

## **Annex 21: MANAGEMENT OF HEALTHCARE WORKERS (HCW's) DURING THE COVID-19 PANDEMIC**

### **A) GENERAL CONSIDERATION**

Healthcare workers (HCW's) play a vital role in public health interventions such as testing, diagnosis and treatment, patient care, field investigations etc. Patient care not only involves management of cases in the health clinics and hospitals but also includes management of cases in the Pusat Kuarantin dan Rawatan COVID-19 Berisiko Rendah (PKRC) as well as follow-up of positive cases who are being managed at home.

However, as of the 18<sup>th</sup> December 2020, there were 1,771 HCW's who contracted COVID-19 since the beginning of the pandemic. There was an increase of cases among HCW's during this 3rd wave which recorded more than 76.7% of the total number of HCW's with COVID-19 compared to the 2nd wave. As a whole, 1.2% of the HCW's in Malaysia have been infected and the number is increasing day by day.

In terms of the possible source of infection, cumulatively, 31% of the infections occurred due to exposure in the community which included family members and friends, 31% of the transmission occurred among HCW's at the workplace and 9% contracted the illness from patients.

The sharp increase of cases involving many contacts is stretching thin the MOH's capacity to deliver health care service. Therefore, it is pertinent for all HCW to strictly follow the Standard Operating Procedure (SOP) as highlighted in this document while working at the workplace and outside the workplace. These principles of management of HCW's may also be used by non-MOH medical and health facilities.

Given the current situation, the practice of new norms among the population is necessary in order to prevent the transmission of COVID-19. HCW's are also subject to new norms at the workplace.

In general, the new norms at the workplace for HCW's are as follows:

**1. The practice of Physical Distancing (at least 1 meter apart)**

- i) By limiting the number of personnel at counters at any one time
- ii) While taking history or when talking to a patient or family member
- iii) While at the nurse's station/ registration counter
- iv) While on break, purchasing food or having a meal at the pantry
- v) While at the waiting or common area
- vi) While at a workstation or in the on-call room
- vii) While praying at the designated room or prayer room
- viii) While in the toilet
- ix) During discussions or meetings
- ix) While on home visits, contact tracing
- x) By the use of social media platform for any meetings or training etc. where possible

**2. Hand Hygiene: Practice the 5 Moments of Hand Hygiene**

- i) Before touching a patient
- ii) Before clean/aseptic procedures
- iii) After body fluid exposure/risk
- iv) After touching a patient
- v) After touching patient's surroundings.

**3. Use of 3 Ply Surgical Mask**

- i) Use of 3 ply-surgical mask in non-clinical and common areas, e.g. pantry, surau, canteen, rest areas, etc.
- ii) If doing additional work shifts, the mask should be changed at the beginning of the shift.

**4. Use of Personal Protective Equipment (PPE)**

- i) Use of PPE as per recommendation
- ii) Use of a 3-ply surgical mask and face shield in all clinical areas even when managing or handling patients NOT diagnosed with COVID-19

- iii) Use of gloves as required
- iv) Ensure proper donning and doffing methods are followed
- v) Emphasis on fit testing and seal check for respirator use e.g. N95, KN95 etc.
- vi) Avoid unnecessary use of full PPE

(Refer to Annex 8 for further elaboration on Infection Prevention and Control Practice)

## 5. Screening, testing and follow-up of Healthcare workers

- i) Daily temperature and symptom screening on entering a premise or before work
- ii) HCW's Declaration Form for COVID-19
- iii) **COVID-19 screening of HCW's is carried out in selected target groups and mass screening need not be done routinely.** The need for screening of selected target groups will be based on risk assessment carried out.
- iv) **HCW's should be tested using RT-PCR**
- v) HCW's with acute symptoms compatible with COVID-19 should come forward for testing
- vi) Priority for testing should be given to HCW's with COVID-19 compatible symptoms
- vii) Follow up of HCW's on home surveillance to be carried out

## 6. Risk Communication

- i) Daily compulsory 10-minute risk communication session by supervisor (**Health Toolbox Sessions**) for HCW's including updated information or policies, information on incidences and reminders of precautions as well as safety and health measures before commencing work
- ii) Regular technical update sessions for staff e.g. Continuous Medical Education, Continuous Nursing Education, online notification, notice board etc.
- iii) Occupational Safety & Health (OSH) contact person to be available daily for consultation

**7. Integrated Services Strategy**

- i) Identify Liaison Officers for Hospital and District Health Office (PKD) for daily communication of cases
- ii) Integrated contact tracing and investigations of HCW's exposed or infected with COVID-19 by the OSH and PKD surveillance teams

**8. Specific Needs of Healthcare workers (OSH in coordination with supervisors)**

- i) OSH to identify pregnant HCW's, HCW's with pre-existing illnesses/ co-morbid conditions (e.g. chronic diseases), high-risk HCW's (e.g. immunocompromised)
- ii) Reschedule/ reorganize work tasks of the above groups accordingly to avoid exposure

**9. HCW compliance with SOP**

- i) Adherence to SOP is mandatory and applies to all HCW's regardless of their position.
- ii) If there is any violation or non-compliance, further action can be taken under the Prevention and Control of Infectious Disease Act 1988 (Act 342).

