

NATIONAL INSTITUTE OF FORENSIC MEDICINE MALAYSIA
GUIDELINES FOR HANDLING DEAD BODIES OF
SUSPECTED/PROBABLE/CONFIRMED COVID-19 DEATH

- A. GUIDELINES FOR TRANSPORT OF BODY WITH SUSPECTED/PROBABLE/CONFIRMED COVID-19 INFECTION FROM EMERGENCY DEPARTMENT OR WARD TO MORTUARY.**
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- C. GUIDELINES FOR POST-MORTEM EXAMINATION OF CASES DUE TO SUSPECTED/PROBABLE COVID-19 INFECTION.**
- D. GUIDELINES FOR THE DISPOSAL OF DECEASED IN CASES DUE TO SUSPECTED/PROBABLE/CONFIRMED COVID-19 INFECTION.**

(A) GUIDELINES FOR TRANSPORT OF BODY WITH SUSPECTED/PROBABLE/CONFIRMED COVID-19 INFECTION FROM EMERGENCY DEPARTMENT OR WARD TO MORTUARY

1. Bodies of suspected/probable/confirmed COVID-19 infection shall be sent from the Emergency Department or ward to the mortuary as soon as practicable.
2. Staff must wear the appropriate personal protective equipment and clothing (N95 or N100 masks, long sleeve fluid repellent disposable gown and gloves) while handling / preparing the body.
3. Relatives are **STRICTLY FORBIDDEN** to touch or kiss the body. The number of relatives allowed to view the body for identification must be minimized to 1 person. They must wear mask N95/N100, gloves and protective aprons. They should only be allowed to stand at a minimum of 1 meter from the body.
4. Relatives are **STRICTLY FORBIDDEN** to handle the body at any circumstances.
5. Body shall be prepared in the ward by the ward staff before conveying to the mortuary.
6. Body preparation;
 - 6.1 First layer :Wrap body with white cotton linen.
 - 6.2 Second layer :Place body in body bag.
 - 6.3 Third layer :Place body in body bag, then wipe with 0.5% sodium hypochlorite/disinfectant
7. Body transfer from the ward / ED shall be carried out by 2 attendants (one each from the ED/ward and mortuary). Both attendants must wear appropriate personal protective equipment (N95/N100, gloves and protective apron).
8. On arrival at the mortuary, the body must be immediately placed in a designated refrigerated body storage compartment.
9. Sampling for all suspected or probable COVID-19 cases shall be taken in Emergency Department or ward by respective team.
10. No autopsy to be performed for all confirmed COVID-19 dead bodies.

(B) GUIDELINES FOR MANAGEMENT OF BROUGHT IN DEAD (BID) CASES DUE TO SUSPECTED OR PROBABLE COVID-19 INFECTION.

1. Bodies of suspected or probable COVID-19 infection which are brought in dead shall be sent to the mortuary at the respective hospital.
2. The bodies must be placed in 2 layers body bag. The outermost body bag must be wipe with 0.5% sodium hypochlorite/disinfectant.
3. The receiving medical staff shall:
 - 3.1 Wear appropriate PPE.
 - 3.2. Obtain a police order (Polis 61) for post-mortem examination.
 - 3.3. Communicate/discuss the case with the forensic pathologist at the referral forensic centre to decide how to perform the post-mortem.
 - 3.4. Notify the case to the following **SIMULTANEOUSLY**:
 - 3.3.1. The National Crisis Preparedness and Response Centre.
 - 3.3.2. The respective State Health Department (JKN).
 - 3.3.3. The respective District Health Office (PKD).
4. Post-mortem examination of fatal suspected or probable infection with COVID-19 shall be conducted at the **RESPECTIVE HOSPITAL**.

