Ministry of Health
Malaysia

COVID-19 EDUCATIONAL TOOLKITS FOR HOSPITALS

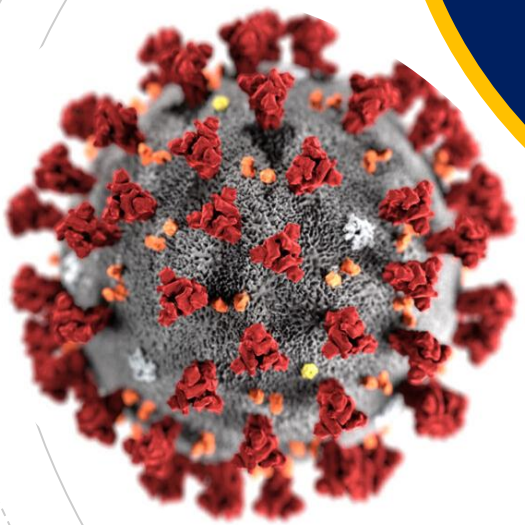
AND OTHER HEALTHCARE SETTINGS

Prepared by:
Medical Program
Ministry of Health

CONTENTS

- Introduction to Coronavirus Disease (COVID-19) and Clinical Management in Hospital
- Infection Prevention and Control (IPC) Measures in Managing Suspected, Probable or Confirmed Coronavirus Disease (COVID-19)
- Personal Protective Equipment (PPE) when Managing Suspected, Probable or Confirmed COVID-19
- Management of Healthcare Worker (HCW) During COVID-19 Pandemic & Crisis

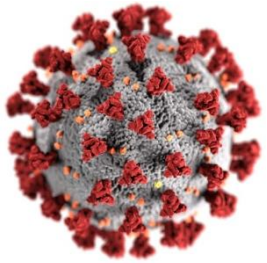
INTRODUCTION TO CORONAVIRUS DISEASE (COVID-19) AND CLINICAL MANAGEMENT IN HOSPITAL



CORONAVIRUS (CoV)

- CoV are found globally in humans and many different animal species.
- Classified in the Ortho-coronaviridae subfamily
  - Order: Nidovirales
  - Subordination: Cornidovirineae
  - Family: Coronaviridae

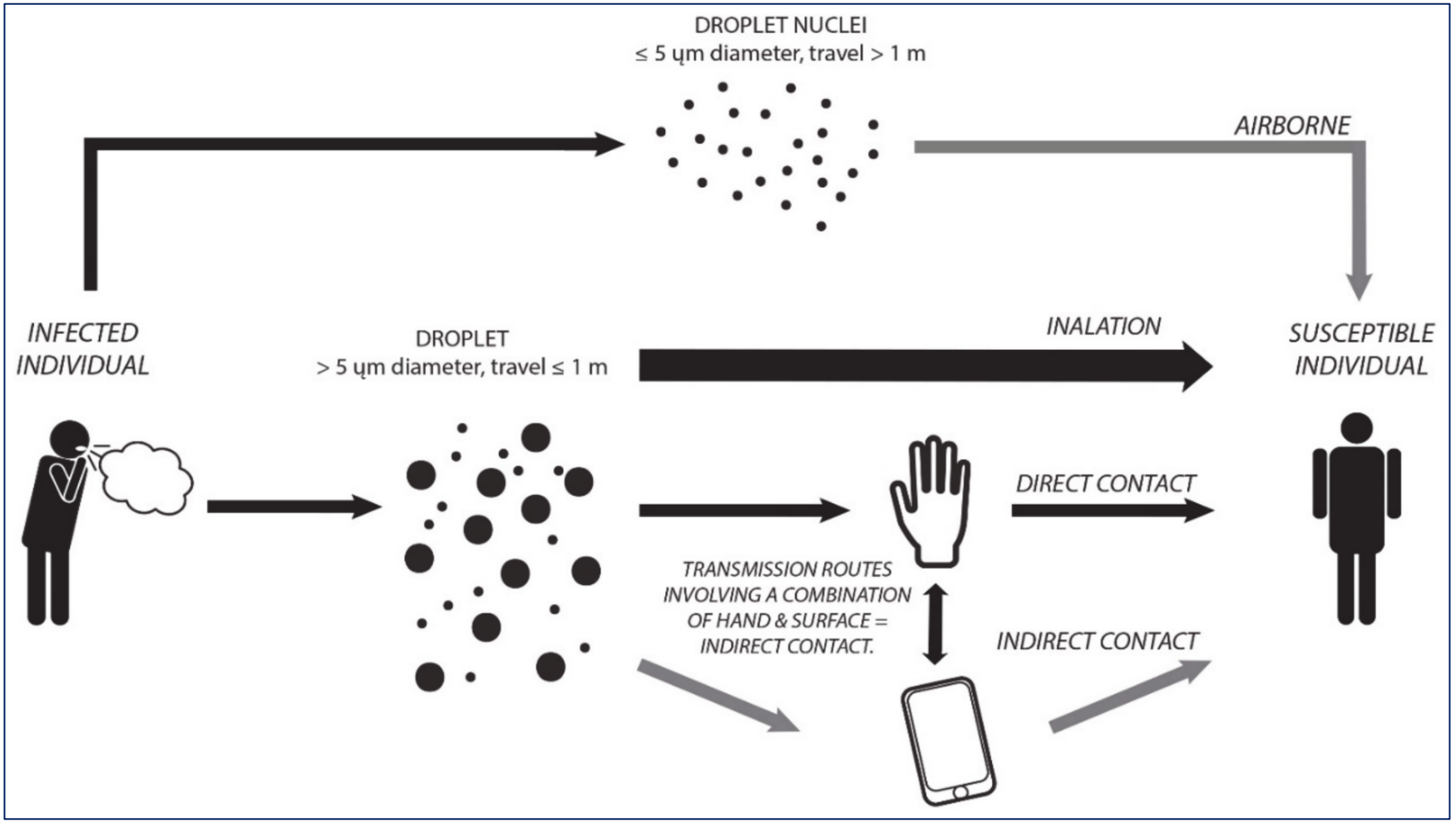
They are round and sometimes pleiomorphic with 80-120nm diameter, enveloped, positive-sense, single-stranded RNA viruses.



They are now 7 types of coronaviruses that have been identified by the CDC, which includes:

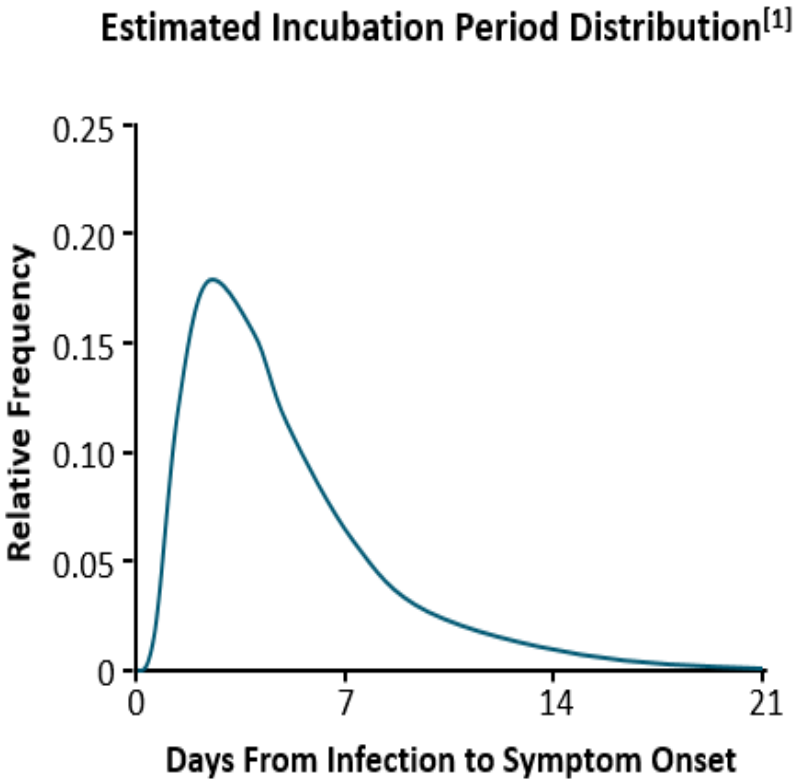
Common Human Coronaviruses	Other Human Coronavirus
1. 229E (alpha coronavirus) 2. NL63 (alpha coronavirus) 3. OC43 (beta coronavirus) 4. HKU1 (beta coronavirus)	5. SARS 6. MERS 7. COVID-19 (SARS-CoV-2)

ROUTES OF SARS-CoV-2 TRANSMISSION



COVID-19 INCUBATION: INFECTION TO ILLNESS ONSET

- Among 10 confirmed NCIP cases in Wuhan, Hubei province, China[1]
  - Mean incubation: 5.2 days (95% CI: 4.1-7.0)
- Among 181 confirmed SARS-CoV-2 infections occurring outside of Hubei province[2]
  - Median incubation: 5.1 days (95% CI: 4.5-5.8)
  - Symptom onset by Day 11.5 of infection in 97.5% of persons



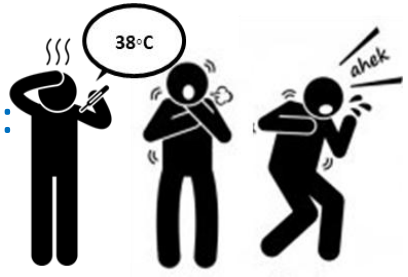
1. Li. NEJM. 2020;382:1199. 2. Lauer. Ann Intern Med. 2020;172:577.

