

Technical Section J: Care of the Deceased

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Executive Summary

The MDH Mortuary Science Section is responsible for planning an effective response to emergency situations where death tolls overwhelm local mortuary resources. This response plan exists to provide assistance to cities and counties in the state in the care and preparation of human remains following a major disaster or emergency of natural or man-made origin. The MDH Mortuary Science Section will lead the response and will coordinate the disaster mortuary emergency response team (D-MERT).

In an influenza pandemic, the D-MERT will be activated to coordinate an effective response to a surge in death tolls where local mortuary services are overwhelmed.

Health and Human Services (HHS) Recommendations

Overview

Recommendations regarding the care of the deceased are identified from the Emergency Support Functions (ESF) of the Federal Emergency Management Agency (FEMA).

The recommendation states: “HHS may request the DHS and DOD to assist in providing victim identification and mortuary services; establishing temporary morgue facilities; performing victim identification by fingerprint, forensic dental, and/or forensic pathology/anthropology methods; and processing, preparation, and disposition of remains.”

Furthermore, as a part of the recommendation, HHS would be able to activate the National Disaster Medical System (NDMS).

Planning Activities

Rationale

Every day in Minnesota, approximately 105 deaths occur, totaling approximately 38,000 deaths annually. During a “worst Case” scenario, pandemic flu deaths are estimated to surge an additional 536 deaths per day for eight weeks reaching 30,000 in total. HHS has suggested that during a pandemic based on the worst-case scenario, Minnesota will experience 30,000 deaths over the course of an eight-week period (see **Attachment V**).

Currently, in the state there are:

- 550 funeral establishments,
- 1398 licensed morticians, funeral directors, and interns,
- 48 licensed crematories,
- 60 licensed cremation chambers (retorts); and
- 37 cremations a day.

Twenty-two of the licensed retorts in the state reside in the seven-county metropolitan area. In a 24-hour period, each metropolitan area retorts could cremate an average of 12 bodies a day for a total of 264 cremations per day. Cremations statewide could average 720 per day at full capacity.

Triggers

Pandemic alert period

- AI is identified in Europe.
- First case of human-to-human transmission is identified.

Pandemic period

- First known pandemic death occurs.

Actions

Interpandemic period

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| 1. Identify the D-MERT personnel to manage and plan the D-MERT response. |
| 2. Engage in planning with civilian licensees and the National Guard. |
| 3. Conduct training with volunteers and the National Guard. |
| 4. Develop and prepare required forms and documents that will be needed in a pandemic. |
| 5. Purchase the equipment to be needed in a pandemic. |
| 6. Educate the funeral industry in the state about pandemic influenza. |

Pandemic alert period

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| 1. Continue training with volunteers and the National Guard to address ongoing needs. |
| 2. Provide updated educational opportunities to the funeral industry in the state as the potential for a pandemic progresses. |
| 3. Stockpile PPE. |
| 4. Stockpile body bags/pouches. |
| 5. Begin operation of temporary morgues around the state. |
| 6. Notify volunteers and the National Guard of current needs related to the pandemic. |
| 7. Work with the MDH communications staff to educate and inform the public. |

Pandemic period

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| 1. Request activation of D-MERT from Commissioner of Health or Governor. |
| 2. Activate D-MERT plan. |
| 3. Work with volunteers to determine assignments. |

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| 4. Ensure proper infection control precautions are utilized including the safe handling and disposition of dead bodies (see below). |
| 5. Monitor the mental and emotional state of identified responders throughout the pandemic. |

Infection Control Recommendations

Safety procedures for pandemic influenza-infected human bodies should be consistent with those used for any autopsy procedure. In general, the acknowledged hazards of work in the autopsy room seem to depend more on contact with infected material, and particularly with splashes on body surfaces, than to inhalation of infectious material.

However, if the pandemic influenza-infected patient died during the infectious period, the lungs may still contain virus and additional respiratory protection is needed during procedures performed on the lungs or during procedures that may generate small-particle aerosols (e.g., use of power saws). Therefore, postmortem exams of pandemic influenza-infected patients should be conducted in a postmortem room using full barrier precautions.