**B) SPECIFIC ACTIONS TO BE TAKEN****1. HCW's Providing Care to Patients with ILI/ SARI/ Suspected/ Probable/ Confirmed COVID-19**

- i) HCW's who are providing care to patients with ILI/ SARI/ Suspected/ Probable/ Confirmed COVID-19 should be monitored daily for symptoms by the OSH Unit or Safety and Health Committee of the healthcare facility. The monitoring form for HCW's exposed to COVID-19 at healthcare facility should be completed (Refer Appendix 1) for the period of monitoring.
- ii) The Occupational and Environmental Health Unit State Health Office (KPAS JKN) should send Appendix 1 to the Occupational and Environmental Health Sector, Disease Control Division, MOH. HCW's with high risk/ immunocompromised conditions should not be allowed to manage and provide care for SARI/ Suspected/ Probable/ Confirmed COVID-19 cases

## 2. HCW's confirmed positive COVID-19

2.1. All HCW's confirmed to be positive COVID-19 must be reported using 3 reporting systems:

- i) Communicable Diseases Notification using the Communicable Diseases Notification Form (Annex 7: Notification form)
- ii) Occupational Health Notification using WEHU L1/L2 (for lung involvement) form (Refer Appendix 2) or WEHU D1 (for other than lung involvement) (Refer Appendix 3)
- iii) Investigation Form of Healthcare Worker with COVID-19 Infection (Refer Appendix 4)

2.2. The list of COVID-19 positive HCW's should be kept in one register (Refer Appendix 5) which should be sent to State KPAS as per instructions. KPAS JKN should send Appendix 5 to the Occupational and Environmental Health Sector, Disease Control Division, MOH.

### 2.3. Contact Tracing Purpose and Responsibility

- i) Once an HCW becomes positive, identification of close contacts should be initiated immediately.
- ii) The purpose of contact tracing is to identify and monitor those who have been in close contact with the COVID-19 case.
- iii) This will lead to early identification and management of close contacts who themselves become cases and thereby leading to better clinical outcomes and also to prevent onward transmission to others.
- iv) Contact tracing is carried out in the following way:
  - a) Contacts of HCW's out of the workplace – by the Public Health team from PKD
  - b) Contacts of HCW's at the workplace - by OSH Unit and Public Health team together
  - c) Contacts of HCW's who are hospital in-patients - by infection prevention and control personnel in collaboration with Public Health team

**2.4.** Positive HCW's who are under home surveillance will be issued a Home Surveillance Order (HSO) and given a wrist band by an authorized person. They should follow the order strictly and stay at home until they are given a release order. They should avoid direct contact with other individuals and maintain good hygiene practices. The HCW's should conduct their daily health assessment using the MySejahtera app. OSH should monitor the HCW's who are under HSO on a daily basis and keep track of HCW's who are admitted or released from HSO. If there is worsening of symptoms, the HCW's should seek treatment immediately.

### **3. HCW with Exposure to A Patient with COVID-19 in A Healthcare Facility**

The OSH unit or the Safety and Health Committee should conduct an Exposure Risk Assessment on all HCW's with exposure to any patient with confirmed COVID-19 at the workplace, and advise them about their risk and symptoms of COVID-19.

#### **3.1. Exposure Risk Assessment**

When assigning the risk status, factors to be considered include:

- i) whether the HCW involved had an **Unprotected Exposure**  
-An **Unprotected Exposure** is considered when the HCW was not using the recommended PPE\* for the activity or situation when the exposure occurred.

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

- ii) whether the HCW was in **Close Contact** with the case (refer below: Close Contact Definition)

**Close Contact Definition:**

- a. HCW's who are exposed to positive patients:
  - Have any unprotected exposure of their eyes or mouth or mucous membranes, to the bodily fluid (mainly respiratory secretions e.g. coughing, but also includes blood, stools, vomit and urine) of a case, **OR**
  - Have a cumulative unprotected exposure during one work shift (i.e. any breach of PPE) for more than 15 minutes face to face (<1 metre 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 Aerosol Generating Procedure (AGP) is undertaken on the case
  
- b. Laboratory workers who have not fully adheres to good laboratory practice for cumulatively more than 15 minutes in one work shift, while testing positive patients' samples.
  