Slide credit: clinicaloptions.com

CASE DEFINITION

1. SUSPECTED CASE OF COVID -19

A person who meets the **clinical AND epidemiological criteria**:



A. Clinical criteria

In the **absence** of a more likely diagnosis:

At least **two** of the following symptoms:

- Fever
- Chills
- Rigors
- Myalgia
- Headache
- Sore Throat
- Nausea or Vomiting
- Diarrhea
- Fatigue
- Acute onset Nasal congestion or running nose

OR

Any **one** of the following symptoms:

- Cough
- Shortness of Breath
- Difficulty in Breathing
- Sudden new onset of anosmia (loss of smell)
- Sudden new onset of ageusia (loss of taste)

OR

Severe respiratory illness with at least **one** of the following:

- Clinical evidence of pneumonia
- Acute respiratory distress syndrome (ARDS)

CASE DEFINITION (cont…)

B. Epidemiological criteria

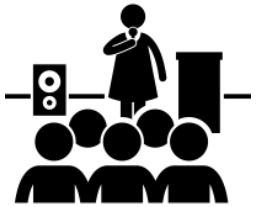
Attended an event **OR** areas associated with known COVID-19 **cluster** **OR** **red zones**[1];

OR

Travelled to / resided in a foreign country within 14 days before the onset of illness;

OR

Close contact[2] to a confirmed case of COVID-19, within 14 days before onset of illness.



[1] The list of red zone areas is based on the 14 days moving data by mukim/zon/presint updated in the MOH website : http://covid-19.moh.gov.my/

DEFINITION OF CLOSE CONTACT

I. Health care associated exposure without appropriate PPE (including providing direct care for COVID-19 patients, working with health care workers infected with COVID-19, visiting patients or staying in the same close environment of a COVID-19 patient).

II. Working together in close proximity or sharing the same classroom environment with a with COVID-19 patient

III. Traveling together with COVID-19 patient in any kind of conveyance

IV. Living in the same household as a COVID-19 patient

CASE DEFINITION (cont…)

2. Probable Case of COVID-19

A person with **RTK-Ag positive** awaiting for RT-PCR confirmation.

OR

A suspect case with **chest imaging** showing findings suggestive of COVID-19 disease (refer Annex 24 of MOH Guidelines on COVID-19 Management).

Note: Radiological imaging procedure is not indicated in all **suspected COVID-19** unless there is clinical suspicion of pneumonia.

3. Confirmed Case of COVID-19

A person with laboratory confirmation[2] of infection with the COVID-19, irrespective of clinical signs or symptoms

4. Person Under Surveillance (PUS) for COVID-19

Asymptomatic individual subjected to Home Surveillance Order (HSO)

CHECKLIST FOR SUITABILITY OF SUSPECTED COVID-19 CASES TO UNDERGO HOME SURVEILLANCE

Has a separate bedroom with en-suite bathroom (preferable); if not, common bathroom with frequent cleaning and disinfection

Has access to food and other necessities

Able to adhere to instruction to follow home surveillance order

Has access to face mask, glove and disinfectant at home

Able to seek medical care if necessary and return with own private transport

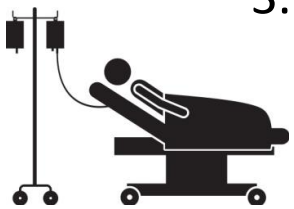
Able to stay away (at least 2 meter apart) from the high-risk household members (e.g. individual > 60 years old, young children <2 years, pregnant women, people who are immunocompromised or who have chronic lung, kidney, heart disease)

(The checklist is provided as a guide, hence the assessment of patient suitability for home surveillance is tailored from one patient to another)

ADMISSION CRITERIA

1. All confirmed COVID-19 cases (Laboratory confirmed case) [1]

2. All probable COVID-19 cases



3. Suspected COVID-19 case who is clinically ill[2]

4. Suspected case with uncontrolled medical conditions, immunocompromised status, pregnant women, extremes of age (< 2 years or > 60 years old)

5. Suspected COVID-19 case who does not fulfil the above criteria but are not suitable for home surveillance, to consider admission in quarantine station (Annex 32)

[1] COVID-19 positive from low risk group who are asymptomatic or mildly symptomatic can be admitted directly to low risk COVID-19 quarantine and treatment centres after discussion with relevant physician

[2]The clinical condition of the patient is based on clinical judgement of the clinician in-charge

CONFIRMED CASE OF COVID-19

ALL CONFIRMED CASES NEED TO BE:

1. Admitted to Admitting Hospital

2. Notified and registered as COVID-19 case to PKD as soon as possible

3. Transported to Admitting Hospital by designated transport arranged by PKD

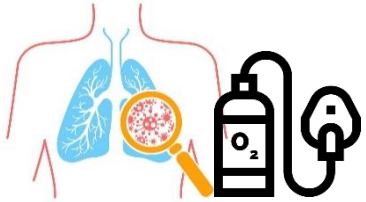
4. Managed clinically as per recommendation in Annex 2e

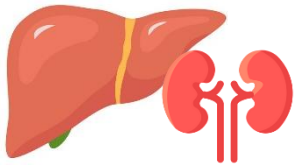
5. Investigated (field investigation) by PKD as per Annex 13

CLINICAL CATEGORIES

Clinical Stage		
1	Asymptomatic	MILD
2	Symptomatic, No Pneumonia	
3	Symptomatic, Pneumonia	
4	Symptomatic, Pneumonia, Requiring Supplemental Oxygen	SEVERE
5	Critically Ill with Multiorgan Involvement	

PLAN OF ACTION TO CLINICAL MANIFESTATION





Asymptomatic Patients and those with mild URTI/ No pneumonia	Pneumonia with no hypoxia	Pneumonia with hypoxia	Critically Ill patients
• Twice daily review (once by AM team and once by PM team • Specialist/Senior MO to do quick board rounds at Am & Night shift • *If first week of illness the night review can be phone call by the attending MO asking for emerging symptoms*.*	• Twice daily review by medical officers with consultation with specialist/ consultant • **Calculate MEWS score accurately** • If increase in score to inform specialist	• **Minimum 6hrly review. Specialist to alternate with Mo** to review patients in an alternate manner • **Calculate MEWS score accurately** • If increase in score to inform specialist	• Admit to ICU • Consultant or specialist review minimum once a day

MEWS (MODIFIED EARLY WARNING SIGNS)

*Calculate Modified Early Warning Score (MEWS), increase in score will suggest clinical deterioration. Use MDCalc or table below.

