



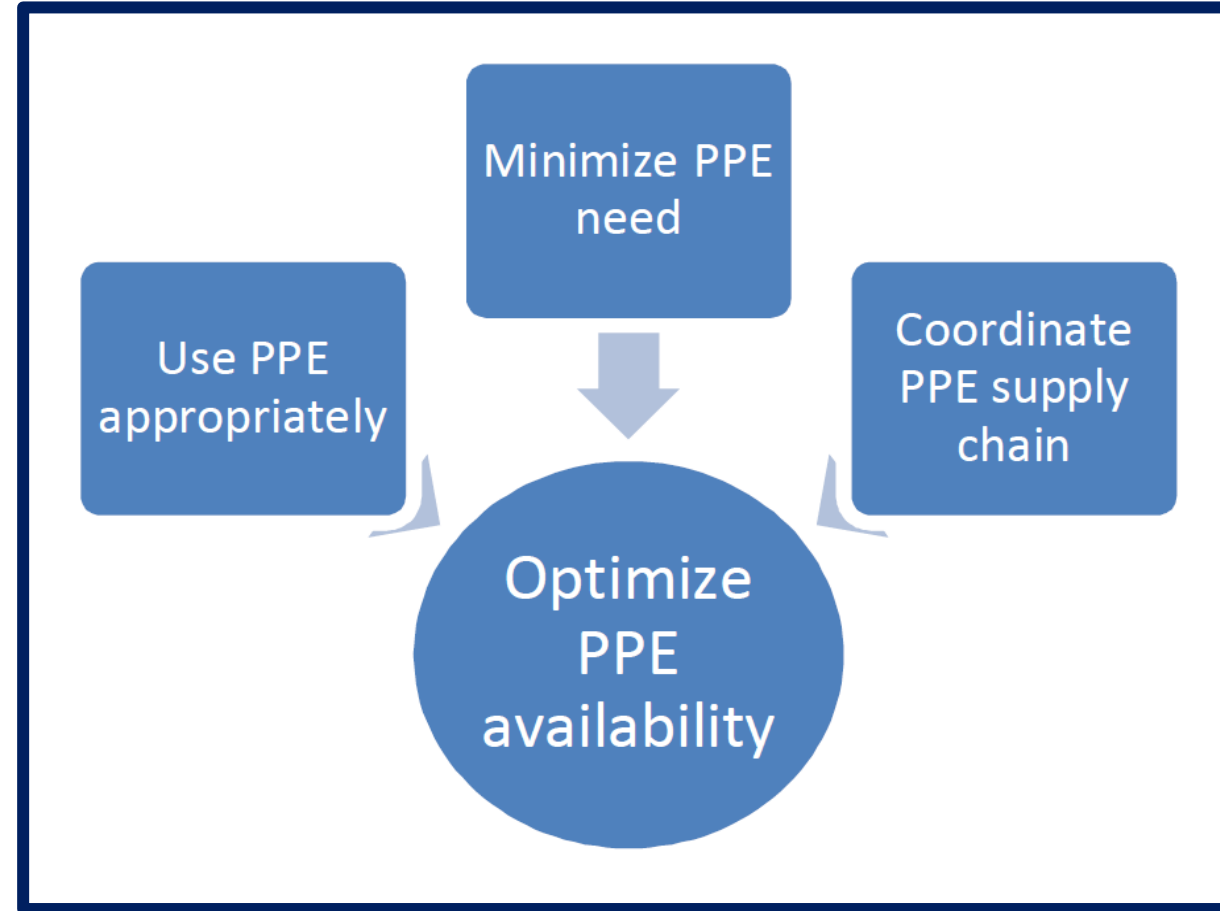
Ministry of Health
Malaysia

**RECOMMENDED PPE
TO BE USED
WHEN MANAGING
PATIENT UNDER
INVESTIGATION (PUI)/
CONFIRMED COVID-19 IN
HEALTHCARE FACILITIES**

Medical Programme
Ministry of Health
21 April 2020

RECOMMENDATIONS FOR OPTIMIZING THE AVAILABILITY OF PPE

In View of the Global PPE Shortage, the Following Strategies Can Facilitate Optimal PPE Availability



Source: World Health Organization, Rational use of personal protective equipment (PPE) for coronavirus disease (COVID-19) and considerations during severe shortages, Interim guidance, 6 April 2020.