- c. 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, traveling together with COVID-19 patient in any kind of conveyance, living in the same household as a COVID-19 patient
  
- iii) whether an aerosol generating procedure (AGP)\*\* was performed  
*\*\*cardiopulmonary resuscitation, intubation, non-invasive ventilation, extubation, bronchoscopy, nebulizer therapy or sputum induction*
- iv) **source patient's control** (i.e. whether patient was on 3-ply surgical mask during the exposure which can efficiently reduce risk of droplet transmission)
- v) clinical symptoms of the patient (e.g., coughing likely increases exposure risk)

vi) the place where exposure occurred (e.g., a closed room with air conditioning such as an on - call or meeting room will increase the exposure risk)

vii) whether the exposure occurred while the case was in the **Infectious Period** (*an exposure during the **infectious period** is more likely to result in transmission*)

**Infectious Period** is defined as:

- from 48 hours before the onset of symptoms until 10 days after the onset of symptoms for symptomatic cases
- before the first positive test date until 10 days after the first positive test date for asymptomatic cases

(This infectious period definition is used for contact tracing purposes)

viii) **Incubation period** of COVID-19 is 14 days from last exposure date and this period of time can be taken into consideration for the purpose of symptoms monitoring

## 3.2. Management

### 3.2.1 Category risk

Depending on the exposure risk assessment, an exposed HCW shall be categorized as follows:

#### i) High-risk exposure

- **Unprotected exposure** where HCW's nose and mouth were exposed and close contact occurred with a COVID-19 patient during the infectious period with **no source control** (the patient was NOT on a 3-ply surgical mask), **OR**
- **Unprotected exposure** while present in the room when **AGP was performed** on a COVID-19 patient during the infectious period

#### ii) Medium-risk exposure

- **Unprotected exposure** where HCW's nose and mouth were exposed and close contact occurred with a COVID-19 patient during the infectious period with **good source control** (the patient was wearing a 3-ply surgical mask)
- Interactions (> 15 minutes AND/OR less than 1 metre distance) with a COVID-19 patient during the infectious period



**iii) Low-risk exposure**

- **Brief interactions** (< 15 minutes, more than 1 meter distance) with a COVID-19 patient during the infectious period
- **Protected exposure** while in close contact with a COVID-19 patient during the infectious period with **good source control** (the patient was wearing a 3-ply surgical mask)
- The use of **eye protection** in addition to a 3-ply surgical mask or respirator would further lower the risk of exposure.

**3.2.2 Recommended monitoring**

- i) HCW's with medium and high-risk exposure will undergo Active Follow-up by the OSH Unit or Safety and Health Committee
- ii) HCW with low risk exposure will undergo Passive Follow-up where they will monitor themselves for symptoms.
- iii) Active and passive follow-up are defined as follows:

**Active Follow Up**

- Daily surveillance by OSH unit or Safety and Health Committee (temperature and symptoms monitoring by phone) for 10 days
- Exclusion for work for 10 days
- On home surveillance order and given a wrist band
- Self-monitoring of symptoms for 14 days after completing home surveillance
- To inform during active follow up of any symptoms that develop

**Passive Follow up**

- Self-monitoring of symptoms for 14 days after exposure
- Asymptomatic HCW's to continue to work
- Symptomatic HCW's excluded from work for 10 days
- To contact the OSH unit or Safety and Health Committee if any symptoms develop

### **3.2.3 Risk Assessment and Management of Healthcare workers With Exposure to A Person with Confirmed COVID-19**

**Table 1 & 2** summarizes the category risks, recommended monitoring and outline of management for HCW's in different scenarios of exposure which may occur at a healthcare facility.

**RISK ASSESMENT AND MANAGEMENT OF HEALTHCARE WORKER WITH EXPOSURE TO A PERSON WITH CONFIRMED COVID-19 (TABLE 1)**  
(UPDATED ON 25<sup>TH</sup> JANUARY 2021)

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
<b>*Source person with confirmed COVID-19 wearing mask</b>				
1. Within 1 meter distance  <b>AND/OR</b>  2. Cumulative exposure more than 15 min during one work shift.	Wearing 3-ply surgical mask <b>with/without eye protection.</b>	<b>LOW (protected exposure)</b>	<ol style="list-style-type: none"> <li>Continue to work.</li> <li>No test required.</li> <li>Self-monitor symptoms for 14 days from exposure date, test immediately if symptoms occur.</li> </ol>	<ol style="list-style-type: none"> <li>Re-evaluate risk and symptoms.</li> <li>RT-PCR immediately.</li> <li>Exclude from work with MC until test result available and/or until acute symptoms improve.</li> </ol>
	Not wearing 3-ply surgical mask.	<b>MEDIUM (unprotected exposure)</b>	<ol style="list-style-type: none"> <li>Exclude from work with HSO for 10 days from exposure date</li> <li>RT-PCR at D3 post-exposure, repeat at D8 if 1<sup>st</sup> test negative.</li> <li>In the event of crisis and staff shortages, RTW may be allowed as soon as 2<sup>nd</sup> test (D8) is negative with strict daily monitoring by OSH/ authorized personnel and adherence to RTW practice.</li> <li>Self-monitor symptoms for 14 days from exposure date, test immediately if symptoms occur.</li> </ol>	<ol style="list-style-type: none"> <li>Exclude from work with HSO for 10 days from exposure date</li> <li>RT-PCR immediately.</li> <li>If 1<sup>st</sup> test negative and :               <ul style="list-style-type: none"> <li>still symptomatic, repeat test after 48 hours.</li> <li>symptoms have resolved, repeat test at D8 post exposure.</li> </ul> </li> <li>Strict daily monitoring by OSH/authorized personnel.</li> </ol>