(C) GUIDELINES FOR POST-MORTEM EXAMINATION OF CASES DUE TO SUSPECTED/PROBABLE COVID-19 INFECTION

1. Post-mortem examination, if indicated, of suspected or probable infection with COVID-19 shall be performed at the respective hospital.
2. For cases died in emergency department or ward (death in department, DID), the attending clinician shall obtain a written consent from next of kin for the clinical autopsy.
3. For BID case with post mortem order from police (Polis 61), post mortem examination shall be done by forensic pathologist.
4. Staff must wear personal protective equipment for highly infectious post-mortem while handling the body.
5. The post-mortem examination requires strict adherence to protocols and precautions on the use of recommended personal protective equipment (primary barriers) and autopsy room BSL 2 (secondary barriers).
6. Three or four trained personnel shall conduct the post-mortem examination. These personnel should comprise of a trained Forensic Pathologist/Histopathologist, a Medical Officer, a Forensic Medical Assistant and a Forensic Attendant. The specific task and functions of each team member shall be clearly defined as to who will be the prosector, who will be assisting during the post-mortem examination procedures and who will collect the specimens.
7. Respiratory tract specimen for COVID-19 PCR test and blood specimen for serology will be taken as early as possible and to be send to Pathology Department (Refer annex 4a and 5b of Interim Guidelines COVID-19 Management in Malaysia 2020).
8. During post-mortem examination, the following procedures must be strictly adhered:
 - 8.1. Only one person should dissect at any particular time.
 - 8.2. Prevention of percutaneous injury: Including never recapping, bending or cutting of needles and ensuring appropriate sharps container is available.

- 8.3. Absolute cleanliness must be followed. Spilling on the floor and soiling the aprons etc. should be avoided. In the event of spillage on the floor, wash immediately and clean with 1 in 10 sodium hypochlorite / disinfectant.
- 8.4. Adherence to strict and safe autopsy techniques is essential.
9. Specimens should be collected as per annex 5b.
10. Specimens collected should be managed as per annex 5c.
11. While stitching the body, make sure the staff uses a needle holder. After stitching, the body should be cleaned with water and followed by 0.5 % sodium hypochlorite or any suitable / recommended disinfectant.
12. The body shall be wrapped in 2 layered body preparation as follows:
- 12.1 First layer : Wrap body with a white sheet.
 - 12.2 Second layer : Place in body bag
 - 12.3 Third layer : Place in body bag, then wipe bag with 0.5% sodium hypochlorite
13. The body will be placed in the refrigerated body compartment before disposal.
14. The entire autopsy suite must be cleaned and mopped. All infected waste materials such as contaminated clothing of the body, linen and disposable items must be put in 2 layers yellow plastic bags. Instruments are washed thoroughly and immersed in 0.5% sodium hypochlorite. Autopsy table, workstation, floor and walls are to be cleaned thoroughly and then disinfected with the same 0.5% sodium hypochlorite solution.
15. The autopsy personnel must spray over their body with disinfectant before removing the Personal Protective Equipment (PPE). All disposable garments including the hood, coverall, gloves and aprons must be placed in the double layered yellow plastic bag for incineration. The respirator, blower and hose must be thoroughly sprayed and wiped with a disinfectant after removal, then left to dry in the storage or changing room.

(D) GUIDELINES FOR THE DISPOSAL OF DECEASED IN CASES DUE TO SUSPECTED/PROBABLE COVID-19 INFECTION

1. It is recommended that bodies of suspected or probable COVID-19 infection (after post-mortem examination) shall be disposed off (burial or cremation) as soon as practicable.
2. Religious body preparation must be conducted under supervision of the Environmental Health Officer.
3. Embalming must be avoided.
4. The release of the body to the relatives must be carried out with strict precautionary measures under the supervision of the Environmental Health Officer.
5. Relatives are prohibited from opening the sealed coffin and the Environmental Health Officer must ensure this precaution is strictly adhered.
6. All suspected or probable infection with COVID-19 bodies are recommended to be taken for burial or cremation directly from the mortuary, preferably within the same day of the post-mortem examination.

The Personal Protective Equipment (PPE) is the Protective Garments and the Respiratory Protection.