INDICATION FOR PPE SHOULD BE BASED ON THE:

- Setting
- Target Audience
- Risk of Exposure (Type of Activities)
- Transmission of the Pathogen
(Contact, Droplet or Aerosol)
- Due to **limited supply** of surgical/medical grade N95 respirators, all HCW must use **face shield** when wearing KN95 and N95 that are not listed as surgical/medical grade

HEALTHCARE FACILITY

SETTING: ANY AREAS IN HEALTHCARE FACILITY

TARGET: HEALTHCARE WORKER

ACTIVITY

Direct contact with **any patient**
(Non PUI/COVID-19 patient OR
patient without respiratory
symptoms)

TYPE OF PPE

- 1) Surgical mask
- 2) Frequent hand hygiene



EMERGENCY DEPARTMENT

SETTING: PRIMARY TRIAGE

TARGET: HEALTHCARE WORKER



ACTIVITY

Involved in triaging patients

Maintain **more than 1** metre spatial distance at all times

* May use physical barriers (such as glass or plastic windows or **face shield**) to reduce exposure

TYPE OF PPE

- 1) Surgical mask
- 2) Frequent hand hygiene

* Full PPE set must be made available at the site in case of emergency

EMERGENCY DEPARTMENT

SETTING: SECONDARY TRIAGE / EXAMINATION ROOM/ CONSULTATION ROOM

TARGET: HEALTHCARE WORKER



ACTIVITY

History taking and physical examination

Patient should be reminded to **wear** a **surgical mask** when the HCW enters the room /cubicle /triage examination area.

TYPE OF PPE

- 1) Surgical mask
- 2) Isolation Gown (fluid-repellent long-sleeved gown) OR long-sleeved plastic apron
- 3) Gloves
- 4) Eye Protection (face shield /goggles)

Boot cover / shoe cover (**ONLY** when **anticipating spillage** and vomiting)

EMERGENCY DEPARTMENT

**SETTING: EXAMINATION ROOM/
CONSULTATION ROOM**

TARGET: CLEANER

ACTIVITY

**Cleaning the examination room /
consultation room**

*** Increase frequency of cleaning
for frequently touched surfaces**

TYPE OF PPE

- 1) Surgical mask
- 2) Long-sleeved plastic apron
- 3) Gloves
- 4) Eye Protection (face shield /goggles)
- 5) Boots or closed shoes



EMERGENCY DEPARTMENT

**SETTING: AMBULANCE TRANSFER
VEHICLE (PUI/CONFIRMED COVID-19)**

TARGET: AMBULANCE DRIVER



ACTIVITY

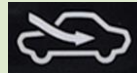
Involved in **driving** the PUI / confirmed COVID-19 **BUT NO** direct contact with patient

Also involved in **loading and unloading** patients

Always maintain at foot end of stretcher

❖ **Windows** should be kept **OPEN throughout** the drive (about 3cm only)

❖ **Use aircond** with **fresh air intake**



TYPE OF PPE

- 1) Surgical mask
- 2) Isolation Gown (fluid-repellent long-sleeved gown)
- 3) Gloves
- 4) Eye Protection (face shield /goggles)



EMERGENCY DEPARTMENT

SETTING: AMBULANCE TRANSFER VEHICLE (PUI/CONFIRMED COVID-19)