**Source person** = A person who is a confirmed case of COVID-19

**RTW** = Return To Work

**RISK ASSESSMENT AND MANAGEMENT OF HEALTHCARE WORKER WITH EXPOSURE TO A PERSON WITH CONFIRMED COVID-19 (TABLE 2)**  
(UPDATED ON 25<sup>TH</sup> JANUARY 2021)

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
<b>*Source person with confirmed COVID-19 NOT wearing mask</b>				
1. Within 1 meter distance.  <b>AND/OR</b>  2. Cumulative exposure more than 15 min during one work shift.	Wearing 3 ply surgical mask <b>with eye protection</b> (face shield/goggle).	<b>LOW (protected exposure)</b>	1. Continue to work. 2. No test required. 3. Self-monitor symptoms for 14 days from exposure date, test immediately if symptoms occur.	1. Re-evaluate risk and symptoms. 2. RT-PCR immediately. 3. Exclude from work with MC until test result available and/or until acute symptoms improve
	Wearing 3 ply surgical mask <b>without eye protection</b> .	<b>MEDIUM (unprotected exposure)</b>	1. Exclude from work with HSO for 10 days from exposure date. 2. RT-PCR at D3 post-exposure, repeat at D8 if 1 <sup>st</sup> test negative. 3. In the event of crisis and staff shortage, RTW may be allowed as soon as 2 <sup>nd</sup> test (D8) is negative with strict daily monitoring by OSH/ authorized personnel and adherence to RTW practice. 4. Self-monitor symptoms for 14 days from exposure date, test immediately if symptoms occur.	1. Exclude from work with HSO for 10 days from exposure date. 2. RT-PCR immediately. 3. If 1 <sup>st</sup> test negative and :- - still symptomatic, repeat test after 48 hours - symptoms have resolved, repeat test at D8 post exposure. 4. Strict daily monitoring by OSH/authorized personnel.
	NOT wearing 3 ply surgical mask.	<b>HIGH (unprotected exposure)</b>	1. Exclude from work with HSO for 10 days from exposure date 2. RT-PCR at D3 post-exposure, repeat D8 if 1 <sup>st</sup> test negative. 3. Strict daily monitoring by OSH/ authorized personnel for 10 days 4. Self-monitor symptoms for 14 days from exposure date, test immediately if symptoms occur.	
3. Performing AGP.	NOT wearing full PPE with respirator (N95/PAPR).			

**\*Source person** = A person who is a confirmed case of COVID-19

**RTW** = Return To Work

### 3.2.4 Psychosocial Support and Counseling

Psychological support and counselling are to be provided for HCW's when needs arises. Mental health assessment and psychological first aid shall be conducted by the Mental Health and Psychosocial Support Team. Counselling services are to be provided upon request. All HCW's should be given mental health preparedness prior to pre-deployment. Post-deployment, HCW should receive a post deployment briefing and be given a Mental Health Alert Card (Refer to Annex 33).

### 4. HCW with Relevant Travel History

HCW's, who intend to travel internationally or have returned from overseas, should declare their travel to their respective Heads of Departments promptly. All current policies related to travellers during COVID- 19 pandemic are applicable (Refer Annex 2).

### 5. Asymptomatic HCW's Having Close Contact with A Suspected/ Probable Case or Person Under Surveillance (PUS)

- i) An asymptomatic HCW **having close contact with a Suspected or Probable Case of COVID-19**, should inform the supervisor immediately. Exposed HCW shall be excluded from work until RT-PCR result of the Suspected/ Probable case of COVID-19 is available. If the RT-PCR result of the Suspected/ Probable case of COVID-19 is negative, the HCW may return to work. Should any symptoms consistent with COVID-19 appear, the HCW should get tested. If the RT-PCR result of the Suspected/ Probable case of COVID-19 is positive, refer Annex 12 (Management of Closed Contacts of Confirmed Case) and testing should be carried out for the HCW.
- ii) Asymptomatic HCW **having close contact to PUS** may continue working however the HCW needs to follow the instructions below;
  - Strictly wear a surgical mask at all times while in the healthcare facility
  - Adhere to hand hygiene, respiratory hygiene, and cough etiquette
  - Movement should be restricted, continue self-isolation at home upon returning from work, avoid 3C and practice 3W
  - Ensure physical distancing while in closed and confined areas such as the pantry, on-call room or prayer room
  - **If symptoms (even mild) develop and are consistent with COVID-19**, immediately stop patient care activities and notify supervisor. HCW should be tested and managed accordingly.

## 6. HCW's with Acute Symptoms That Are Compatible with COVID-19 Without Any Identifiable Cause

An 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 tested.

## 7. HCW's with History of Recovered COVID-19 Infection and Re-tested Positive

HCW with a history of COVID-19 infection whose illness has recovered and was discharged from hospital as per discharge criteria in Annex 2 then been retested (as part of an enhanced testing program in a healthcare facility or for other indication) and results show 'COVID-19 detected' is **NOT** considered infectious. These HCW's can continue to work if they are asymptomatic. Based on current evidence, recovered COVID-19 patients who are later tested positive do not represent reinfection, hence they are not infectious. However, this is valid only for a period of 3 months.