Score	+3	+2	+1	0	+1	+2	+3
SBP (mmHg)	≤70	71-80	81-100	101-199		≥200	
HR (bpm)		<40	41-50	51-100	101-110	111-129	≥130
RR (/min)		<9		9-14	15-20	21-29	≥30
Temp (°C)		<35		35-38.4		≥38.5	
Conscious level				Alert	Voice	Pain	Unresponsive

If MEWS >4 or SPO2 <90% with oxygen therapy or if concern on patient's condition, **inform con**

Colour-Code	MEWS Score	Follow-up/Next measurements
Blue	0	24 hours
Yellow	1	8-12 hours
Orange	2	4-8 hours
Red	3 – 4	1-4 hours
	>4	**Inform consultant and alert ICU team**

SEVERE DISEASE

WHO

Risk factors

- **Age > 50**
- **Chronic kidney disease**
- **History of hypertension**
- **History of cardiovascular**
- **disease**
- **Obesity (BMI ≥ 30 kg/m^2)**
- **Pre-existing pulmonary disease**
- **Diabetes with A1c > 7.6%**
- **Use of biologics**
- **History of transplant or other immunosuppression**
- **Uncontrolled HIV (viraemic or CD4 <200)**

WHEN

Day 5 – Day 10 of illness

HOW (to predict)

Warning signs

Clinical

- **Persistent or new onset fever**
- **Persistent symptoms - Lethargy/ anorexia/ cough**
- **Respiratory compromise**
  - **Exertional dyspnoea**
  - **Respiratory rate more than 25**
  - **SpO2 room air <95%**

Laboratory

- **A rising CRP value or a single CRP value of ≥50mg/l**
- **Dropping Absolute lymphocyte count (ALC),**

Radiological

- **Features of Pneumonia; multi- lobular involvement or rapidly worsening chest X-ray**

1	2	3	4	5	6	7	8	9	10	11	12	13	14

Category 4 patients - enforce the following rules:

- Patient need to be completely rest in bed
- Urinal for men and commode for women
- Effectively manage the diarrhea (loperamide adequately); lessen the need to go to toilet.
- Portable O2 whenever need to go to toilet if applicable

PREPARING TO GO IN:

CHECK BEFORE GOING INTO RED ZONE

- Temperature chart
- Day of illness
- Vitals signs
- Plan blood and swabs before entering (label tubes and swabs VTM)
- **To clerk patient over the phone/get information over the phone before going in to see the patient→ this is to cut down the amount of time spent in the room**

INSIDE RED ZONE

- Input/Output
- Look for GCS, Hydration
- Check for hypoxia
- Ask for exertional dyspnoea
- Respiratory rate – count for 1 minute
- SPO2
- Blood taking, swab
- ECG needed

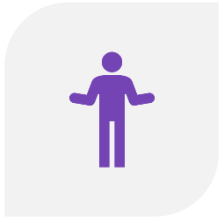
RULES FOR GOING INTO PATIENT CARE AREAS

GO IN PAIRS OR WITH AN OBSERVER

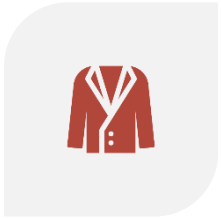
KNOW YOUR ZONES

REGULAR HAND HYGIENE

DON'T TOUCH THE FACE AND EYES



OBSERVER TO WATCH THE HCW DON AND DOFF



REMIND THE PATIENT TO WEAR A MASK WHEN THE HCW IS ENTERING THE ROOM

PPE FOR COHORT CUBICLE OF SUSPECTED CASE / SARI

When entering the room

- Face shield
- N95/ surgical mask
- Gloves
- Long sleeved fluid resistant isolation gown
- Long sleeved apron
- Head cover

When moving from one suspected case to another

- **Maintain isolation gown, N95/ surgical mask, face shield and head cover**
- Change long sleeved apron
- Change outer gloves
- Change any soiled PPE between patients
- Hand hygiene between patients

PPE FOR COHORT CUBICLE OF CONFIRMED CASES

When entering the room

- Face shield
- Head cover
- N95/ surgical mask
- Gloves
- Long sleeved fluid resistant isolation gown

When moving from one suspected case to another

- **Maintain isolation gown, N95/ surgical mask, face shield and head cover**
- Change outer gloves and any soiled PPE
- Hand hygiene between patients

MEDICAL / CLINICAL MANAGEMENT

Category 1-3

1	No antiviral treatment required
2	No antiviral treatment required in the absence of warning signs Close observation of vital signs and oxygen saturation Look for warning signs at each review. **Treat as category 4 if any warning signs present**
3	No antiviral treatment required in the absence of risk factors/warning signs Close observation of vital signs and oxygen saturation Look for warning signs at each review. **Treat as category 4 if any warning signs present** Treat as category 4 if patient has any of the following risk factors: • **Age ≥ 50years** • **ESRF**

****Medical Management of Confirmed C0VID-19 may change based on new scientific evidences**
Please refer updated Clinical Management Guideline from time to time

MEDICAL / CLINICAL MANAGEMENT (cont..)

Category 4-5

Drug	Dose & Duration	Comments
Favipravir	1800mg bd for 1 day then 800mg bd 5 – 9 days	Teratogenic effect; Contraindicated for women of childbearing potential and men whose partner is of childbearing potential. Use with caution if GFR <30ml/min
SC interferons	SC interferons Beta 1a 44mcg stat then EOD / SC Interferon Beta 1b 250mcg stat then EOD 3-5 doses	Use in the first week of illness as viral activity may predominate. It may not be useful if started in the second week of illness.

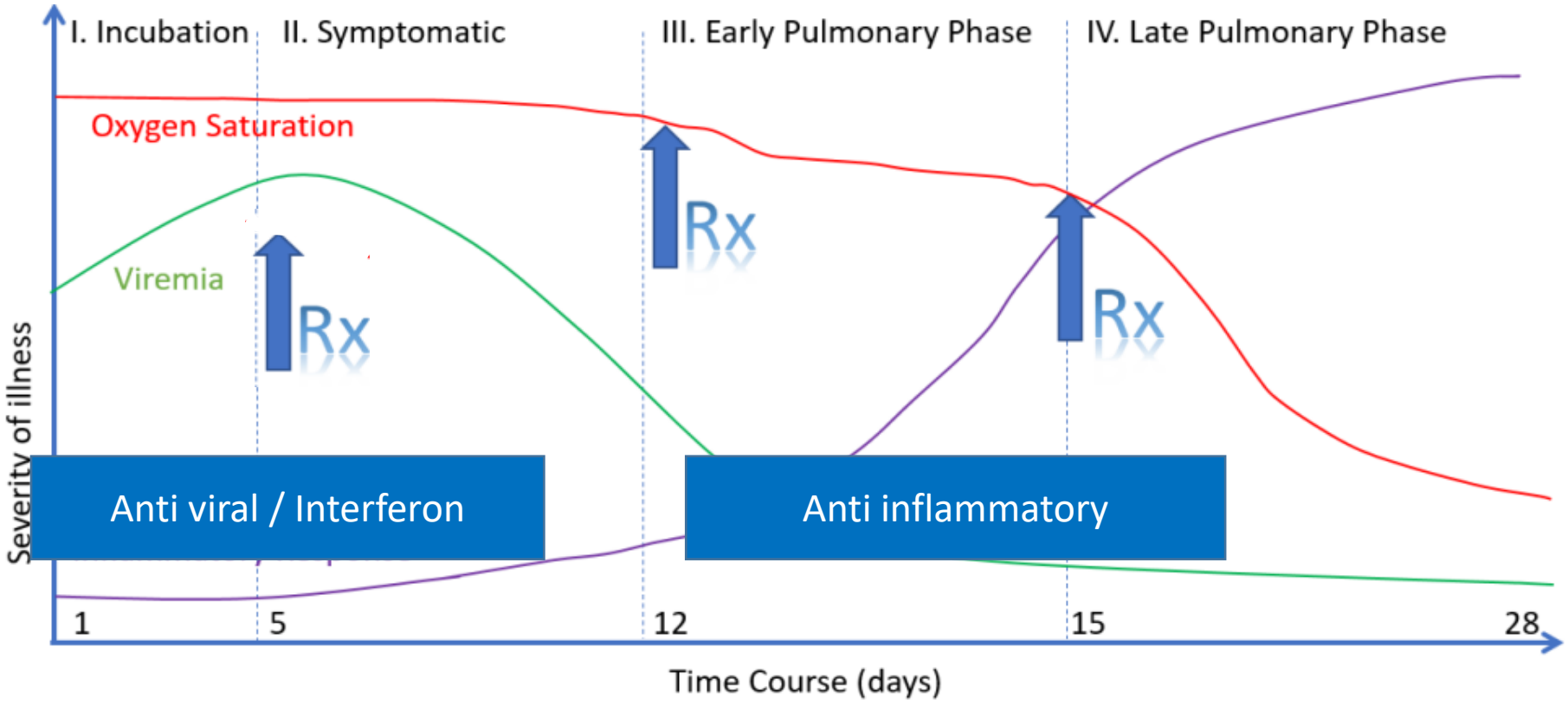
****Medical Management of Confirmed C0VID-19 may change based on new scientific evidences**
Please refer updated Clinical Management Guideline from time to time

SEVERE COVID-19

- Persistent or new onset fever
- Increasing oxygen requirements

PLUS

- Increasing CRP /Raised CRP
- Persistently low OR dropping ALC <1.0
- High Interleukin 6 levels (if available)



