MANAGEMENT OF THE DEAD

1. The following are guidelines for the management of the dead from avian influenza and from pandemic strain of the virus. In the case of a death of a confirmed case, it need not be a coroner’s case unless the case otherwise fits the criteria for a coroner’s case. Remains of influenza cases, or in whom influenza cannot be excluded, are to be managed in accordance with the guidelines below.

MANAGEMENT OF REMAINS OF CONFIRMED AVIAN INFLUENZA CASES (UP TO ALERT ORANGE)

2. In the pre-pandemic period, Alert GREEN to ORANGE, the measures focus primarily on the containment of the disease spread, serving as preventive measures against probable virus evolution, to pandemic strains, and are done in an effort to reduce the probability of exposure to individuals.

3. **Actions to be carried out by Healthcare workers (HCW).**
   
a. Notify Infectious Diseases (ID) physician on call

   b. Notify MOH

   c. Notify next-of-kin

   (1) Clearly and thoroughly explain to NOKs, informing them that there exists possibility of infection through handling of the body. Detailed descriptions and advices should be explained with care and appropriate discretion. Inform them that:

   (a) In order to safeguard public health, appropriate and mandatory precautions, relating to the handling of the body, may have to be taken and implemented. Cremation is advised but not mandatory. In cases where there are strong religious objections to certain procedures involved, exceptions may be permitted, on the condition that it is approved by the ID physician.

   (b) Embalming is not allowed.

   (c) For wakes, the body must be placed in a hermetically-sealed coffin and the lid of the coffin is not to be opened at any time. The body must be double-bagged, with exception to the facial region, to allow for viewing through glass “window” affixed on the coffin. Duration of wake proceedings should also be kept to the minimal due to the restriction of embalming.
d. Handling and transportation of the body

(1) In order to reduce the possibility of disease spread, the following should be observed by all HCWs:

(a) Proper personal protection must be employed to avoid direct contact with blood and body fluids from the body. These include:

- N95 masks,
- Impermeable gown or apron (or one-piece impermeable overall),
- Disposable gloves,
- Waterproof boots or disposable shoe covers.

(b) Only a minimum number of trained staff should be allowed to handle the body. Staff with open wounds or skin infections should be strictly prohibited from handling the body.

(c) Caution should be exercised when removing and disposing any intrusive devices, e.g. intravenous catheters. Wound drainage and needle punctures should be disinfected by 5% sodium hypochlorite.

(d) The body should be cleaned, dried, sprayed with 5% sodium hypochlorite and double-bagged prior to transportation to the mortuary.

(e) After each procedure, medical wastes and all protective clothing such as used gloves, gowns and etc must be placed in a sealed biohazard bag and incinerated whenever possible. Hands must be washed thoroughly. Reusable medical equipment should be sterilized through:

- Autoclave sterilization.
- Ethylene oxide sterilization for heat-sensitive equipment.

e. Alert the hospital Infection Control Committee.
4. **Actions to be taken by the ID physician-on-call.**
   a. Provide consultation to the physician-on-call for the completion of the cause of death form and any paper work for release of the body to the hospital mortuary.

   b. Check that appropriate samples have been taken from the person prior to death. If not, take the appropriate post-mortem specimens.

   c. Ensure appropriate infection control measures:
      
      (1) There should be in place a system to ensure that appropriate infection control procedures are observed by staff handling the body. Staff handling the body must wear N95 respirator mask, disposable gloves and impervious gown. These precautions should be observed by all staff, including ambulance staff.

      (2) All soiled linen should be handled as little as possible. It should be securely double-bagged, labeled “biohazard” and incinerated. Alternative methods for handling soiled linen are permitted, provided that there is minimal handling of the soiled linen and proper disinfection is carried out.

   d. **Responsibilities of the Infection Control Committee.** The Infection Control staff of the hospital concerned is to have a system in place to ensure that the ward and mortuary staff, and the undertakers have been briefed on the infection control measures listed above and that all infection control measures are followed during the handling, transfer of the body from ward to hospital mortuary, preparation of the body and casketing. Persons handling the body should be kept to a minimum.

5. **Actions to be taken by the mortuary staff.**
   a. Mortuary staff is to ensure that the body is double-bagged by the undertaker and that the coffin is hermetically sealed with silicon. The lid of the coffin is not to be opened at any time.

   b. Preparations for casketing and wake proceedings are to be carried out in the hospital mortuary, excluding cases of immediate cremation, where the mortuary staff is to ensure that the body is transferred immediately to the Crematorium for cremation.

   c. In handling the body, the mortuary staff should take note of the following:
      
      (1) Proper personal protection must be employed to avoid direct contact with blood and body fluids from the body. These include:
(a) N95 masks,

(b) Impermeable gown or apron (or one-piece impermeable overall),

(c) Disposable gloves,

(d) Waterproof boots or disposable shoe covers.

(2) Gloves, protective aprons/gowns and other waste materials must be disposed of in appropriate biohazard bags and incinerated whenever possible.

(3) Direct contact with blood and body fluids should be avoided. Staff with open wounds or skin infections should be strictly prohibited from handling the body.

(4) Autopsies on bodies which have died with infectious diseases should be avoided unless absolutely necessary. In such cases, the following should be observed:

(a) Such autopsies should only be performed by a trained pathologist using recommended barrier techniques and procedures.