## 8. Crisis Strategies to Mitigate Staffing Shortages

In the event of a critical shortage of staff, an exception to the recommended approach may be made for HCW's who may be required to return to work for essential services where there are no others who can carry out the duties. This should only be decided by the relevant health authorities after discussion with OSH at state level. Risk assessment must be carefully done by OSH Officer/ authorized personnel. In such scenarios:

- i) HCW should be evaluated to determine fitness to work.
- ii) **Asymptomatic** HCW's with **the Medium Risk Exposure** may be allowed to work if both their RT-PCR samples (**Day 3 and Day 8 post exposure**) are negative.
- iii) HCW's who return to work should adhere to **Return to Work Practices and Work Restrictions recommendations**.
- iv) For HCW's involved with management of immune-compromised patients such as cancer patients or patients on chemotherapy, the job description should be discussed with the relevant consultant and hospital director.

## 9. Return to Work Practices and Work Restrictions

The following guideline should be adhered to by HCW's returning to work:

- i) OSH should be notified upon returning to work
- ii) Staff Declaration Form should be filled upon returning to work (Appendix 6)
- iii) Strictly wear surgical mask at all time while in the healthcare facility
- iv) Adhere to hand hygiene, respiratory hygiene, and cough etiquette
- v) Movement should be restricted, continue self-isolation at home upon returning from work, avoid 3C and practice 3W
- vi) Ensure physical distancing while in confined closed areas such as pantry, on-call room or prayer room
- vii) Restricted from taking care of immunocompromised patients for the period of monitoring
- viii) Strictly daily monitoring of temperature and symptoms compatible with COVID-19 by OSH Officer/authorized personnel
- ix) 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

## 10. HCW who are issued Home Surveillance Order (HSO)

HCW who are issued with a Home Surveillance Order (HSO) and given a wrist band by an authorized person, should follow the order strictly be it at home or at a quarantine station until they are given a release order. They should avoid direct contact with other individuals and maintain good hygiene practices. They **should conduct the daily health assessment using the MySejahtera app**. OSH or the Safety and Health Committee should monitor the HCW's who are under HSO on a daily basis and keep track of HCW's who are admitted or released from HSO by using the format as in Appendix 7. KPAS JKN should send Appendix 7 to the Occupational and Environmental Health Sector, Disease Control Division, MOH.

## 11. HCW's with a household member who is under Home Surveillance Order (HSO)

HCW's with household members (family, friends, colleagues, and housemates) who are under HSO should strictly adhere to preventive measures such as;

- i) Avoid being in close proximity to them and ensure physical distancing of at least 1 meter
- ii) Wear surgical mask when interacting with them
- iii) Adhere to hand hygiene, respiratory hygiene, and cough etiquette

## 12. COVID-19 Vaccination among HCW's

HCW's who are providing critical care to those who are or might be infected with the virus that causes COVID-19 are at risk of being exposed to COVID-19 infection. HCW's who get infected with COVID-19 are not able to work and provide key services for patients or clients. As such they may also spread the virus to those they are caring for as well as to other healthcare personnel. Given the evidence of on-going COVID-19 infections among HCW's and the critical role they play in caring for others, continued protection of them at work, at home, and in the community remains a priority. Therefore, early access to vaccination is a critical addition to ensuring the health and safety of this essential workforce, protecting not only them but also their patients, families and communities.

- i) Post COVID-19 Vaccination Procedures for HCW's;

HCW's who have completed COVID-19 vaccination and are subsequently exposed to a person with COVID-19, may be allowed to go to work provided they meet **ALL** of the following criteria:

- I. It is at least two weeks after having received the second dose of a two-dose vaccine or one dose of a single-dose vaccine (fully vaccinated);
- II. They have not developed COVID-19 symptoms since their exposure.



However;

- I. self-monitoring of symptoms is to be continued for 14 days after exposure
- II. there is strict adherence to Return To Work (RTW) practices
- III. they are to get tested immediately if symptoms occur.

HCW's who **do not meet all the above criteria** should abide to the current available guideline and be quarantined accordingly.

ii) COVID-19 Vaccination and sample testing for HCW's;

HCW's who are fully vaccinated may not require sample testing if identified as a closed contact to a positive case unless risk assessment indicates that there is a need to do sample testing.

iii) COVID-19 positive among fully vaccinated HCW;

For a HCW who is already fully vaccinated and develops a positive COVID-19 result, the following additional measures need to be undertaken;

I. Case Investigation

Detailed investigations need to be carried out to determine susceptibility to infection and history of vaccination such as;

- Risk factors for diseases/ co-morbid conditions
- Severity of disease (clinical category)
- COVID-19 positive among close contacts
- SOP compliance
- Type of Vaccine received
- Vaccine batch number
- Vaccination Center (Pusat Pemberian Vaksin-PPV)