"Skill in medicine consists in an eminent degree **in timing** remedies", Benjamin Rush 1746-1813

SEVERE COVID -19 WITH CYTOKINE RELEASE SYNDROME (CRS)

Drug	Dose & Duration	Comments
Dexamethasone **Methylprednisolone**	6mg od 5 - 7 days 0.5mg-1mg/kg 5 - 7 days	• Recommended in all patients needing supplemental oxygen if more than 7 day of illness • Benefits of use in patients less than 7 day of illness is still uncertain

Tocilizumab Dose Chart For COVID-19 Patients

Weight	Dose	No of 400mg vial(s) required	No of 80mg vial(s) required
50kg	400mg	1	0
60kg	480mg	1	1
70kg	560mg	1	2
80kg	640mg	1	3
90kg	720mg	1	4
100kg	800mg	2	0

- Off label use for COVID-19 patients (cytokine release syndrome)

- Dose for tocilizumab= 8mg/kg as a single dose (max 800mg/dose)
- Administered intravenously over one hour

ADDRESSING HYPER-COAGULOPATHY

1

Full dose anti-coagulation

Full dose anticoagulation

- eg. Enoxaparin – 1mg/kg 12hrly

- Confirmed VTE
- Suspect PE - sudden unexplained deterioration in oxygenation or hemodynamic instability, acute cor pulmonale
- Clotting of vascular devices (eg, venous, arterial devices, and hemodialysis devices).

2

High prophylactic dose anti-coagulation

High prophylactic dose anti-coagulation

- eg. Enoxaparin - 0.5mg/kg 12hrly

- ? All ICU patients
- ? Based on increased D-dimers -

3

Prophylaxis

Prophylaxis

- eg. Enoxaparin 30-40mg daily depending on renal function

- All patients requiring supplemental oxygen

TRANSFER TO A STEP-DOWN FACILITY

Confirmed COVID-19 who fulfil the following criteria;

1. At least seven days have passed since symptoms first appeared **AND**
2. At least three days (72 hours) have passed since recovery of symptoms (defined as resolution of fever without antipyretics and improvement in respiratory symptoms [e.g., cough, shortness of breath]) **AND** stable co-morbids

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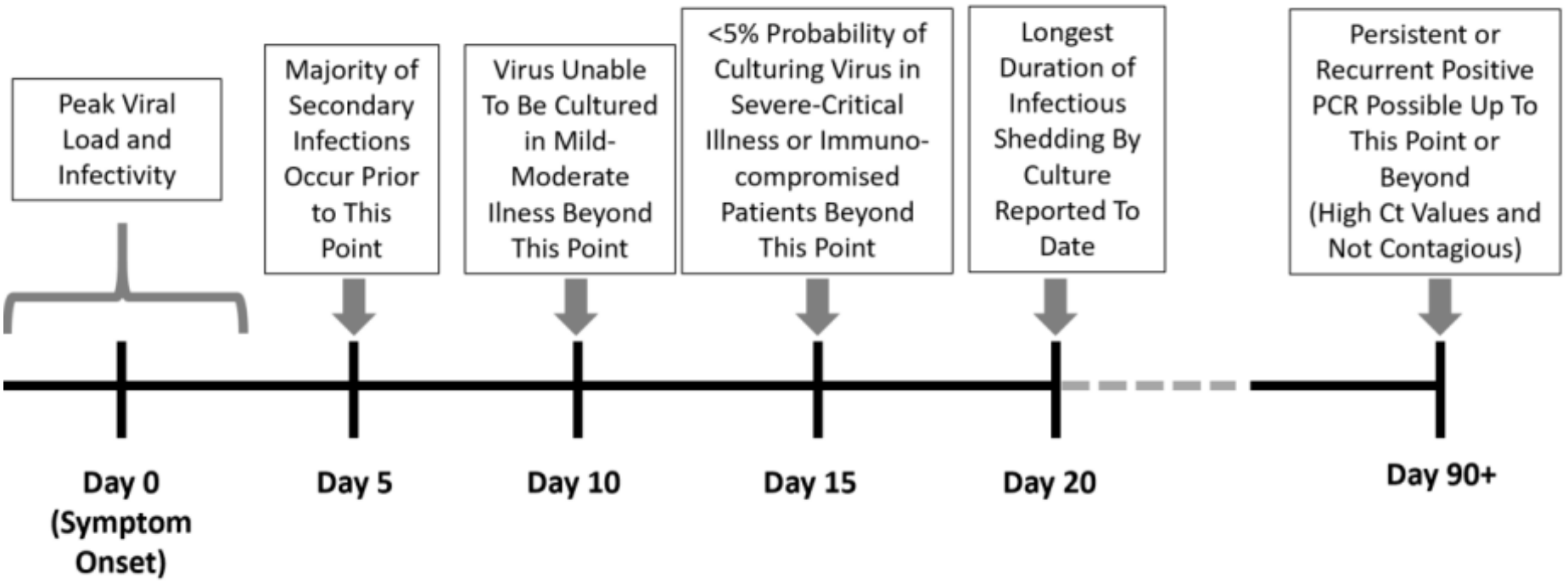
- Patient can be transferred to identified **Step Down Centers** until discharge.
- Step Down Center can be from an identified ward in district hospital or an area which is suitable within the acute hospital.
- The coordination and management of these centers is under the responsibility of the hospital.
- Daily monitoring by medical personnel must be done in this center.

DISCHARGE FROM INFECTIOUS DISEASE WARD FOR CONFIRMED COVID-19 CASE



Duration of SARS-CoV-2 Infectivity: When is it Safe to Discontinue Isolation?

Chanu Rhee MD, MPH[1,2,3], Sanjat Kanjilal[1,2], Meghan Baker MD, ScD[1,2,3], Michael Klompas MD, MPH[1,2,3]

CRITERIA FOR DISCHARGE FROM INFECTIOUS DISEASE WARD FOR CONFIRMED COVID-19 CASE

Confirmed COVID-19 can be discharged from **infectious disease ward** or **released from COVID-19 Care Pathway** when fulfil the following criteria:

a. Person with COVID-19 who have symptoms:

- At least **10 days** have passed since symptom onset

And

- At least **24 hours** have passed since resolution of fever without the use of fever-reducing medications

And

- Other symptoms such as dyspnoea, cough **have improved**

b. Person infected with SARS-CoV-2 who never develop COVID-19 symptoms:

- Maybe discharged **10 days** after the date of their first positive RT-PCR test for SARS-CoV-2

Note:

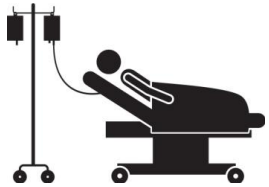
- No COVID-19 test is required before patient is discharged from the ward.
- For immunocompromised host, releasing from COVID-19 care pathway has to be taken on a case to case basis (e.g, patient on chemotherapy, bone marrow or organ transplantation, HIV with low CD4 cell count and prolonged use of corticosteroids or other immunosuppressive)

CRITERIA FOR DISCHARGE FROM INFECTIOUS DISEASE WARD FOR CONFIRMED COVID-19 CASE (CONT..)

Confirmed COVID-19 case requiring prolonged in-patient care

a. COVID-19 cases fulfilling the discharge criteria but still requiring ongoing inpatient care such as stroke rehabilitation can be discharged from COVID-19 care and transferred to the appropriate ward.

b. Category/Stage 5 patients in ICU, who still require ICU care beyond 28 days of illness, can also be discharged from COVID-19 care.

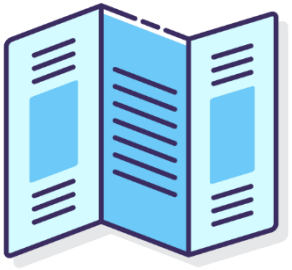


❖ *This is based on recent data that infectious viruses have not been isolated beyond day 20 of illness even in those critically ill.*

POST DISCHARGE PLAN FOR CONFIRMED COVID-19 CASE

a. For patients with co-morbidities
   - arrange appointment for the follow-up at the nearest health facilities and to ensure adequate supply of medications until the next appointment
   - Brief summary should be prepared upon discharge.

b. Upon discharge, all patients should be provided with the hospital's contact number and health education pamphlet (Guideline for COVID-19 Patient Discharged from Hospital) as in Appendix 1.



Role of PCR testing after discharge from COVID-19 care

For persons previously diagnosed with symptomatic COVID-19 and who remain asymptomatic after recovery, retesting is not recommended within 3 months after the date of onset of illness.