TARGET: HEALTHCARE WORKER

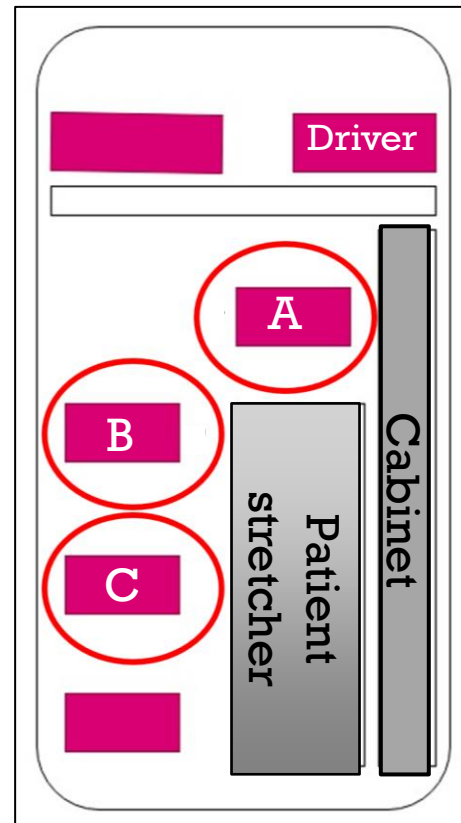


Figure 1: Ambulance

ACTIVITY	TYPE OF PPE
<p>Transporting PUI / confirmed COVID-19 patient to the referral health care facility</p> <p>Healthcare worker seating arrangement(Figure 1):</p> <p>A & B :When patient is not in distressed</p> <p>C :When patient requires oxygen support/ intervention</p>	<ol style="list-style-type: none"> 1) N95 mask 2) Isolation Gown (fluid-repellent long-sleeved gown) 3) Gloves 4) Eye Protection (face shield /goggles) 5) Head cover



EMERGENCY DEPARTMENT

**SETTING: AMBULANCE TRANSPORT
VEHICLE (PUI/CONFIRMED COVID-19)**

TARGET: HEALTHCARE WORKER

ACTIVITY

Decontamination of **ambulance**
that transported PUI / confirmed
COVID-19 patient

TYPE OF PPE

- 1) Surgical mask
- 2) Long-sleeved plastic apron
- 3) Gloves
- 4) Eye Protection (face shield /goggles)
- 5) Boots or closed shoes

EMERGENCY DEPARTMENT

**SETTING: PATIENT CUBICLE /
RESUSCITATION ZONE**

TARGET: HEALTHCARE WORKER



ACTIVITY

Performing Aerosol Generating Procedures (AGP) on PUI / confirmed COVID-19 patients

- Intubation, extubation and related procedures / CPR
- Tracheotomy/tracheostomy procedures
- Manual ventilation
- Suctioning
- Bronchoscopy
- Nebulization
- Others – Refer Guideline

TYPE OF PPE

Minimum Recommendation :

- 1) N95 mask
- 2) Isolation Gown (fluid-repellent long-sleeved gown) with plastic apron
- 3) Gloves
- 4) Eye Protection (face shield /goggles)
- 5) Boot cover / shoe cover
- 6) Head cover

EMERGENCY DEPARTMENT

SETTING: SPECIMEN COLLECTION AREA

TARGET: HEALTHCARE WORKER



ACTIVITY

Performing oropharyngeal or nasopharyngeal **swab**

* It is sufficient to **change gloves** and **plastic apron** between patients

Any **soiled/wet** protective **equipment** should be **changed**

TYPE OF PPE

- 1) N95 mask
- 2) Gloves*
- 3) Isolation Gown (fluid-repellent long-sleeved gown)
- 4) Long-sleeved plastic apron*
- 5) Eye protection (face shield /goggles)
- 6) Head cover

Boot cover / shoe cover (**ONLY** when **anticipating spillage** and vomiting)

IN-PATIENT FACILITY

SETTING: PATIENT ROOM (PUI/CONFIRMED COVID-19)

TARGET: HEALTHCARE WORKER



ACTIVITY

Providing care to PUI / confirmed COVID-19 patients who are **not intubated** and able to **wear surgical mask**