PROTECTIVE GARMENTS INCLUDE: -

- Disposable Scrub suit or equivalent.
- Disposable waterproof Coverall / jump-suit with full feet cover.
- Knee length Boots.
- Disposable shoe covers.
- Impervious full-length sleeve disposable plastic apron.
- Cut-resistant gloves.
- Double gloves (with the outer layer is elbow length gloves)

RESPIRATORY PROTECTION INCLUDE: -

Full faced *Powered Air Purifying Respirators* (PAPR) with HEPA filter (A loose fitting type is recommended). This respirator consists of a hood or helmet, breathing tube, battery-operated blower, and HEPA filters. It meets the CDC guidelines.

FORENSIC MEDICINE REFERRAL CENTER

Bil.	Hospital
1.	Hospital Kuala Lumpur
2.	Hospital Sultanah Bahiyah, Alor Setar, Kedah
3.	Hospital Pulau Pinang
4.	Hospital Raja Permaisuri Bainun, Ipoh, Perak
5.	Hospital Sungai Buloh, Selangor
6.	Hospital Serdang, Selangor
7.	Hospital Tengku Ampuan Rahimah, Klang, Selangor
8.	Hospital Seremban
9.	Hospital Melaka
10.	Hospital Sultan Ismail, Johor Bahru, Johor
11.	Hospital Sultanah Aminah, Johor Bahru, Johor
12.	Hospital Tengku Ampuan Afzan, Kuantan, Pahang
13.	Hospital Sultanah Nur Zahirah
14.	Hospital Raja Perempuan Zainab II, Kota Bharu, Kelantan
15.	Hospital Queen Elizabeth, Kota Kinabalu, Sabah
16.	Hospital Umum Sarawak, Kuching, Sarawak
17.	Hospital Miri, Sarawak

GUIDELINES FOR MANAGEMENT OF BROUGHT IN DEAD (BID) CASES OF SUSPECTED OR CONFIRMED CASE OF COVID-19 INFECTION

1. Bodies of suspected or confirmed COVID-19 which are brought in dead (BID) found in locations such as home, Institutions and streets etc., shall be sent to the mortuary as soon as practicable.

2. Steps to be taken by respective responsible personnel:

- i. The receiving personnel shall communicate/discuss the case with the forensic pathologist at the respective referral forensic centre to decide on how to manage the case.
- ii. Staff must wear the appropriate personal protective equipment whilst handling/preparing the body (Annex 8(i)).
- iii. Relatives are **STRICTLY PROHIBITED** from touching or kissing the body. Ensure the number of relatives allowed to view the body for identification should be limited to not more than 3 persons at a time. They must wear the appropriate personal protective equipment. They can only be allowed to stand at least 3 feet away from the body.
- iv. Relatives are **STRICTLY FORBIDDEN** to handle the body under any circumstances.
- v. The police shall call the district health office for assistance of the health inspector to ensure all precautionary measures are taken during transfer. Cordon the area.
- vi. The body should be placed inside a body bag (double) before being transferred to a designated hospital after in consultation with Forensic Specialist.
- vii. Body transfer by the police shall be carried out by 2 personnel (to minimize number of personnel). Both must wear appropriate personal protective equipment.
- viii. The police transportation lorry used to transfer the deceased must be decontaminated at the designated hospital as soon as the body is transferred.
- ix. The receiving personnel shall notify the following agencies **SIMULTANEOUSLY**:
 - ✓ The National CPRC, Ministry of Health.
 - ✓ The respective State Health Departments (JKN).
 - ✓ The respective District Health Offices (PKD).

3. Post-mortem examination of suspected or confirmed case of COVID-19 shall be conducted at the identified hospital after consultation with Forensic Specialist.

THE PERSONAL PROTECTIVE EQUIPMENT (PPE) ARE THE PROTECTIVE GARMENTS

Protective Garments Include:

- Disposable Scrub suit or equivalent.
- Disposable waterproof bodysuits/coverall.
- Disposable impervious long-sleeved full length gowns.
- Knee length Boots.
- Disposable boot covers.
- Cut-resistant gloves.
- Double gloves (with the outer layer being elbow-length gloves)
- N95 masks.
- Full face shield head gear/helmet.