POST DISCHARGE PLAN FOR CONFIRMED COVID-19 CASE

Ministry of Health Malaysia

GUIDELINES FOR COVID-19 PATIENT DISCHARGED FROM HOSPITAL

This brochure is designed to provide information and advice for COVID-19 patients after going home.

WHAT SHOULD YOU DO AT HOME AFTER DISCHARGE ?

- Once you get home, rest adequately, stay hydrated, and get plenty of sleep.
- You may continue to feel body aches, fatigue and/or mild cough, which can occur after a serious viral pneumonia.
- Make sure the room is well ventilated by opening the windows.
- Avoid sharing personal household items (Examples: towels, tooth brush).

CAN I GO BACK TO WORK ?

Yes, you can return to work immediately after your sick leave is over.

INFORMATION YOU SHOULD KNOW

What we know about COVID-19

- You are over the period of danger.
- The risk of you spreading to those close to you is considered minimal or nil.

What we don't know for sure yet

- There is no conclusive evidence that a person can have re-infection/ re-activation of COVID-19 after discharge.
- The duration of protection after COVID-19 infection is uncertain yet. Therefore, you should always follow the good practice of 3C and 3W (refer to diagrams beside).

Appendix 1

AVOID 3C, PRACTICE 3W

REFERENCES

1. Annex 1 Case Definition of COVID-19, Guidelines COVID-19 Management In Malaysia
2. Annex 2 Management of Suspected, Probable and Confirmed COVID-19, Guidelines COVID-19 Management In Malaysia
3. Annex 2e Clinical Management for Confirmed COVID-19 in Adult and Paediatric, Guidelines COVID-19 Management In Malaysia
4. Rational use of personal protective equipment for coronavirus disease (COVID-19) and considerations during severe shortages, Interim Guidance. WHO April 2020

Ministry of Health
Malaysia

INFECTION PREVENTION AND CONTROL (IPC) MEASURES IN MANAGING SUSPECTED, PROBABLE OR CONFIRMED CORONAVIRUS DISEASE (COVID-19)

Standard Precaution

What is standard precaution ?

The **minimum** infection prevention practices that should be used in the care of **ALL patients, ALL the time.**

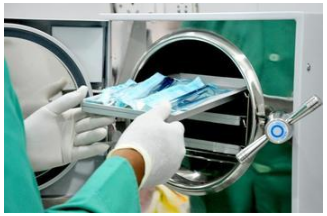
Standard precautions are **a set of infection control practices** used to prevent transmission of diseases that can be acquired by contact with blood, body fluids, non-intact skin and mucous membranes.

Standard Precaution

Element of Standard Precaution

Hand hygiene

Personal Protective Equipment (PPE)



Disinfectant & Sterilisation

Environmental Hygiene

Linen Management

Waste Management

Spillage Management

Injection safety & Sharps management

Respiratory Hygiene & Cough Etiquette

Transmission Based Precautions

When treating patients who are known or suspected of being infected or colonized with infectious agents.

Applied according to the clinical syndrome and the likely etiologic agents, and then modified based on test results.

These precautions are to be implemented **in conjunction with STANDARD PRECAUTION**.

Transmission Based Precautions

Three types :

Contact

Droplet

Airborne

May be combined for diseases that have multiple routes of transmission.

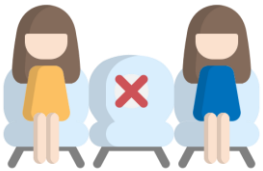
INFECTION PREVENTION AND CONTROL (IPC) MEASURES

A. POINT OF ENTRY
B. PATIENT PLACEMENT ON ADMISSION
C. AEROSOL-GENERATING PROCEDURES (AGP)
D. PATIENT TRANSFER AND TRANSPORT
E. SPECIMEN COLLECTION AND TRANSPORT
F. DISINFECTION AND STERILIZATION
G. TERMINAL CLEANING OF AN ISOLATION ROOM
H. DISHES AND EATING UTENSILS
I. LINEN MANAGEMENT
J. HEALTHCARE WORKER (HCW)
K. VISITORS
L. PATIENT RECORD / BED HEAD TICKET

INFECTION PREVENTION AND CONTROL (IPC) MEASURES IN MANAGING SUSPECTED, PROBABLE OR CONFIRMED COVID-19

Point of Entry:

- Use **physical barriers** such as glass or plastic windows
- **Rapid case identification** of patients at risk
- **Rapid triage** of patients
- Separate Suspected COVID-19 to a **dedicated waiting area** (well ventilated with spatial separation of 1 - 2m between patients)
- Provide **tissues/ surgical mask** and **no-touch bins or biohazard bag**
- Provide **resources** for performing **hand hygiene**



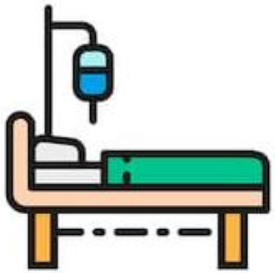
INFECTION PREVENTION AND CONTROL (IPC) MEASURES IN MANAGING SUSPECTED, PROBABLE OR CONFIRMED COVID-19

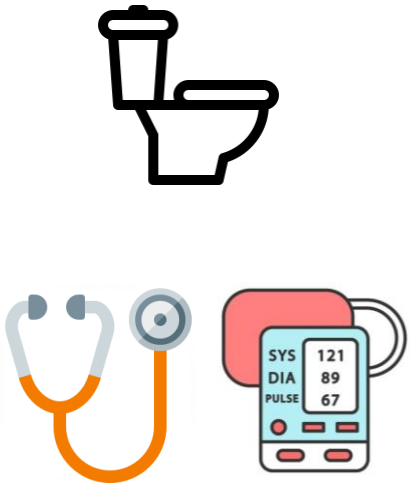
Patient placement at point of entry & on admission (in descending order of preference):

i. Single room (nursed with door closed) and attached bathroom OR

ii. Single room

- **Cohorting Confirmed COVID-19** patients is **allowed**
- **Probable COVID-19** case should **not be placed in the same area** as **Confirmed case**
- **Suspected COVID-19** cases with pending result should be placed in **single isolation room**
- **Dedicated equipments** if possible (or clean & disinfect before reuse)





INFECTION PREVENTION AND CONTROL (IPC) MEASURES IN MANAGING SUSPECTED, PROBABLE OR CONFIRMED COVID-19

Patient placement for patient requiring AGP (in descending order of preference):

i. Airborne Infection Isolation Room (AIIR)

ii. Adequately ventilated single room with at least natural ventilation

Transporting patient:

- **Minimize** patient movement
- If necessary use **pre-planned route**
- **Notify receiving areas or facilities** before transferring patient
- **Clean and disinfect patient-contact surfaces** after use (e.g. bed, wheelchair, incubators)

- **HCWs must** wear **appropriate PPE**
- **Patient** should **wear** a **surgical mask** (if tolerable)

INFECTION PREVENTION AND CONTROL (IPC) MEASURES IN MANAGING SUSPECTED, PROBABLE OR CONFIRMED COVID-19

Specimen collection & transport:

- **State clearly** on the **request form** and **notify the laboratory**
- Place in **leak-proof specimen bags** and **deliver by hand**
- **Do not use pneumatic-tube systems**

Disinfection & Sterilization:

- Environmental cleaning and disinfection followed hospital recommendation
- **Increase frequency** of **cleaning highly touched area**

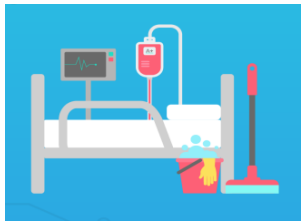
RECOMMENDED FREQUENCY OF CLEANING OF ENVIRONMENTAL SURFACES, ACCORDING TO THE PATIENT AREAS WITH SUSPECTED OR CONFIRMED COVID-19 IN HOSPITAL SETTING

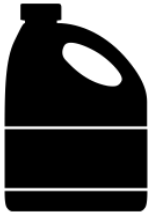
Patient area	Frequency [a]	Additional guidance
Screening/triage area	At least twice daily	• Focus on high-touch surfaces, then floors (last)
Inpatient rooms / cohort – occupied	At least twice daily, preferably three times daily, in particular for high-touch surfaces	• Focus on high-touch surfaces, starting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

[a] Environmental surfaces should also be cleaned and disinfected whenever visibly soiled or if contaminated by a body fluid (e.g., blood); [b] Frequency can be once a day if hallways are not frequently used.