Removal of the body from the isolation room/area

- Recommended personal protective equipment (PPE)
 - Respirator at least as protective as a NIOSH-certified N95, if HCWs remove the body immediately after the patient's death.
 - Fluid-resistant long-sleeved gown.
 - Non-sterile gloves, which cover the cuffs of the gown.
- If splashing/spraying of body fluids is anticipated, eye protection (face shield or goggles) should be used.
- 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.
- No leaking of body fluids should occur and the outside of the bag should be kept clean.
- After removing PPE, hand hygiene should be performed.
- If the patient's family wishes to view the body, they may be allowed to do so. If the patient died during the infectious period, the family should wear gloves and gowns and perform hand hygiene.
- If family members want to kiss or touch the body, these body parts should be disinfected, using a common antiseptic (e.g., 70% alcohol).
- Transfer to pathology or to the mortuary should occur as soon as possible after death.
- Cultural sensitivity should be practiced when a patient dies.

Postmortem examination

- Recommended PPE
 - Scrub suit.
 - Fluid-resistant long-sleeved gown.
 - Surgical mask, or if small particle aerosols might be generated during autopsy procedures, a particulate respirator at least as protective as a NIOSH-certified N95 respirator should be used.
 - Face shield or goggles.
 - Autopsy gloves (cut-proof synthetic mesh gloves) or two pairs of non-sterile disposable gloves.
- Recommendations to reduce aerosols in the autopsy room (e.g., lung excision)
 - Avoid the use of power saws;

- Conduct procedures under water if there is a chance of aerosolisation; and
- Avoid splashing when removing lung tissue.
- The number of HCWs present should be restricted to the minimum number necessary.
- The team should consist of at least two people wearing appropriate PPE.

PPE removal

- Remove PPE before leaving the autopsy suite and dispose of it in accordance with facility recommendations. Remove PPE avoiding contamination of hands. After removal of gloves, perform hand hygiene (use an alcohol-based hand rub or wash hands with soap and water).

Cleaning of surfaces after autopsy

- Surfaces that may have become contaminated with tissues or body fluids should be cleaned and disinfected by:
 - Removing tissue or body substances with absorbent materials;
 - Thorough cleaning of surfaces with water and liquid detergent;
 - Wetting the surface with an EPA-approved hospital grade disinfectant;
 - Allowing appropriate contact time (per manufacturer's recommendations); and
 - Rinsing thoroughly.

Engineering controls

- Whenever possible, perform autopsies of pandemic-influenza-infected bodies in settings that have an adequate air-handling system. This includes a minimum of 6 to 12 air changes per hour, negative pressure relative to adjacent areas, and direct exhaust of air to the outside or through HEPA filtration if recirculated. Exhaust systems around the autopsy table should direct air (and aerosols) away from HCWs performing the procedure (e.g., exhaust downward).
- Use containment devices whenever possible. Use biosafety cabinets for the handling and examination of smaller specimens. When available, use vacuum shrouds for oscillating saws or local exhaust ventilation to contain aerosols and reduce the volume of aerosols released into the ambient air environment.

Care of the deceased in the mortuary

- Mortuary staff should be informed that the deceased had pandemic influenza.
- If mortuary staff is responding to the death of a pandemic influenza patient who died at home, full barrier PPE should be used while in the home.
- In the mortuary, mortuary staff should use standard precautions when caring for the body. This includes appropriate PPE and performance of hand hygiene to avoid unprotected contact with blood, body fluids, secretions, or excretions, particularly during disinfection of mucous membranes.
- Minimize splashing and moving of body.
- Embalming may be conducted as per routine.
- Use infectious waste containers as required.
- Hygienic preparation of the deceased (e.g., cleaning of body, tidying of hair, trimming of nails, and shaving) should be conducted using standard precautions.
- The body in the body bag can be safely stored in the mortuary, sent to the crematorium, or placed in a coffin for burial. The body bag is primarily used for transport and storage of the body. The body may be removed from the body bag and handled using standard precautions, if necessary.

- If autopsy is being considered, the body may be held under refrigeration in the mortuary. Standard precautions should be used when handling the body; there is no further risk of airborne or droplet spread of pandemic influenza. After death, the risk of aerosol transmission can only occur through some autopsy and pathology procedures (e.g., lung excision). Any remaining risk of transmission would be due to contact with body secretions/excretions for which standard precautions still apply.
- If the family of the deceased wishes to touch the body, they may be allowed to do so. If the patient died during the infectious period, the family should wear gloves and gowns and follow with hand hygiene.
- If family members want to kiss touch the dead body (hands, face) these body parts should be disinfected, using a common antiseptic (e.g., 70% alcohol).
- If the family wants only to view the body of the deceased, but not touch it, there is no need to use PPE.
- Reviews/funerals of the deceased are allowed unless the Governor prohibits public gatherings. If the patient died during the infectious period the reviewal should be restricted to the immediate family.
- Routine burial or cremation of bodies is indicated.