TYPE OF PPE

- 1) Surgical mask
- 2) Isolation Gown (fluid-repellent long-sleeved gown)
- 3) Gloves
- 4) Eye Protection(face shield /goggles)

Boot cover / shoe cover (**ONLY** when **anticipating spillage** and vomiting)



IN-PATIENT FACILITY

**SETTING: PATIENT ROOM
(PUI/CONFIRMED COVID-19)**

TARGET: HEALTHCARE WORKER

ACTIVITY

Providing care to PUI / confirmed COVID-19 patients who are **not intubated** but **NOT** able to **wear surgical mask**

TYPE OF PPE

- 1) N95 mask
- 2) Isolation Gown (fluid-repellent long-sleeved gown)
- 3) Gloves
- 4) Eye Protection(face shield /goggles)
- 5) Head cover

Boot cover / shoe cover (**ONLY** when **anticipating spillage** and vomiting)



IN-PATIENT FACILITY

**SETTING: PATIENT ROOM
(PUI/CONFIRMED COVID-19)**

TARGET: HEALTHCARE WORKER

ACTIVITY

Performing oropharyngeal or nasopharyngeal **swab** to PUI / confirmed COVID-19 patients

TYPE OF PPE

- 1) N95 mask
- 2) Isolation Gown (fluid-repellent long-sleeved gown)
- 3) Gloves
- 4) Eye Protection(face shield /goggles)
- 5) Head cover

Boot cover / shoe cover (**ONLY** when **anticipating spillage** and vomiting)

IN-PATIENT FACILITY

**SETTING: PATIENT ROOM
(PUI/CONFIRMED COVID-19)**

TARGET: HEALTHCARE WORKER



ACTIVITY

Providing care to PUI / confirmed COVID-19 patients who are **ventilated** in a closed circuit

TYPE OF PPE

- 1) N95 mask
- 2) Isolation Gown (fluid-repellent long-sleeved gown)
- 3) Gloves
- 4) Eye Protection(face shield /goggles)
- 5) Head cover

Boot cover / shoe cover (**ONLY** when **anticipating spillage** and vomiting)

IN-PATIENT FACILITY

**SETTING: PATIENT ROOM
(PUI/CONFIRMED COVID-19)**

TARGET: HEALTHCARE WORKER



ACTIVITY	TYPE OF PPE
<p>Performing Aerosol Generating Procedures (AGP) on <u>PUI / confirmed COVID-19</u> patients</p> <ul style="list-style-type: none"> • Intubation, extubation and related procedures • Tracheotomy/tracheostomy procedures • Manual ventilation • Suctioning • Bronchoscopy • Nebulization • Others – Refer Guideline 	<p>Option 1 (Preferred):</p> <ol style="list-style-type: none"> 1) PAPR 2) Isolation Gown (fluid-repellent long-sleeved gown) with plastic apron / Coverall suit 3) Gloves 4) Eye Protection (face shield /goggles) * 5) Boot cover / shoe cover <p>* Depends on type of PAPR</p>



IN-PATIENT FACILITY

**SETTING: PATIENT ROOM
(PUI/CONFIRMED COVID-19)**

TARGET: HEALTHCARE WORKER

ACTIVITY

Performing Aerosol Generating Procedures (AGP) on PUI / confirmed COVID-19 patients

- Intubation, extubation and related procedures
- Tracheotomy/tracheostomy procedures
- Manual ventilation
- Suctioning
- Bronchoscopy
- Nebulization
- Others – Refer Guideline

TYPE OF PPE

Option 2:

- 1) Coverall suit
- 2) N95 mask
- 3) Eye Protection(face shield /goggles)
- 4) Gloves
- 5) Boot cover / shoe cover



IN-PATIENT FACILITY

**SETTING: PATIENT ROOM
(PUI/CONFIRMED COVID-19)**

TARGET: HEALTHCARE WORKER

ACTIVITY

Performing Aerosol Generating Procedures (AGP) on PUI / confirmed COVID-19 patients