II. Virus isolation and sequencing for viability testing and genetic characterization

Samples should be sent for viral isolation and genomic sequencing to determine the viability of SARS-CoV-2 as well as genetic characterization of the virus. Genomic characterization of the virus is needed to rule out possible infection with Variants of

Concern (VOC) which is known to have mutations that confer some level of resistance to neutralizing antibodies. Samples [nasopharyngeal swab (NPS) and oropharyngeal swab (OPS)] that was initially positive for COVID-19, of fully vaccinated HCW and fresh NPS and OPS should be collected. Samples must be sent to COVID Samples Receiving Counter, Tingkat 1, Blok C, Unit Virologi, Institut Penyelidikan Perubatan, Kompleks Institut Kesihatan Negara, No 1, Jalan Setia Murni U13/53, Seksyen U13, Setia Alam, 40170, Shah Alam, Selangor.

### III. Blood sample for seroconversion test

For the purpose of ensuring the development of neutralizing antibodies towards SARS-COV2 virus in a fully vaccinated HCW, a seroconversion test is required. The test is able to detect and quantify SARS-CoV-2 neutralizing antibodies in vaccinated or infected person. Below are the requirements of sampling for the seroconversion study:

- Sample should be taken within two to three weeks post 2<sup>nd</sup> dose of vaccination
- Type of sample; blood serum
- Sample volume; 3 ml
- Container; gel tube or plain blood tube

Samples (blood or serum) must be sent to COVID Samples Receiving Counter, Tingkat 1, Blok C, Unit Virologi, Institut Penyelidikan Perubatan, Kompleks Institut Kesihatan Negara, No 1, Jalan Setia Murni U13/53, Seksyen U13, Setia Alam, 40170, Shah Alam, Selangor.

### IV. Audit of vaccine cold chain and injection procedures

An audit using existing audit format for cold chain and injection procedures should be carried out to determine any elements that could reduce the potency of the vaccine. At the same time, vaccine delivery method must be assessed to ensure that standard injection procedures were followed.



## Appendix 2

NOTIFICATION OF OCCUPATIONAL LUNG DISEASE		WEHU - L1 (JKKP 7)
Send to: Pengarah Kesihatan Negeri Jabatan Kesihatan Negeri _____		<b>Part B - Affected person</b>
<b>Part A - Notifier</b> (Regulation 7(2) Registered Medical Practitioner)		
Name _____		Name _____
Designation _____		Date of Birth      New IC/ Passport no. ____ / ____ / ____      _____ <small>DD    MM    YY</small>
Address of clinic / hospital _____		Nationality.      Gender _____ <input type="checkbox"/> Male <input type="checkbox"/> Female
Contact no.      _____		Ethnic Group      Occupation _____      _____
		Name and address of organization _____
		District      State _____      _____
		Location of incident      _____
Part C - Occupational Lung Disease		
Date of diagnosis      ____ / ____ / ____ <small>DD    MM    YY</small>		
Diagnosis/ Provisional diagnosis      _____		
Part D		
a) What kind of work did the patient do which may be associated with the disease? (Describe the work activities)		
b) What was the hazard or agent been exposed to the patient?		
c) How long had the patient been exposed to the hazard or agent?		
d) How long had the patient been experiencing the symptoms?		
Signature of Notifier      _____		Name and address of attending doctor (Official Stamp) _____
Date      _____		

\* Softcopy is available online at: <https://www.moh.gov.my/index.php/pages/view/994>

## Appendix 3

COPY FOR MINISTRY		<b>WEHU - D1 (JKKP 7)</b>	
<b>NOTIFICATION OF OCCUPATIONAL POISONING / DISEASE</b>			
Send to: Pengarah Kesihatan Negeri Jabatan Kesihatan Negeri _____		<b>Part B - Affected person</b>	
<b>Part A - Notifier</b> (Regulation 7(2) Registered Medical Practitioner)		Name _____	
Name _____		Date of Birth      New IC / Passport no. ____ / ____ / ____      _____ <small>DD    MM    YY</small>	
Designation _____		Nationality      Gender _____ <input type="checkbox"/> Male <input type="checkbox"/> Female	
Address of clinic / hospital _____		Ethnic Group      Occupation _____      _____	
Contact no.      _____		Name and address of organization _____	
		District      State _____      _____	
		Location of incident      _____	
<b>Part C - Occupational Poisoning / Disease</b>			
Date of diagnosis      ____ / ____ / ____ <small>DD    MM    YY</small>			
Diagnosis / Provisional diagnosis _____			
<b>Part D</b>			
a) What kind of work did the patient do which may be associated with the disease? (Describe the work activities)			
b) What was the hazard or agent been exposed to the patient?			
c) How long had the patient been exposed to the hazard or agent?			
d) How long had the patient been experiencing the symptoms?			
Signature of Notifier      _____		Name and address of attending doctor (Official Stamp)	
Date      _____		_____	

\* Softcopy is available online at: <https://www.moh.gov.my/index.php/pages/view/994>

