

Precautions for Handling and Disposal of Dead Bodies

Department of Health
Hospital Authority
Food and Environmental Hygiene Department
The 8th edition

**This set of guidelines is prepared by Infection Control Branch,
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Precautions for handling and disposal of dead bodies

Introduction

All dead bodies are potentially infectious and STANDARD PRECAUTIONS should be implemented for every case. Although most organisms in the dead body are unlikely to infect healthy persons, some infectious agents may be transmitted when workers are in close contact with blood, body fluids and tissues of dead body of person with infectious diseases. To minimize the risks of transmission of known and also unsuspected infectious diseases, dead bodies should be handled in such a way that workers' exposure to blood, body fluids and tissues is reduced. A rational approach should include staff training and education, safe working environment, appropriate work practices, the use of recommended safety devices and vaccination against hepatitis B.

There is a need to maintain the confidentiality of a patient's medical condition even after his/her death. At the same time, there is obligation to inform personnel who may be at risk of infection through contact with dead bodies so that appropriate measures may be taken to guard against infection. The discrete use of labels such as "Danger of infection" on the dead body is considered appropriate.

The following outline work practices are recommended when handling and disposing dead bodies. The objectives of drawing up this set of guidelines are: **(i) to enable the deceased's family to obtain funeral services, and (ii) to protect the involved personnel, e.g. workers and relatives.** Hospitals, public mortuaries, funeral parlours, undertakers of burials and staff on board conveyances are urged to adopt them in light of local circumstances and requirements. The adopted precautions should be widely disseminated to all staff involved.

Categorization of Dead Body

Based on the mode of transmission and risk of infection of different diseases, the following categories of precautions for handling and disposal of dead bodies are advised:

Cat. 1 : Signified by a BLUE label (Sample attached in Appendix 1).

Standard precautions are recommended.

For all dead bodies other than those with infectious diseases as listed under Categories 2 & 3.

Cat. 2 : Signified by a YELLOW label (Sample attached in Appendix 1).

Additional precautions are recommended.

For dead bodies with known

- (a) Human Immunodeficiency Virus infection (HIV)
- (b) Hepatitis C
- (c) Creutzfeldt-Jacob disease (CJD) without necropsy
- (d) Severe Acute Respiratory Syndrome (SARS)
- (e) Avian Influenza,
- (f) Other infectious diseases as advised by the physician i/c, the infection control officer or microbiologist.

Cat. 3 : Signified by a RED label (Sample attached in Appendix 1).

Stringent infection precautions are recommended.

For dead bodies with known

- (a) Anthrax
- (b) Plague
- (c) Rabies
- (d) Viral haemorrhagic fevers
- (e) Creutzfeldt-Jacob disease (CJD) with necropsy, and
- (f) Other infectious diseases as advised by the physician i/c, the infection control officer or microbiologist.

The summary table at Appendix 2 provides references to specific precautionary measures required under respective category.

General Recommendations for All Related Persons

A. Vaccination

Hepatitis B vaccination is recommended for ward staff, mortuary staff, funeral parlour, undertaker and other staff that is likely to come into contact with dead bodies.

B. Personal Protection Equipment and Personal Hygiene

1. Persons who handle dead bodies must wear protective clothing consisting of gown/apron and gloves. Protective clothing or uniform must be kept separate from outdoor clothing.
2. When handling dead bodies, do not smoke, eat or drink and avoid touching their own mouth, eyes or nose with their hands. Smoking, drinking and eating is forbidden in the autopsy room, body storage and viewing areas.
3. All cuts and abrasions should be covered with waterproof bandages or dressings.
4. Always observe strict personal hygiene especially hand hygiene which could be achieved by good hand washing or proper use of alcohol-based handrub.
5. Avoid direct contact with blood or body fluids from the dead body.
6. All efforts should be made to avoid sharps injury, both in the course of examination of dead body and afterwards in dealing with waste disposal and decontamination.
7. Hand hygiene should be performed thoroughly after removing gloves and protective clothing.

C. Accidental exposure to blood or body fluids

1. In case of penetrating injury or mucocutaneous exposure to blood or body fluids of the dead body, the injured or exposed areas should be washed with copious amount of running water. Minor penetrating injuries should be encouraged to bleed.
2. All incidents of exposure to blood or body fluids from the dead body, either parenteral or mucous membrane exposures, should be reported to supervisor. The injured person should immediately seek medical advice for proper wound care and post-exposure management.