- Intubation, extubation and related procedures
- Tracheotomy/tracheostomy procedures
- Manual ventilation
- Suctioning
- Bronchoscopy
- Nebulization
- Others – Refer Guideline

TYPE OF PPE

Option 3 (if Option 1 & 2 not available):

- 1) N95 mask
- 2) Isolation Gown (fluid-repellent long-sleeved gown) with plastic apron
- 3) Gloves
- 4) Eye Protection (face shield /goggles)
- 5) Boot cover / shoe cover
- 6) Head cover



IN-PATIENT FACILITY

SETTING: PATIENT ROOM

TARGET: HEALTHCARE WORKER

ACTIVITY

Transporting **specimen to lab**

TYPE OF PPE

- 1) Gloves
- 2) Surgical Mask

* Plastic Apron - Optional

IN-PATIENT FACILITY

**SETTING: PATIENT ROOM
(PUI/CONFIRMED COVID-19)**

TARGET: CLEANER

ACTIVITY

Cleaning the PUI / confirmed COVID-19 patient's room; who is **not intubated** and able to **wear surgical mask**

*If COVID-19 patient is discharge, it is recommended for **cleaners** to **enter** the **room after** about **45 minutes** if the ACHR is not known

TYPE OF PPE

- 1) Surgical mask
- 2) Isolation Gown (fluid-repellent long-sleeved gown)
- 3) Gloves
- 4) Eye Protection (face shield /goggles)
- 5) Boots or closed shoes



IN-PATIENT FACILITY

**SETTING: PATIENT ROOM
(PUI/CONFIRMED COVID-19)**

TARGET: CLEANER

ACTIVITY

Cleaning the PUI / confirmed COVID-19 patient's room; who is **not intubated** but **NOT** able to wear surgical mask

*If COVID-19 patient is discharge, it is recommended for **cleaners** to **enter** the **room after** about **45 minutes** if the ACHR is not known

TYPE OF PPE

- 1) N95 mask
- 2) Isolation Gown (fluid-repellent long-sleeved gown)
- 3) Gloves
- 4) Eye Protection (face shield /goggles)
- 5) Boots or closed shoes
- 6) Head Cover



IN-PATIENT FACILITY

SETTING: LABORATORY

TARGET: HEALTHCARE WORKER



ACTIVITY

- Manipulation of respiratory samples
- Specimen handling for molecular testing would require BSL-2 or equivalent facilities.
- Handling and processing of specimens from PUI/ confirmed COVID-19 intended for additional laboratory tests, such as haematology or blood gas analysis, should apply standard precautions

TYPE OF PPE

- 1) Surgical mask
- 2) Isolation Gown (fluid-repellent long-sleeved gown)
- 3) Gloves
- 4) Eye Protection (face shield /goggles)
- 5) Boots or closed shoes



IN-PATIENT FACILITY

**SETTING: OUTSIDE PATIENT ROOM
(MORE THAN 1-2 METRES)**

**TARGET: ALL STAFF INCLUDING
HEALTHCARE WORKER**

ACTIVITY

Any activity that does **not** lead to **contact** with PUI / confirmed COVID-19

TYPE OF PPE

- 1) Surgical mask
- 2) Frequent hand hygiene



**RECOMMENDED PPE
TO BE USED
WHEN ATTENDING OR TREATING
SEVERE ACUTE RESPIRATORY
INFECTION (SARI) /
INFLUENZA LIKE ILLNESS (ILI)
PATIENT**



SEVERE ACUTE RESPIRATORY INFECTION (SARI) PATIENT

SETTING: SARI AREAS/CUBICLE

TARGET: HEALTHCARE WORKER

ACTIVITY

Providing care and able to maintain 1-2 metres spatial distance at all time

* patient should be reminded to wear a surgical mask (if tolerable)

If not tolerable, advise the patient to cover nose and mouth during coughing or sneezing with tissue or flexed elbow.

