of biological fluid/respiratory secretions in the mucous membrane of mouth/nose <input type="checkbox"/> Splash of biological fluid/respiratory secretions on non-intact skin <input type="checkbox"/> Puncture/sharp accident with any material contaminated with biological fluid/respiratory secretions

## Risk categorization of health workers exposed to COVID-19 virus

### High risk for COVID-19 infection

The health worker did not respond 'Always, as recommended' to Questions:

- 5A1 – 5G, 6A – 6F
- AND/OR responded 'Yes' to 7A.

All other health workers should be considered **low risk for COVID-19 virus infection**.

## Part 2: Management of health workers exposed to COVID-19 virus

The management of health workers exposed to COVID-19 virus will vary according to the Risk categorization of health workers exposed to COVID-19 virus, as determined in Part 1.

### Recommendations for health workers with high risk for infection:

- Stop all health care interaction with patients for a period of 14 days after the last day of exposure to a confirmed COVID-19 patient;
- Be tested for COVID-19 virus infection;
- Quarantine for 14 days in a designated setting.<sup>1</sup>

Health care facilities should:

- Provide psychosocial support to HCW during quarantine, or duration of illness if HCW becomes a confirmed COVID-19 case;
- Provide compensation for the period of quarantine and for the duration of illness (if not on a monthly salary) or contract extension for duration of quarantine/illness;
- Refresher infection prevention and control training for the health care facility staff, including HCWs at high risk for infection once he/she returns to work at the end of the 14-day period.

### Recommendations for health workers with low risk for COVID-19 infection:

- Self-monitor temperature and respiratory symptoms daily for 14 days after the last day of exposure to a COVID-19 patient. HCWs should be advised to call health care facility if he/she develop any symptoms suggestive of COVID-19;
- Reinforce contact and droplet precautions when caring for all patients with acute respiratory illness<sup>2</sup> and standard precautions to take care of all patients;
- Reinforce airborne precautions for aerosol generating procedures on all suspect and confirmed COVID-19 patients;

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<sup>1</sup> WHO Considerations for quarantine of individuals in the context of containment for coronavirus disease (COVID-19): Interim guidance 28 February 2020 ([https://www.who.int/publications-detail/considerations-for-quarantine-of-individuals-in-the-context-of-containment-for-coronavirus-disease-\(covid-19\)](https://www.who.int/publications-detail/considerations-for-quarantine-of-individuals-in-the-context-of-containment-for-coronavirus-disease-(covid-19))).

<sup>2</sup> WHO Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected: Interim guidance 25 January 2020 ([https://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-\(ncov\)-infection-is-suspected-20200125](https://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-(ncov)-infection-is-suspected-20200125)).

- Reinforce the rational, correct and consistent use of personal protective equipment when exposed to confirmed COVID-19 patients;<sup>3</sup>
- Apply WHO's "My 5 Moments for Hand Hygiene" before touching a patient, before any clean or aseptic procedure, after exposure to body fluid, after touching a patient, and after touching patient's surroundings;<sup>4</sup>
- Practice respiratory etiquette at all times.

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WHO reference number: [WHO/2019-nCov/HCW\\_risk\\_assessment/2020.1](#)

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<sup>3</sup> WHO Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected: Interim guidance 25 January 2020 ([https://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-\(ncov\)-infection-is-suspected-20200125](https://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-(ncov)-infection-is-suspected-20200125)).

<sup>4</sup> WHO guidelines on hand hygiene in health care: first global patient safety challenge – clean care is safer care. Geneva: World Health Organization; 2009 (<https://apps.who.int/iris/handle/10665/44102>).

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**GOVERNMENT NOTICE**

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**DEPARTMENT OF EMPLOYMENT AND LABOUR**

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No. R.

2020

**COMPENSATION FOR OCCUPATIONAL INJURIES AND  
DISEASES ACT, 1993 (ACT NO 130 OF 1993)**

**NOTICE ON COMPENSATION FOR OCCUPATIONALLY-ACQUIRED NOVEL CORONA  
VIRUS DISEASE (COVID-19) UNDER COMPENSATION FOR OCCUPATIONAL INJURIES  
AND DISEASES ACT, 130 of 1993 AS AMENDED**

1. I, Vuyo Mafata, Compensation Commissioner, after consultation with the Compensation Executive Committee, hereby make the following notice in terms of Section 6A of the Compensation for Occupational Injuries and Diseases Act, 1993 (Act No 130 of 1993) as amended. The proposed notice is attached as Schedule A.

**SCHEDULE**

2. The notice for compensation of occupationally-acquired novel Corona virus disease (Covid-19) comes into effect on the date of publication hereof and shall be implemented with immediate effect thereon.
3. All employers and Medical Service Providers must follow the stipulated prescripts when submitting claims and supporting medical reports for Covid-19.
4. When submitting reports online through the CompEasy system or Mutual Association Claims systems, Medical Service Providers must use the emergency Covid-19 ICD-10 code: **U07.1** as proposed by the World Health Organization (WHO).