D. Clinical Waste Management

Any substance, matter or thing that falls within the definition of clinical waste should be handled and disposed of properly according to the legal requirements. Items classified as clinical wastes as specify by the Environmental Protection Department should also be handled according to existing hospital/ clinic own procedures. The definition of clinical waste and its management has been set out in the Waste Disposal (Clinical Waste) (General) Regulation and the code of Practice for the Management of Clinical Waste from the Environmental Protection Department. <http://www.epd.gov.hk/epd/clinicalwaste/nonflash/english/downloads/document.html>

E. Disinfection of contaminated surfaces

All surfaces which may be contaminated with body fluid should be disinfected with 1 in 49 diluted household bleach* (mixing 1 part of 5.25% bleach with 49 parts of water), wipe surface leave for 15-30 minutes and then rinse with water; or wipe with 70% alcohol for metal surface. For surface contaminated with blood, wipe with 1 in 4 diluted household bleach* (mixing 1 part of 5.25% bleach with 4 parts of water), leave for 10 minutes and then rinse with water.

* Bleach solution must be freshly prepared.

Precautions for Specific Groups

F. WARD STAFF

F.1 Precautions for all dead bodies under **Category 1**

Dead body care

1. The body will be classified by attending physician as category 1, 2 or 3. Tags for classification of categories of dead bodies should be attached to body or body bag.
2. Wound drainage and needle puncture holes should be disinfected with 1 in 4 diluted household bleach (mixing 1 part of 5.25% bleach with 4 parts of water) and dressed with impermeable material.
3. Extreme caution should be exercised when removing intravenous catheters and other devices which are sharp. They should be disposed into puncture resistant containers.
4. Rectal orifice should be plugged with swabs soaked in 1 in 4 diluted household bleach (mixing 1 part of 5.25% bleach with 4 parts of water) while gentle suction is recommended for other body orifices such as nostril, to minimize defacing of deceased's general appearance.
5. The body should be cleaned and dried.
6. After identifying and attaching to the body the identity label and Cat. 1 tag, the body should be wrapped with mortuary sheet before being placed on mortuary trolley and transported to the mortuary.

Environmental Control

7. Items classified as clinical wastes should be handled according to existing hospital/ clinic own procedures (refer General Recommendation D).

8. All used linen should be handled with STANDARD PRECAUTIONS. Used linen should be handled as little as possible with minimum agitation to prevent possible contamination of the person handling the linen and prevent the generation of potentially contaminated lint aerosols in the areas. Laundry bag should be securely tied up. Staff should follow the hospital/ clinic own recommendation on handling of soiled/ infected linen.
9. Used equipment should be autoclaved or decontaminated with disinfectant solutions in accordance with established disinfectant policy.
10. All surfaces which may be contaminated should be wiped with disinfectant solutions in accordance with the recommended procedures (refer General Recommendation E).

F.2. **Additional precautions for handling dead bodies with Infectious Diseases listed under Category 2 or 3**

Dead body care

1. To obviate the need for the undertaker to handle the body, following F.1.1 - F.1.5, it is preferable for the ward staff to dress the deceased. Relatives should be alerted of the need to prepare clothing for the deceased. If the deceased's own clothes are not available, the ward staff should dress the deceased with a disposable gown or shroud, as a respectful way of care to the deceased.
2. Identify the body and attach to the body the appropriate identity label. The body should be placed in a robust and leak proof plastic bag of not less than 150 μ m thick, which should be zippered or closed tightly with tapes and bandage strips. Pins are not to be used.

3. The outside of the plastic bag, if soiled, should be wiped with disinfectant solutions in accordance with the recommended procedures (refer General Recommendation E).
4. After identifying and attaching to the outside of the body bag the Cat. 2 or Cat. 3 identity tags, the bagged body should be wrapped with mortuary sheet before being placed on mortuary trolley and transported to the mortuary.

G. MORTUARY STAFF

G.1 Precautions for all dead bodies under **Category 1**

Training

1. All staff should be trained in the prevention of infections. A high standard of personal hygiene should be adopted.

Dead body care

2. All bodies must be identified and correctly labeled with identity labels and Cat. 1 tags.
3. Dead body which is found soiled with blood or body fluids should be placed in a disposable plastic bag instead of linen.
4. Bodies should be stored in cold chambers maintained at approx. 4°C. Storage compartments should be easily accessible for both regular cleaning and maintenance.
5. Since each and every dead body brought to autopsy is a potential source of infection, at all times, pathologists and other support staff should observe **STANDARD PRECAUTIONS** in the performance of any autopsy.