(b) Only a minimum number of trained staff should be allowed to handle the body.

(c) After completion of examination, the body should be disinfected with 5% sodium hypochlorite and double-bagged. This is followed by a secondary sodium hypochlorite wipe down of the body bags and appropriate disposal thereafter.

6. Actions to be taken by the staff of funeral parlours/undertakers.

a. For bodies prepared for wake proceedings, casketing is carried out in the mortuary. To avoid potential infection, staff of funeral parlours/undertakers must observe the following:

(1) Proper personal protection must be employed to avoid direct contact with blood and body fluids from the body. These include:

(a) N95 masks,

(b) Impermeable gown or apron (or one-piece impermeable overall),
(c) Disposable gloves,
(d) Waterproof boots or disposable shoe covers.

(2) Gloves, protective aprons/gowns and other waste materials must be disposed of in appropriate biohazard bags and incinerated whenever possible.

(3) Only a minimum number of trained staff should be allowed to handle the body. Staff with open wounds or skin infections should be strictly prohibited from handling the body.

(4) Maintain minimal handling of the body and always prevent contacts of the eyes, mouth, or nose with hands when handling the body.

(5) Check the surfaces of the body for catheters, colostomy bags, etc, which may pose a problem with leakage of body fluids.

b. For immediate cremation, all orifices of the body should be plugged with cotton soaked with 5% sodium hypochlorite, with all exposed wounds, if present, covered with occlusive dressing. The body must be double-bagged, followed by a secondary sodium hypochlorite wipe-down of the body bags and placed in a hermetically sealed coffin, before transportation.

c. For bodies prepared for wakes, viewing of the deceased, through glass “window” affixed on the hermetically-sealed coffin, is allowed during the wake but the body must be double-bagged (with exception to the facial region).

d. For Muslims burial proceedings, the body must first be wrapped in a layer of burial cloth, and then placed in 2 heavy-duty plastic cadaveric bags. This should be followed by another 2 layers of burial cloth as a final dressing. The cadaveric body bags must be made of thick-plastic (PVC), have sides that are heat sealed and have a nylon zipper in the centre. Expedite burial and proceedings are highly recommended whenever possible.

e. Embalming is strictly not allowed.

f. Extreme care must be taken during the transportation of the coffin and throughout the wake to prevent breakage of the hermetic seal.

7. **Recommended actions to be taken by relatives of the dead.**

a. Contacts with the body should be avoided or kept to the minimal. When the need to handle the body arises, observe standard
precautions (protective clothing, hand hygiene, disposable gloves) and avoid direct contact with blood or body fluids from the body.

8. **Deaths in which avian influenza cannot be excluded.**

   a. For deaths in which influenza cannot be excluded, the above procedures are to be followed. All staff managing the patient or deceased body must adopt full infection control procedures.

**MANAGEMENT OF THE REMAINS OF SUSPECT OR CONFIRMED CASES OF PANDEMIC INFLUENZA (ALERT RED/ BLACK)**

9. In the event of Alert RED/ BLACK, the following precautions should be observed:

   a. PPE to be used by HCWs when removing the body from isolation room/ area

      (1) Particulate respirator, if HCWs remove the body immediately after the patient's death.

      (2) Surgical or procedure mask is sufficient, if air in the isolation room/area has been exchanged.

      (3) Disposable long-sleeved, cuffed gown, (waterproof, if outside of body is visibly contaminated with potentially infectious excretions or secretions). Alternatively, if no waterproof gown is available, a waterproof apron can be used.

      (4) Nonsterile, ambidextrous gloves (single layer) should cover cuffs of gown.

   b. If splashing of body fluids is anticipated:

      (1) Disposable head covers.

      (2) Face shield (preferably) or goggles.

   c. The body should be fully sealed in an impermeable body bag prior to removal from the isolation room/area and prior to transfer to pathology or to the mortuary.

   d. No leaking of body fluids should occur and the outside bag should be kept clean.

   e. After removing PPE, perform hand hygiene.

   f. Transfer to pathology or to mortuary should occur as soon as possible after death.
g. If the family of the patient wishes to view the body, they may be allowed to do so. If the patient died in the infectious period, the family should wear gloves and gowns and perform hand hygiene.

h. In the mortuary, mortuary staff and the burial team should use standard precautions when handling the body. This includes appropriate use of PPE and performance of hand hygiene to avoid unprotected contact with blood, body fluids, secretions, or excretions.

i. Embalming may be conducted as per routine by all embalmers.

j. Hygienic preparation of the deceased (e.g. cleaning, tidying of hair, trimming of nails, and shaving) may also be conducted.

k. If the family of the patient wishes to touch the body, they may be allowed to do so. If the patient died in the infectious period, the family should wear gloves and gowns and follow with hand hygiene.

l. If family members want to kiss or touch the body (hands, face) these body parts should be disinfected, using a common antiseptic (e.g. 70% alcohol).

m. If the family wants only to view the body and the face of the deceased, but not touch it, there is no need to wear any kind of PPE.

10. Appropriate adjustments and reviews to guidelines may be implemented following further studies into the evolution of the disease and etiological organism.