## Appendix 4

**INVESTIGATION FORM OF HEALTHCARE WORKER WITH COVID-19 INFECTION**

1. Name:
2. IC Number:
3. Contact Number: Home: \_\_\_\_\_ Mobile: \_\_\_\_\_
4. COVID-19 ID (case number): \_\_\_\_\_
5. Age: \_\_\_\_\_
6. Gender: \_\_\_\_\_
7. Race: \_\_\_\_\_
8. Job Designation: \_\_\_\_\_
9. Job description: \_\_\_\_\_
10. Department: \_\_\_\_\_
11. Institution/ Hospital: \_\_\_\_\_
12. Vaccination status:
  - a. Non-vaccinated/ 1<sup>st</sup> Dose: date received \_\_\_\_\_/ 2<sup>nd</sup> dose: date received \_\_\_\_\_
  - b. Type of Vaccine received: \_\_\_\_\_
  - c. Vaccine batch number: \_\_\_\_\_
  - d. Vaccination center (SPV/PPV) : \_\_\_\_\_
13. Risk Factors: YES / NO (if yes please specify):  
 Hypertension/ Diabetes / Pregnancy / Obesity / Smoker / Vaper / COPD Heart Disease / Asthma / Malignancy / HIV / CKD / Chronic Liver Disease Bed bound / Others \_\_\_\_\_
14. Reason for COVID-19 screening (tick where appropriate)
  - a. Close contact with positive COVID-19 (patient/other staff/family/friends)
  - b. Attended an event which was related to a cluster
  - c. Screening at work
  - d. Travelled from foreign countries/ identified red zones
  - e. Acute symptoms compatible with COVID-19 without identifiable cause
  - f. Pre-procedure/ pre-operation/ pre-transfer

g. Self-initiative

15. Date of exposure (if known):

16. If symptomatic, date of onset of symptoms:

17. Specify the symptoms at presentation: (√)

<i>Fever</i>	
<i>Chills</i>	
<i>Rigors</i>	
<i>Myalgia</i>	
<i>Headache</i>	
<i>Sore throat</i>	
<i>Nausea or Vomiting</i>	
<i>Diarrhea</i>	
<i>Fatigue</i>	
<i>Nasal Congestion / Running Nose</i>	
<i>Cough</i>	
<i>Shortness of Breath</i>	
<i>Difficulty in Breathing</i>	
<i>Anosmia (loss of smell)</i>	
<i>Ageusia (loss of taste)</i>	

18. COVID-19 Test:

No.	Date (sampling date)	Day from Exposure	Type of Test (RT-PCR/RTK-Ag)	Result
1.				
2.				
3.				

19. Date of diagnosis (sampling date of first positive result):

20. Duration (in days) of exposure/ symptoms before date of diagnosis:

21. Source of infection, (select the appropriate answer)

a. Healthcare associated (most likely from patients)

- i. Work/ activity during exposure:
  - ii. PPE used during exposure:  
Head cover / Nursing cap / 3-ply surgical mask / N95 / Eye protection Isolation gown / Apron / Gloves / Boot cover / Shoe cover
  - iii. Is PPE used appropriate for the work or activity conducted: YES / NO
  - iv. Level of exposure risk: High / Medium / Low
- b. Staff to staff transmission (close contact)
- i. Possible reason/activity for transmission of COVID-19 (please specify): pantry / prayer room / on-call room / rest room / others
  - ii. Was PPE (3-ply surgical mask) used by both HCWs during interaction:  
YES / NO
  - iii. Level of exposure risk: High / Medium / Low
- c. Community acquired: family members / housemates / social interaction
22. Is the source of infection related to any cluster: YES / NO
23. If yes, which cluster:
24. Actions taken immediately after screening, while waiting for the result (tick where appropriate)
- a. Exclude from work and home quarantined - duration in days:  
(start and end dates):
  - b. Exclude from work and quarantined at quarantine center - duration in days:  
(start and end dates):
  - c. Allowed return to work with “Return to Work Practices And Work Restriction” (date):
25. Actions taken following positive COVID-19 result:
26. Treatment received:
27. Risk reduction strategies at workplace:

**Signature:**

**Stamp of OSH Officer:**

**Date :**



Appendix 5

FORMAT PEMANTAUAN PETUGAS KESIHATAN POSITIF COVID-19 DI FASILITI KEMENTERIAN KESIHATAN MALAYSIA

NEGERI: \_\_\_\_\_

Tarikh: \_\_\_\_\_

Bil	Nama	No. Kad Pengenalan	No. Telefon	Umur	Jantina	Bangsa	Co-morbid	Jawatan	Jabatan/ Unit	Nama Fasiliti	Penglibatan Dalam Pengurusan Pesakit COVID-19 (Ya/ Tidak), Jika Ya nyatakan tarikh terakhir	Tarikh Onset (gejala)	Nyatakan setiap Gejala (sekitarnya bergejala seperti demam, batuk, anosmia, loss of taste etc)	Tarikh Mendapat Rawatan	Tarikh Positif	Jenis Ujian (PCR/RTK Antigen)	Nilai CT (bagi Ujian PCR sahaja)	Hospital Tempet Rawatan	Jenis (Ward, ICU dll)