TYPE OF PPE

- 1) Surgical mask
- 2) Frequent hand hygiene

SEVERE ACUTE RESPIRATORY INFECTION (SARI) PATIENT

SETTING: SARI AREAS/CUBICLE

TARGET: HEALTHCARE WORKER



ACTIVITY

Providing care and **UNABLE** to maintain 1-2 metres **spatial distance** at all time

* **patient** should be reminded to wear a **surgical mask**
If **not tolerable**, advise the **patient** to **cover nose and mouth** during **coughing or sneezing** with tissue or flexed elbow.

TYPE OF PPE

- 1) Surgical mask
- 2) Gloves
- 3) Long-sleeved plastic apron

* Eye protection (face shield / goggles) – when **anticipating** patient's **respiratory secretion**

SEVERE ACUTE RESPIRATORY INFECTION (SARI) PATIENT

SETTING: SARI AREAS/CUBICLE

TARGET: HEALTHCARE WORKER



ACTIVITY

Performing Aerosol Generating Procedures (AGP)

- High-flow mask oxygen
- Intubation
- Suctioning
- Nebulization
- CPR

Also when performing
oropharyngeal or
nasopharyngeal swab

TYPE OF PPE

- 1) N95 mask
- 2) Gloves
- 3) Isolation Gown (fluid-repellent long-sleeved gown)
- 4) Eye protection(face shield /goggles)
- 5) Head cover

Boot cover / shoe cover (**ONLY**
when **anticipating spillage** and
vomiting) - not always necessary

INFLUENZA LIKE ILLNESS (ILI) PATIENT

**SETTING: EXAMINATION ROOM/
CONSULTATION ROOM**

TARGET: HEALTHCARE WORKER

ACTIVITY

History taking / physical
examination / providing care

* **patient** should be reminded to
wear a **surgical mask**
If **not tolerable**, advise the **patient**
to **cover nose and mouth** during
coughing or sneezing with tissue
or flexed elbow.

TYPE OF PPE

- 1) Surgical mask
 - 2) Gloves
 - 3) Long-sleeved plastic apron
- Eye protection (face shield / goggles) – when **anticipating** patient's **respiratory secretion**
 - Change **plastic apron and gloves** after examination of each patient





INFLUENZA LIKE ILLNESS (ILI) PATIENT

**SETTING: EXAMINATION ROOM/
CONSULTATION ROOM**

TARGET: HEALTHCARE WORKER

ACTIVITY

**Performing Aerosol Generating
Procedures (AGP)**

- Intubation
- Suctioning
- Nebulization
- CPR

Also when performing
oropharyngeal or
nasopharyngeal swab

TYPE OF PPE

- 1) N95 mask
- 2) Gloves
- 3) Isolation Gown (fluid-
repellent long-sleeved gown)
- 4) Eye protection (face shield
/goggles)
- 5) Head cover

Boot cover / shoe cover (**ONLY**
when **anticipating spillage** and
vomiting) - not always necessary

ADMINISTRATIVE AREAS

SETTING: ANY AREAS

TARGET: ALL STAFF

ACTIVITY

Any activities not involving direct contact with patient

TYPE OF PPE

No PPE needed



ADMINISTRATIVE/PUBLIC AREAS

SETTING: ANY AREAS

TARGET: SECURITY OFFICER

ACTIVITY

Security officers in healthcare facilities

Maintain **more than 1** metre spatial distance at all times

TYPE OF PPE

- 1) No PPE needed, however use surgical mask if unable to maintain spatial distance of more than 1 metre.
- 2) Frequent hand hygiene



REFERENCE

1. Rational use of personal protective equipment for coronavirus disease (COVID-19) Interim guidance, 27 February 2020.
2. The Infection Prevention and Control (IPC) Measures in Managing PUI or Confirmed COVID-19 (Annex 8) in Guidelines COVID-19 Management No.5/2020, 24 March 2020.
3. Emergency Medicine and Trauma Services, MOH