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**VUYO MAFATA**

**COMPENSATION COMMISSIONER**

**DATE:** 2020/03/20

**NOTICE ON COMPENSATION FOR OCCUPATIONALLY-ACQUIRED NOVEL  
CORONA VIRUS DISEASE (COVID-19)**

**SCHEDULE A**

**Circular No. CF/03/2020**

**NOTICE ON COMPENSATION FOR OCCUPATIONALLY-ACQUIRED NOVEL CORONA  
VIRUS DISEASE (COVID-19)**

**COMPENSATION FOR OCCUPATIONAL INJURIES AND DISEASES ACT, 1993 (NO. 130  
OF 1993) AS AMENDED.**

The following notice is issued to clarify the position of the Compensation Fund with regard to compensation of claims for Covid-19.

**1. Acronyms**

COID Act	Compensation for Occupational Injuries and Diseases Act, 130 of 1993
Covid-19	Novel Corona Virus Disease of 2019
DOH	Department of Health, South Africa
WHO	World Health Organization
ILO	International Labour Organization
SARS-Cov-2	Severe Acute Respiratory Syndrome Corona Virus 2
RNA	Ribonucleic Acid

**2. Definition**

Coronavirus Disease (COVID-19) is a viral infection of the upper respiratory system which presents with flu-like symptoms ranging from mild fever, dry cough, runny nose, sneezing to moderate and severe symptoms like productive cough, high fever, shortness of breath and general malaise. In its severe form it can present with pneumonia, cough with haemoptysis and respiratory failure. It is transmitted through droplets suspended in the air during coughing and sneezing from an infected source.

Occupationally-acquired COVID-19 is a disease contracted by an employee as defined in the COID Act arising out of and in the course of his or her employment. This notice deals with occupationally-acquired COVID-19 resulting from single or multiple exposures to confirmed case(s) of COVID-19 in the workplace or after an official trip to high-risk countries or areas in a

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previously COVID-19-free individual.

A claim for occupationally-acquired COVID-19 shall clearly be set out as contemplated in and provided for in sections 65 and 66 of the COID Act.

### **3. Diagnosis**

#### **3.1. Occupationally-acquired COVID-19 diagnosis relies on:**

- a) Occupational exposure to a known source of COVID-19;
- b) A reliable diagnosis of COVID-19 as per the WHO guidelines;
- c) An approved official trip and travel history to countries and/or areas of high risk for COVID-19 on work assignment;
- d) A presumed high-risk work environment where transmission of COVID-19 is inherently prevalent; and
- e) A chronological sequence between the work exposure and the development of symptoms.

#### **3.2. COVID-19 can be reliably diagnosed by:**

- a) Sputum, nasopharyngeal or oropharyngeal swab specimen collected from all patients at admission tested by real time polymerase chain reaction (PCR) for SARS-Cov-2 RNA performed within three hours of collection.

#### **3.3. Occupations at Risk:**

##### **3.3.1. Very high exposure risk occupations**

Very high exposure risk jobs are those with high potential for exposure to known or suspected sources of COVID-19 during specific medical, post mortem, or laboratory procedures. Workers in this category include:

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



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COVID-19 patients).

- c) 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.

### **3.3.2. High exposure risk occupations**

High exposure risk jobs are those with high potential for exposure to known or suspected sources of COVID-19. Workers in this category include:

- a) 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.)

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

### **3.3.3. Medium exposure risk occupations**

Medium exposure risk jobs include those 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).

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### **3.3.4. Low exposure risk occupations**

Lower exposure risk (caution) jobs are those that do not require contact with people known to be, or suspected of being infected with Covid-19, nor frequent close contact with (i.e. within 2 meter of) the general public. Workers in this category have minimal occupational contact with the public and other co-workers.

**3.3.5.** The Medical Officers in the Compensation Fund will determine whether the diagnosis of Covid-19 was made according to acceptable medical standards.

## **4. Impairment**

**4.1.** Assessment of permanent impairment shall be determined three months after diagnosis and when Maximum Medical Improvement (MMI) has been reached.

**4.2.** The degree of impairment will be evaluated based on the complications of the Covid-19 from the affected body system(s).

## **5. Benefits**

### **5.1. Temporary total disablement (TTD)**

a) Payment for temporary total disablement shall be made for as long as such disablement continues, but not for a period exceeding 30 days.

#### **5.1.1. Suspected and Unconfirmed Cases**

a) For self-quarantine recommended by registered Medical Practitioner in accordance with the DOH/WHO/ILO guidelines, the employer will be liable for remuneration for days of absence.

#### **5.1.2. Confirmed Cases**

a) For confirmed cases and where the Compensation Fund has accepted liability, temporary total disablement shall be paid from the date of diagnosis up to 30 days.

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- b) In an event where there are complications, the Commissioner has a right to review the case.

### **5.2. Permanent Disablement:**

In an event where there are complications the Commissioner has a right to assess each case on merit and determine if there is any permanent disablement.