Source: Cleaning and disinfection of environmental surfaces in the context of COVID-19 Interim guidance, World Health Organization, 15 May 2020

INFECTION PREVENTION AND CONTROL (IPC) MEASURES IN MANAGING SUSPECTED, PROBABLE OR CONFIRMED COVID-19





Terminal Cleaning of Isolation Room:

- Decontamination is perform from **highest to lowest point** and from **least contaminated to the most contaminated**
- **Remove curtains** and place **in red linen bag with alginate plastic**
- Use disinfectants such as **sodium hypochlorite** [suggested concentration: 0.1% (1000ppm)]
- Wait for **sufficient air changes**

Dishes & Eating Utensils:

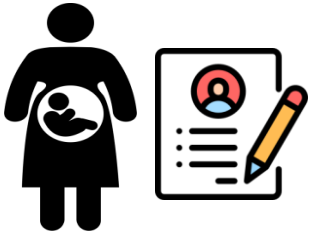
- Use **disposable**

Linen Management:

- Washing/disinfecting **linen should be handled according to hospital protocol**
- Place linen into **red alginate plastic** and then into **red linen bag**

INFECTION PREVENTION AND CONTROL (IPC) MEASURES IN MANAGING SUSPECTED, PROBABLE OR CONFIRMED COVID-19

HCWs management:



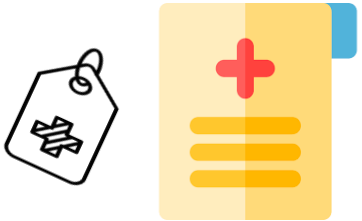
- HCWs with **high risk condition / immuno-compromised not allowed to** manage and provide care
- **Keep a register & monitor for symptoms**
- Form a **dedicated team**

Visitors:

- **NO** visitor should be allowed. If necessary,
  - **Screen** for symptoms
  - **Document** and **limit the number**, **scheduled time**
  - Appropriate instruction on use of **PPE and other precautions** (e.g., Hand hygiene)

Patient record / bed head ticket (BHT):

- patient record/bed head ticket **should be tagged**
- should be **kept outside the patient room**



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1. Guidelines COVID-19 Management In Malaysia
2. Policies & Procedures on Infection Control 3rd edition, 2019
3. Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected, Interim Guidance. WHO Jan 2020
4. Interim infection prevention and control recommendation for patients with confirmed 2019- Novel coronavirus or patient under investigation for nCoV in healthcare setting. Updated Feb 3 2020. CDC
5. Rational use of personal protective equipment for coronavirus disease (COVID-19), Interim Guidance. WHO February 2020
6. Rational use of personal protective equipment for coronavirus disease (COVID-19) and considerations during severe shortages, Interim Guidance. WHO April 2020
7. Cleaning and disinfection of environmental surfaces in the context of COVID-19, Interim guidance. WHO 15 May 2020

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PERSONAL PROTECTIVE EQUIPMENT (PPE) WHEN MANAGING SUSPECTED, PROBABLE OR CONFIRMED COVID-19

PERSONAL PROTECTIVE EQUIPMENT (PPE) WHEN MANAGING SUSPECTED, PROBABLE OR CONFIRMED COVID-19

REMEMBER: ALL HCW SHOULD WEAR SURGICAL MASK AND PRACTICE FREQUENT HAND HYGIENE WHEN IN HEALTH FACILITY

TRIAGING / POINTS OF ENTRY

1) Surgical mask
2) Eye protection (face shield/ goggles)*

*if anticipating less than 1 meter encounter

DRIVING, LOADING AND UNLOADING PATIENT

1) Surgical mask
2) Long-sleeved plastic apron
3) Gloves
4) Eye protection (face shield/goggles)

TRANSPORTING PATIENT

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

PERSONAL PROTECTIVE EQUIPMENT (PPE) WHEN MANAGING SUSPECTED, PROBABLE OR CONFIRMED COVID-19

REMEMBER: ALL HCW SHOULD WEAR SURGICAL MASK AND PRACTICE FREQUENT HAND HYGIENE WHEN IN HEALTH FACILITY

PROVIDING CARE (PATIENT NOT INTUBATED & ABLE TO WEAR MASK)

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

PROVIDING CARE (PATIENT INTUBATED OR NOT ABLE TO WEAR MASK)

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

PERSONAL PROTECTIVE EQUIPMENT (PPE) WHEN MANAGING SUSPECTED, PROBABLE OR CONFIRMED COVID-19

REMEMBER: ALL HCW SHOULD WEAR SURGICAL MASK AND PRACTICE FREQUENT HAND HYGIENE WHEN IN HEALTH FACILITY

PERFORMING OROPHARYNGEAL OR NASOPHARYNGEAL SWAB

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

DECONTAMINATION OF AMBULANCE

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

PERSONAL PROTECTIVE EQUIPMENT (PPE) WHEN MANAGING SUSPECTED, PROBABLE OR CONFIRMED COVID-19

REMEMBER: ALL HCW SHOULD WEAR SURGICAL MASK AND PRACTICE FREQUENT HAND HYGIENE WHEN IN HEALTH FACILITY

PERFORMING AEROSOL GENERATING PROCEDURES (AGP)

Option 1 (Preferred):

1) PAPR
2) Coverall suit/Isolation Gown (fluid-repellent long-sleeved gown) with plastic apron
3) Gloves
4) Eye Protection (face shield/goggles)*
5) Boot cover / shoe cover

*Depends on type of PAPR

PERFORMING AEROSOL GENERATING PROCEDURES (AGP)

Option 2:

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

PERSONAL PROTECTIVE EQUIPMENT (PPE) WHEN MANAGING SUSPECTED, PROBABLE OR CONFIRMED COVID-19

REMEMBER: ALL HCW SHOULD WEAR SURGICAL MASK AND PRACTICE FREQUENT HAND HYGIENE WHEN IN HEALTH FACILITY

PERFORMING AEROSOL GENERATING PROCEDURES (AGP)
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

REFERENCES

1. Guidelines COVID-19 Management In Malaysia
2. Policies & Procedures on Infection Control 3rd edition, 2019
3. Rational use of personal protective equipment for coronavirus disease (COVID-19) and considerations during severe shortages, Interim Guidance. WHO April 2020

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MANAGEMENT OF HEALTHCARE WORKER (HCW) DURING COVID-19 PANDEMIC & CRISIS

A) THE NEW NORMS IN GENERAL

1) Practice of Physical Distancing (at least 1 meter apart)

2) Hand Hygiene: Practice the 5 Moments of Hand Hygiene

3) Use of Personal Protective Equipment (PPE)

4) Screening and Follow-up of Healthcare Personnel
   - temperature screening
   - symptoms screening

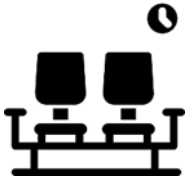
5) Risk Communication
   - health toolbox
   - technical update session
   - consultation

6) Integrated Services Strategy
   - contact tracing

7) Specific Needs of Healthcare Workers
   - high risk HCW

PRACTICE OF PHYSICAL DISTANCING
(AT LEAST 1 METER APART)

- Ward round 
- Nurse's station/ registration counters 
- Pantry 
- Prayer room 
- On-call room 

- Waiting/ common area 
- Home visits, contact tracing 
- Meeting room 
- Toilet 

SCREENING AND FOLLOW-UP OF HCW

i. Entering premise or before work:
   - temperature screening
   - symptoms screening