Environmental Control

6. The mortuary must at all times be kept clean and properly ventilated. Lighting must be adequate. Surfaces and instruments should be made of materials which could be easily disinfected and maintained.
7. Items classified as clinical wastes should be handled according to existing hospital/ clinic own procedures (refer General Recommendation D).
8. All used linen should be handled with **STANDARD PRECAUTIONS**. Used linen should be handled as little as possible with minimum agitation to prevent possible contamination of the person handling the linen and prevent the generation of potentially contaminated lint aerosols in the areas.

Laundry bag should be securely tied up. Staff should follow the hospital/ clinic own recommendation on handling of soiled/ infected linen.

9. Environmental surfaces, instruments and transport trolleys should be decontaminated in accordance with General Recommendation E.

G.2 **Additional precautions for handling dead bodies with infectious diseases listed under Category 2 or 3**

In addition to precautions as listed in G.1 above, the following additional precautions should also be observed :

Dead body care

1. Autopsies on bodies which have died with infectious diseases as listed under category 2 or 3 expose staff to unwarranted risk and should generally not be performed. However, if autopsy is to be carried out because of special reasons, the following practices should be adopted :
 - i) It should be performed by a trained pathologist using recommended barrier techniques and procedures to reduce the risk of infection.
 - ii) The number of people allowed in the autopsy room should be limited to those directly involved in the operation.
 - iii) After completion of examination and local disinfection of skin with 1 in 49 diluted household bleach (mixing 1 part of 5.25% bleach with 49 parts of water), the body should be placed in a robust and leak proof plastic bag of not less than 150 μ m thick.
 - iv) The appropriate warning tag indicating Cat. 2 or 3 should be attached on the outside of the body bag.
 - v) The outside of the plastic bag should be wiped with

disinfectant solutions in accordance with the recommended disinfection procedures (refer General Recommendation E).

2. Mortuary staff should ensure that good liaison is maintained between themselves and those who collect the dead bodies for disposal. It is essential that staff of funeral parlours and all others involved in handling the dead body are informed of the potential risk of infection and the categorization of the dead body.

H. STAFF OF FUNERAL PARLOURS/ UNDERTAKERS/ STAFF ON BOARD CONVEYANCES

H.1 Precautions for all dead bodies under Category 1

In addition to the personal protective equipment and person hygiene in General Recommendation B, the following should be observed:

Environmental control

1. Make sure that a supply of disposable gloves, protective clothing, alcohol-based hand rub and disinfectant such as household bleach is readily available.
2. After use, the disposable items such as gloves and protective clothing should be disposed of in plastic bag. Linen contaminated with blood or body fluid should be soaked in freshly prepared 1 in 49 diluted household bleach (mixing 1 part of 5.25% bleach with 49 parts of water) for 30 minutes before washing.
3. Any spilled blood or body fluids must be wiped with disinfectant solutions in accordance with the recommended disinfection procedures (refer General Recommendation E).

H.2 Additional precautions for handling dead bodies with infectious diseases as listed under Category 2

In addition to precautions as listed in H.1 above, the following additional precautions should also be observed :

Dead body care

1. There should be minimal handling of the body.
2. Hygienic preparation of the deceased (such as cleaning of body, tidying of hair, trimming of nails and shaving) is not advisable.
3. If hygienic preparation is to be done, all the necessary precautions such as wearing gloves/ protective clothing should be strictly adhered.

4. Embalming should **not** be done.
5. Viewing of the face of the deceased without physical contact may be permitted.

H.3 Stringent precautions for handling dead bodies with infectious diseases as listed under Category 3

In addition to precautions under H.1 above, the following additional precautions should also be observed:

Dead body care

1. The body should **not** be removed from the plastic bag.
2. Unzipping the plastic bag of the body is **not** permitted.
3. Hygienic preparation should **not** be done.
4. Embalming should **not** be done.
5. Viewing of the face of the deceased should **not** be permitted.

I. STAFF HANDLING DEAD BODIES OF UNKNOWN CATEGORY

Staff such as Food and Environmental Hygiene Department (FEHD), who need to handle dead bodies with unknown categories, for example: person died while on board conveyances from land, sea or air or in the public area with unclear history or suspected infectious disease, should follow the precautions listed on H.1 and the following additional precautions should also be observed :

Dead body care

1. The dead body should be placed in a robust and leak proof plastic bag of not less than 150µm thick, which should be zippered or closed tightly with tapes and bandage strips.
2. Pins are not to be used.
3. An appropriate identity label should be attached to the body bag before transport to public mortuary or funeral parlour as the case may warrant.