### **5.3. Medical Aid**

In all accepted cases of COVID-19, medical aid shall be provided for a period of not more than 30 days from the date of diagnosis. If in the opinion of the Director-General further medical aid will reduce the extent of the disablement this shall be considered.

### **5.4. Death Benefits**

Reasonable burial expenses, widow's and dependent's pensions shall be payable, where applicable, if an employee dies as a result of the complications of COVID-19.

## **6. Reporting**

**6.1. The following documentation should be submitted to the Compensation Commissioner or the employer individually liable or the mutual association concerned:**

- a) Employer's Report of an Occupational Disease (W.CL.1)
- b) Notice of an Occupational Disease and Claim for Compensation (W.CL.14)
- c) Exposure and Medical Questionnaire
- d) First Medical Report in respect of an Occupational Disease (W.CL.22) indicating U07.1 as the ICD-10 code for Covid-19
- e) Exposure History (W.CL. 110) and/or any other appropriate employment history which may include any information that may be helpful to the Compensation Commissioner.

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- f) A medical report on the employee's symptoms that details the history, establishes a diagnosis of COVID-19 and laboratory results and chest radiographs where appropriate or any other information relevant to the claim.
- g) For each consultation, a Progress Medical Report (W.CL. 26).
- h) Final Medical Report in respect of an Occupational Disease (W.CL.26) when the employee's condition has reached Maximum Medical Improvement (MMI).
- i) An affidavit by the employee if employer cannot be traced or will not timeously supply a W.CL.1, where applicable.

### **6.2. Online claims for Covid-19 must be made through the following channels, indicating the correct ICD-10 code – U07.1:**

**Compensation Fund: CompEasy ([www.labour.gov.za](http://www.labour.gov.za))**

**Rand Mutual Assurance: CompCare ([www.randmutual.co.za](http://www.randmutual.co.za))**

**Federated Employers Mutual: IMS (<https://roe.fem.co.za>)**

### **6.3. Submission of manual claims for COVID-19 must be sent to these email addresses:**

**Compensation Fund: [covid19claims@labour.gov.za](mailto:covid19claims@labour.gov.za) or phone 0860 105 350**

**Rand Mutual Assurance: [contactcentre@randmutual.co.za](mailto:contactcentre@randmutual.co.za) or phone 086 022 2132**

**Federated Employers Mutual: [FEM-Registry@fema.co.za](mailto:FEM-Registry@fema.co.za) or phone 011 359 4300**

## **7. Claims Processing**

The Office of the Compensation Commissioner shall consider and adjudicate upon the liability of all claims. The Medical Officers in the Compensation Commissioners' Office are responsible for medical assessment of the claim and for the confirmation of the acceptance or rejection of the claim.

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## employment & labour

Department:  
Employment and Labour  
REPUBLIC OF SOUTH AFRICA

Compensation Fund, Delta Heights Building 167 Thabo Sehume Street, Pretoria 0001  
Tel: 0860 105 350 | Email address: [covid19claims@labour.gov.za](mailto:covid19claims@labour.gov.za) [www.labour.gov.za](http://www.labour.gov.za)

### COVID-19 EXPOSURE AND MEDICAL QUESTIONNAIRE (To be completed by employer):

#### Employee details

Name and Surname	
Contact Number	
Nationality	
ID Number	
Email Address	
Occupation	

#### Employer details

Name of Employer				
Industry/Sector				
Province				
Contact person				
Contact details	Email		Phone No.	

#### EXPOSURE HISTORY:

Has the Employee travelled to any high risk countries/areas? Yes / No

If Yes

Area Travelled To	
Date Travelled	
Length of Stay	
Reason for Travel	





## employment & labour

Department:  
Employment and Labour  
REPUBLIC OF SOUTH AFRICA

Compensation Fund, Delta Heights Building 167 Thabo Sehume Street, Pretoria 0001  
Tel: 0860 105 350 | Email address: [covid19claims@labour.gov.za](mailto:covid19claims@labour.gov.za) [www.labour.gov.za](http://www.labour.gov.za)

If No, has the employee been exposed to a confirmed occupationally-exposed case in the workplace Yes / No, If Yes

Date of Contact		
Contact Reported?	Yes	No
Period of Exposure		
Cases on quarantine in area of work		
Total confirmed cases in the workplace		

### MEDICAL HISTORY:

Does the employee suffer from any pre-existing medical conditions? Yes/No

Has the employee been diagnosed with any other occupational disease? Yes/No

If Yes to any of the above, please check all that apply or specify in the box below:

Medical Condition				
	Pregnancy (trimester: _____)		Post-partum (< 6 weeks)	
	Cardiovascular disease, including hypertension		Immunodeficiency, including HIV	
	Diabetes		Renal disease	
	Liver disease		Chronic lung disease	
	Chronic neurological or neuromuscular disease		Malignancy	
	Other(s), please specify:			
Medical Condition		Year of Diagnosis	On Treatment?	
Pre-existing conditions:			Yes	No
Occupational diseases:			Yes	No

Name	Signature	Date