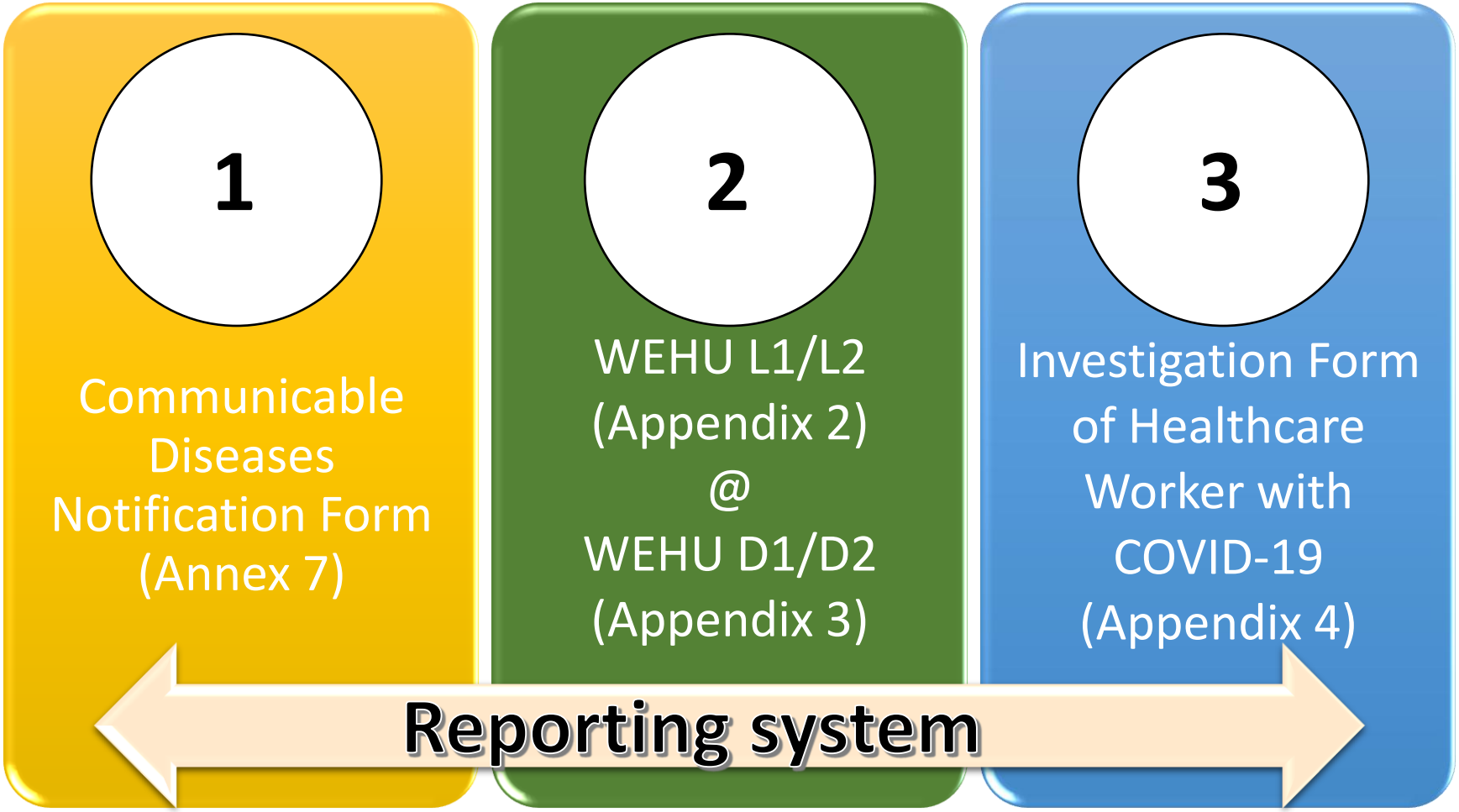
ii. HCW Declaration Form

iii. Targeted group:
   - based on **exposure risk assessment**
   - **mass screening need not be done routinely**

iv. Home surveillance order

SPECIFIC ACTION

HCW WITH CONFIRMED COVID-19



HCW WITH POTENTIAL EXPOSURE TO A PATIENT WITH COVID-19

UNPROTECTED EXPOSURE TO COVID-19: DEFINITION

1. The HCW was **not on recommended PPE*** for the activity or scenario during the exposure

2. Eyes or mouth or mucus membranes are exposed to the patient's **bodily fluids** (mainly respiratory secretions, blood, stool, vomit, and urine) of the COVID-19 patient

**Refer Annex 8: The Infection Prevention and Control (IPC) Measures in Managing Suspected or Confirmed COVID-19*

http://covid-19.moh.gov.my/garis-panduan/garis-panduan-kkm/Annex_8_IPC_MEASURES_IN_MANAGING_PUI_OR_CONFIRMED_COVID19_15.7.2020.pdf

CLOSE CONTACT: DEFINITION

Unprotected exposure to confirmed COVID-19 patient

i. HCW (excluding laboratory workers):
   - have any unprotected exposure of their **eyes or mouth or mucus membranes,** to the **bodily fluids** (mainly respiratory secretions e.g. coughing, but also includes blood, stools, vomit, and urine) of the case, ***OR***
   - have an cumulative unprotected exposure during **one work shift** (i.e. any breach PPE) for **more than 15 minutes face-to-face (< 1 meter distance)** to a case ***OR***
   - have any unprotected exposure (i.e. any breach in the appropriate PPE) while present in the same room when an **AGP* is undertaken** on the case

ii. Laboratory HCW who have **not fully adhered to good laboratory practice** for **cumulative 15 minutes or more in one work shift**, while testing samples positive patient

**cardiopulmonary resuscitation, intubation, extubation, bronchoscopy, nebulizer therapy, sputum induction*

Box 1

CONTACT TRACING

- Purpose:
  - immediate identification of close contact
  - early detection and management of disease
  - better clinical outcome
  - to prevent onward transmission to others

- Contact tracing is carried out in the following way:
  a) Community based contacts by Public Health
  b) HCW contacts by OSH and Public Health
  c) Hospital in-patient contacts by infection prevention and control personnel in collaboration with Public Health

INFECTIOUS PERIOD FOR CONTACT TRACING PURPOSES: DEFINITION

i. **Symptomatic:**
48 hours before symptom onset until 14 days after symptom onset

ii. **Asymptomatic:**
48 hours from the first positive test date until 14 days after the first positive test

- contact tracing may need to be extended retrospectively if the first positive test is delayed

Source Control: Definition

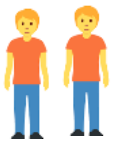
- Refers to the confirmed COVID-19 patient as the source

- Refers to the **confirmed COVID-19 patient** as the source
- Whether the **source was on facemask** during the exposure (which can efficiently reduce risk of droplet transmission)
- Good source control
- No source control

POINTS TO CONSIDER BEFORE ASSIGNING EXPOSURE RISK

- Patient's source control (Source person with confirmed COVID-19 wearing mask)

- HCW was in close contact with the confirmed case?



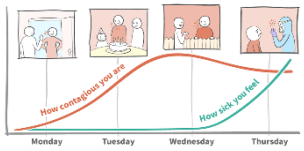
- HCW involved had an Unprotected Exposure?

- Aerosol Generating Procedure (AGP) performed?

- Clinical symptoms of the patient? (eg: coughing, fever, anosmia etc.)

- Place where exposure occurs? (3C)

- The confirmed case was in infectious period?



RISK ASSESMENT AND MANAGEMENT OF HEALTHCARE WORKER WITH EXPOSURE TO A PERSON WITH CONFIRMED COVID-19 (TABLE 1)

STEP 1: Determine Exposure Scenario During Contact	**STEP 2: Determine Exposed HCW PPE Level**	**STEP 3: Determine Exposure Risk Category**	**STEP 4: Implement Recommended Management**	
			 **ASYMPTOMATIC HCW**	 **SYMPTOMATIC HCW**
***Source person* with confirmed COVID-19 wearing mask** 				
1. Within 1 meter distance.  **AND/OR** 2. Cumulative exposure more than 15 min during one work shift. 	Wearing 3-ply surgical mask with/without eye protection.  	**LOW (protected exposure)**	1. Continue to work. 2. No test required. 3. Self-monitor symptoms for 14 days.	1. Re-evaluate risk and symptoms. 2. Consider RT-PCR only if indicated. 3. Exclude from work with HSO until test result available and/or until acute symptoms improve.
	Not wearing 3-ply surgical mask. 	**MEDIUM (unprotected exposure)**	1. Exclude from work with HSO for 14 days. 2. RT-PCR at D3 post-exposure, repeat at D5 if 1st test negative. 3. If both tests negative, repeat at D13. 4. In the event of crisis and staff shortage, RTW may be allowed if 1st and 2nd tests are negative with strict daily monitoring by OSH/ authorized personnel and adherence to RTW practice.	1. Exclude from work with HSO for 14 days. 2. RT-PCR immediately. 3. If 1st test negative and: - still symptomatic, repeat test after 48 hours. - symptoms have resolved, repeat test at D5 post exposure. 4. If both tests negative, repeat at D13.