J. RELATIVES OF THE DEAD

J.1 Precautions for dead bodies under **Category 1**

There should be minimal contact/handling of the body. When there is a need to do so, relatives should observe strict personal hygiene and put on appropriate personal protective equipment as in General Recommendation B.

J.2 Precautions for handling dead bodies with infectious diseases as listed under **Category 2**

In addition to precautions under J.1 above, the following additional precautions should also be observed:

1. Embalming is **not** to be done.
2. Viewing of the face without physical contact may be permitted.
3. Relatives who are worried about having already been exposed to the infection should contact the physician i/c for counselling.

J.3 Precautions for handling dead bodies with infectious diseases as listed under **Category 3**

In addition to precautions under J.1 above, the following additional precautions should also be observed:

1. The body should **not** be removed from the bag.
2. Unzipping of the body bag is **not** allowed.
3. Embalming should **not** be done.
4. Viewing of the face is **not** allowed.
5. Relatives who are worried about having already been exposed to the infection should contact the physician i/c for counselling.

Samples of stickers attached to body bag or dead bodies

Danger of Infection 小心傳染 Category **1**

• In handling dead bodies, Standard Precautions are required. 處理屍體時需要採取標準防護措施。

Bagging 入屍袋	Viewing in funeral parlour 殯儀館內瞻仰遺容	Embalming 防腐處理	Hygienic preparation in funeral parlour 殯儀館內裝身及化粧
Not necessary 不需要	Allowed 可以	Allowed 可以	Allowed 可以

Danger of Infection 小心傳染 Category **2**

• In handling dead bodies, Standard Precautions are required. 處理屍體時需要採取標準防護措施。
• In addition, the following precautions are also required: 此外, 下列附加的預防措施亦必須採納:

Bagging 入屍袋	Viewing in funeral parlour 殯儀館內瞻仰遺容	Embalming 防腐處理	Hygienic preparation in funeral parlour 殯儀館內裝身及化粧
Must 必須	Allowed 可以	Not allowed 不可以	Not advisable 不宜

Danger of Infection 小心傳染 Category **3**

• In handling dead bodies, **Standard** Precautions are required. 處理屍體時需要採取標準防護措施。
• In addition, the following precautions are also required: 此外, 下列附加的預防措施亦必須採納:

Bagging 入屍袋	Viewing in funeral parlour 殯儀館內瞻仰遺容	Embalming 防腐處理	Hygienic preparation in funeral parlour 殯儀館內裝身及化粧
Must 必須	Not allowed 不可以	Not allowed 不可以	Not allowed 不可以

Precautionary measures for handling and disposal of dead bodies

Risk category	Infection	Bagging	Viewing in funeral parlour	Embalming	Hygienic preparation in funeral parlour	Disposal of dead body
Cat. 1	Other than those specified in Cat 2 & Cat 3 below	Not necessary	Allowed	Allowed	Allowed	Coffin burial or cremation is optional
Cat. 2*	Human Immuno-deficiency Virus infection (HIV)	Must	Allowed	Not allowed	Not advisable	Cremation is not mandatory
	Hepatitis C	Must	Allowed	Not allowed	Not advisable	
	Creutzfeldt-Jacob disease without necropsy	Must	Allowed	Not allowed	Not advisable	
	Severe Acute Respiratory Syndrome (SARS)	Must	Allowed	Not allowed	Not advisable	
	Avian Influenza	Must	Allowed	Not allowed	Not advisable	
Cat. 3*	Anthrax	Must	Not allowed	Not allowed	Not allowed	Cremation is advisable
	Plague	Must	Not allowed	Not allowed	Not allowed	
	Rabies	Must	Not allowed	Not allowed	Not allowed	
	Viral haemorrhagic fevers	Must	Not allowed	Not allowed	Not allowed	
	Creutzfeldt-Jacob disease with necropsy	Must	Not allowed	Not allowed	Not allowed	

* Including other infectious diseases as advised by the physician i/c, the infection control officer or microbiologist

Explanatory Note:

- Bagging: placing the body in a plastic body bag for storage and transport.
- Viewing in funeral parlour: allowing the bereaved to see, and spend time with the body before encoffining.
- Embalming: injecting preservatives into the body to slow down the process of decay.
- Hygienic preparation in funeral parlour: cleaning and tidying the body so it presents a suitable appearance for viewing. Cosmetic work may be included.
- Disposal of dead body: usually by coffin burial or cremation.