Status (Stabil/ VentiMask/ Nasal Prong/ Ventilator dll.)	Tarikh Keputusan Negatif	Rawatan AntiViral (Ya/nyatakan Jenis/ Tidak)	Hasil Rawatan (Dalam Rawatan/Sembuh & Discaj/ Meninggal)	Tarikh discaj (Sembuh/ Meninggal)	Tarikh Mula bertugas semula di PTJ	Kemungkinan Punca Jangkitan (Work Related/ Non-work Related)	Catatan (kaitan dengan kluster sedia ada, sejarah berada atau melawat zon merah, kontak dengan kes positif atau lain-lain)	Detail mekanisma dan tempat berlakunya jangkitan (pantri, ruang solat, changing room, car pool, kaunter, lif, toilet atau ruang gunasama lain, housemate dan lain-lain)	Total	+ve	-ve	pending	Kesan kepada perkhidmatan (servis ditutup/buka)	Tarikh dekontaminasi



**COVID-19 DECLARATION FORM (HEALTHCARE WORKER)**

*(Individual facility may amend the form according to the need of local setting)*

**ANSWER ALL QUESTIONS (TICK ✓ WHERE APPROPRIATE)**

<b>A. EPIDEMIOLOGICAL LINK</b>		<b>Yes</b>	<b>No</b>
1	Residing or working in an area/locality with high risk of transmission of virus: closed residential settings, institutional settings such as prisons, immigration detention depots ; anytime within the 14 days prior to sign and symptom onset If yes, please specify the area: _____		
2	Residing or travel to an area with community transmission anytime within the 14 days prior to sign and symptom onset If yes, please specify the area: _____		
3	Working in any health care setting, including within health facilities or within the community; any time within the 14 days prior to sign and symptom onset. If yes, please specify the health care setting: _____		
4	Linked to a COVID-19 cluster within the past 14 days prior to sign and symptom onset.		
5	Close contact to a confirmed case of COVID-19, within 14 days before onset of illness. If yes, please answer questions a to d:		
	a. 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).		
	b. Working together in close proximity or sharing the same classroom environment with a with COVID-19 patient		
	c. Traveling together with COVID-19 patient in any kind of conveyance		
	d. Living in the same household as a COVID-19 patient		

<b>B. SYMPTOMS</b>							
		<b>Yes</b>	<b>No</b>			<b>Yes</b>	<b>No</b>
1	Fever			8	Dyspnea		
2	Cough			9	Anorexia / Nausea / Vomiting		
3	General weakness /Fatigue			10	Diarrhea		
4	Headache			11	Altered mental status		
5	Myalgia			12	Sudden loss of smell (Anosmia)		
6	Sore throat			13	Sudden loss of taste (Argeusia)		
7	Coryza			<b>TEMPERATURE</b>		_____ °C	

Signature of Healthcare Worker:

Signature of Screening Officer:

Name: \_\_\_\_\_

Name: \_\_\_\_\_

IC Number: \_\_\_\_\_

IC Number: \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_

**STOP COVID-19!**

**YOUR HONESTY CAN SAVE MANY LIVES INCLUDING HEALTH CARE WORKERS.  
MAKE SURE YOU REGISTER IN MySejahtera**

**SENARAI PETUGAS KESIHATAN KKM YANG MENJALANI HOME SURVEILLANCE ORDER (HSO)**

NEGERI:

TARIKH:

Bil.	Nama Anggota	No Kad Pengenalan	No. Telefon Bimbit	Umur	Jantina	Jawatan	Unit/ Jabatan/ Klinik Kesihatan	Pejabat Kesihatan Daerah/ Hospital/ Jabatan/ Institusi	Jenis Kuarantin (Rumah/ Stesen Kuarantin/ Hotel)	Alamat Tempat Kuarantin	Co-morbid	Bergejala atau tidak bergejala (sekiranya bergejala masukkan tarikh onset)	Kategori risiko (high/medium/low/non identifiable)	Jenis Sampel diambil PCR/ RTK Ag/ Antibody (1st Sample)	Tarikh Sampel Diambil (1st sample)	Keputusan Sampel (1st sample)

Jenis Sampel diambil PCR/ RTK Ag/ Antibody (2nd Sample)	Tarikh Sampel Diambil (2nd sample)	Keputusan Sampel (2nd sample)	Jenis Sampel diambil PCR/ RTK Ag/ Antibody (3rd sample)	Tarikh Sampel Diambil (3rd sample)	Keputusan Sampel (3rd sample)	Tarikh Mula Kuarantin	Tarikh Tamat Kuarantin	Sebab staf dikuarantin (kontak rapat / saringan ILI / pulang dari Sabah/TEMCO/ etc nyatakan)	Nama Kluster (jika berkaitan)	Tarikh Kembali Bekerja	NOTA

**References:**

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4. 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 April 15 2020
5. US CDC: Strategies to Mitigate Healthcare Personnel Staffing Shortages, updated April 30, 2020
6. Press release: Findings from investigation and analysis of re-positive cases. 19 May 2020.  
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