***Source person** = A person who is a confirmed case of COVID-19* ***RTW** = Return To Work*

RISK ASSESMENT AND MANAGEMENT OF HEALTHCARE WORKER WITH EXPOSURE TO A PERSON WITH CONFIRMED COVID-19 (TABLE 2)

STEP 1: Determine exposure scenario during contact	**STEP 2: Determine Exposed HCW PPE level**	**STEP 3: Determine Exposure Risk Category**	**STEP 4: Implement Recommended Management**	
			ASYMPTOMATIC HCW	**SYMPTOMATIC HCW**
***Source person* with confirmed COVID-19 NOT wearing mask**				
1. Within 1 meter distance.  **AND/OR** 2. Cumulative exposure more than 15 min during one work shift. 	Wearing 3-ply surgical mask with eye protection (face shield/goggle). 	**LOW (protected exposure)**	1. Continue to work. 2. No test required. 3. Self-monitor symptoms for 14 days.	1. Re-evaluate risk and symptoms. 2. Consider test if indicated. 3. Exclude from work with HSO until test result available and/or until acute symptoms improve.
	Wearing 3-ply surgical mask without eye protection. 	**MEDIUM (unprotected exposure)**	1. Exclude from work with HSO for 14 days. 2. RT-PCR at D3 post-exposure, repeat at D5 if 1st test negative. 3. If both tests negative, repeat at D13. 4. In the event of crisis and staff shortage, RTW may be allowed if 1st and 2nd tests are negative with strict daily monitoring by OSH/ authorized personnel and adherence to RTW practice.	1. Exclude from work with HSO for 14 days. 2. RT-PCR immediately. 3. If 1st test negative and: - still symptomatic, repeat test after 48 hours. - symptoms have resolved, repeat test at D5 post exposure 4. If both tests negative, repeat at D13
	NOT wearing 3-ply surgical mask. 	**HIGH (unprotected exposure)**	1. Exclude from work with HSO for 14 days. 2. RT-PCR at D3 post-exposure, repeat D5 if 1st test negative. 3. If both tests negative, repeat at D13. 4. Not recommended for RTW until D13 test negative. 5. Strict daily monitoring by OSH/authorized personnel.	1. Exclude from work with HSO for 14 days. 2. RT-PCR immediately. 3. If 1st test negative and: - still symptomatic, repeat test after 48 hours. - symptoms have resolved, repeat test at D5 post exposure. 4. If both tests negative, repeat at D13. 5. Not recommended for RTW until D13 test negative. 6. Strict daily monitoring by OSH/ authorized personnel.
3. Performing AGP/ present in the same room where AGP is performed 	NOT wearing full PPE with respirator (N95/PAPR). 			

***Source person** = A person who is a confirmed case of COVID-19* ***RTW** = Return To Work*

RECOMMENDED MONITORING FOR ALL 3 CATEGORIES OF HCW

HCW with **MEDIUM** AND **HIGH** risk exposure will undergo **Active Follow-Up** by OSH

HCW with **LOW** risk exposure will undergo **Passive Follow-Up** where they self-monitor for symptoms

ACTIVE AND PASSIVE FOLLOW-UP OF HCW UNDER SURVEILLANCE

Active follow-up

- Daily OSH surveillance (symptoms and temperature monitoring by phone, reporting)
- Excluded from work
- On home surveillance order
- On self-monitor for symptoms for 14 days after the exposure
- Inform to contact OSH if they develop relevant symptoms

Passive follow-up

- Asymptomatic HCW can continue to work
- Symptomatic HCW must be excluded from work
- Self-monitor for symptoms for 14 days after the last potential exposure
- Contact OSH at any time if they develop relevant symptoms

ASYMPTOMATIC HCW BEING HOUSEHOLD CONTACT/ HAVING CLOSE CONTACT WITH SUSPECTED/ PROBABLE CASE OF COVID-19

- HCW to inform supervisor immediately
- To exclude from work until confirmatory test result available
- HCW to self-monitor symptom
- HCW to get tested if any symptom consistent with COVID-19 appears

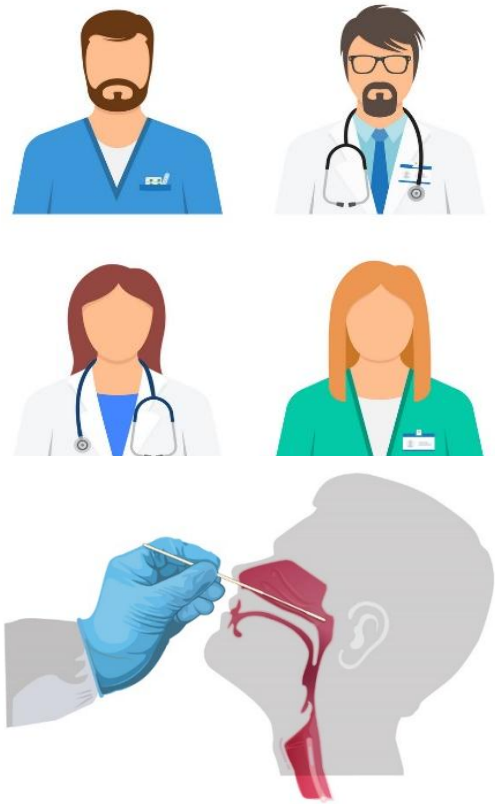
Risk assessment may need to be done on case by case basis

If RT-PCR result of the household member/ close contact is **negative**, **HCW may return to work**

If RT-PCR result of household member is **positive** – follow **Annex 12** (Management of Of Closed Contacts of Confirmed Case)

HCW WITH ACUTE SYMPTOMS THAT IS COMPATIBLE WITH COVID-19 WITHOUT ANY IDENTIFIABLE CAUSE

HCW with **new onset of acute respiratory infection (ARI) or** other **symptoms compatible with COVID-19** without any identifiable exposure to suspected or confirmed COVID-19 patients should be **evaluated and offered for testing.**



HCW WITH HISTORY OF RECOVERED COVID-19 INFECTION AND RE-TESTED POSITIVE

HCWs with history of COVID-19 infection who has recovered and discharged from hospital after Day-14 **and retested positive** is **NOT considered infectious**

AND

he/she can continue to work if asymptomatic.

Based on current evidence, recovered COVID-19 patients who are later tested positive **do not represent reinfection, hence they are not infectious.**

CRISIS STRATEGIES TO MITIGATE "STAFFING SHORTAGES"

HCW may be required to return to work for **essential service** needs and due to critical staffing shortages

RISK ASSESSMENT:

- Must be carefully done by OSH officer/ authorized personnel
- Asymptomatic HCW with Low Risk Exposure SHALL NOT be restricted from work

In such scenarios:

I. HCW should be evaluated to determine health fitness to work.

II. Asymptomatic HCW with the Medium Risk Exposure may be allowed to work if their 2 RT-PCR samples taken 48 hours apart are negative.

III. HCW who returns to work should adhere to **Return to Work Practices and Work Restrictions recommendations**.

RECOMMENDATION FOR EARLY RETURN TO WORK DURING "STAFFING SHORTAGES" FOR ALL 3 CATEGORIES OF HCW

LOW RISK EXPOSURE	• No work restriction for asymptomatic HCW • Passive follow-up	All must follow SOP -please refer next slide and Table 1-
MEDIUM RISK EXPOSURE	• Can be considered to early return to work if 1st and 2nd test are negative and asymptomatic • Active follow-up	
HIGH RISK EXPOSURE	• Not recommended to return to work until 3rd test negative at D13 • Active follow-up	

SOP RETURN TO WORK PRACTICES AND WORK RESTRICTIONS

HCW shall be allowed to return to work, BUT they should:

1. OSH should be **notified** upon returning to work
2. Staff Declaration Form should be filled upon returning to work
3. Strictly **wear surgical mask at all time** while in the healthcare facility
4. Adhere to **hand hygiene, respiratory hygiene, and cough etiquette**
5. Movement should be restricted, continue **self-isolation** at home upon returning from work, **avoid 3C and practice 3W**
6. Avoid **confined closed areas** with other HCW such as pantry, on-call room or prayer room
7. Restricted from taking care of **immunocompromised** patients until 14 days after the last exposure or from illness onset
8. Strictly **daily monitoring** of temperature and symptoms compatible with COVID-19 by OSH Officer/authorized personnel
9. If develop new onset of symptoms (even mild) or worsening of symptoms and consistent with COVID-19, immediately stop patient care activities and **notify** supervisor or OSH officer

SUPPORT AND COUNSELLING

Psychological support and assistance

Assessment and psychological of mental health first aid shall be conducted by Mental Health and Psychosocial Support Team (such as counselor).

REFERENCES

1. Health Protection Surveillance Centre (HPSC) Interim Guidance for Coronavirus - Healthcare Worker Management by Occupational Health Version 14, updated 6th May 2020
2. US CDC: 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 2019 (COVID-19) updated April15 2020
3. US CDC: Strategies to Mitigate Healthcare Personnel Staffing Shortages, updated April 30, 2020
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