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Roles and Responsibilities

State and local roles and responsibilities are identified below. Regional roles are also identified when applicable. This is not an exhaustive list. Furthermore, although roles and responsibilities are listed, the MDH recognizes that the infrastructure to support these planning efforts is evolving and may not yet be in place.

| State | | | |
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| | Roles and responsibilities | Coordinating entity | Explanation |
| D-MERT Plan | Develop statewide plan to respond to pandemic flu. | Primary D-MERT Coordinator | Plan would anticipate a “worst case” scenario of 30,000 deaths over an eight week period. |
| Training | Develop training materials. | Primary D-MERT Coordinator | Meet with local morticians, M.E./Coroners, public health facilities, etc. to roll out plan. |
| Forms | Develop forms, lists and other necessary documents | Primary D-MERT Coordinator | Prepare necessary paperwork to ensure effective response. |
| Collaboration | Maintain relationship with National, state and local partners. | Primary D-MERT Coordinator | Include national, state and local input for and critique of the plan. |

| State | | | |
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| | Roles and responsibilities | Coordinating entity | Explanation |
| Response | Lead mortuary response to pandemic flu outbreak. | Primary D-MERT Coordinator | Take lead role in responding to a pandemic flu outbreak when it is anticipated that death tolls will overwhelm local mortuary services. |
| Stockpiling | Stockpiling of key items. | Primary D-MERT Coordinator | The state may be able to receive better pricing on stockpiled items when purchasing in large quantities. If so, these items could then be distributed around the state to regional stockpile locations and so on to the local level. Examples of items are: PPE, body bags, and temporary storage containers. |
| Central Data Bank | Develop a web based central data bank. | Primary D-MERT Coordinator | The ability for health care facilities to report deaths once local mortuary services are overwhelmed is a key part of an effective response. The ability to track human remains from point of collection to time of final disposition is vital. The right for next of kin to know the location of their loved one is vital. A web based central data bank will help achieve this goal. |
| Health Care | Ensure health and safety of mortuary industry workers. | Primary D-MERT Coordinator | By seeking advice from state and national health care experts, develop and distribute information to mortuary industry workers to ensure their health care protection. |

| Local | | | |
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| | Roles and responsibilities | Coordinating entity | Explanation |
| Personnel | Retain adequately trained staff. | Primary Funeral home owner/manager Contributor Medical Examiners/ Coroners Health Care Facilities | On average, funeral homes will have a surge of up to 5 times their normal business at the same time as they may lose 40% of their staff due to illness or other responsibilities. Funeral home operators should identify and train employees/volunteers to assist in all areas of the funeral home operation (excluding embalming). Medical Examiner/Coroner offices as well as hospital and other health care facilities should make similar staff considerations in relation to deaths. MDH may seek relaxation of some regulated activities such as removals and arrangements for funeral homes, cremation approvals for medical examiners/coroners, etc. |
| Temporary Morgue Facility | Identify temporary morgue location. | Primary City or County Emergency Planner/Emergency Preparedness Coordinators Contributor Medical Examiners/ Coroners Morticians Hospital and nursing home administrators | In some areas of the state, mortuaries will not be able to keep pace with the surge in death tolls. Hospitals, nursing homes and M.E./coroner morgues would quickly fill to capacity. A building to act as a temporary morgue and central collection point may be needed for processing of the dead until such time as mortuaries are able to recover from the surge. MDH will offer guidance on location requirements. |

| Local | | | |
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| | Roles and responsibilities | Coordinating entity | Explanation |
| Temporary Cemetery | Identify temporary cemetery location. | Primary City or County Emergency Planner/Emergency Preparedness Coordinators Contributor Morticians Local cemetery officials | In some areas of the state, mortuaries will not be able to keep pace with the surge in death tolls. Temporary burial may be required until such time as final disposition can be planned by the next of kin and accomplished by the funeral home of choice. |
| Non-Institutionalized Deaths | Develop plan for non-institutional deaths. | Primary Medical Examiners/Coroners Contributor Morticians, law enforcement, emergency medical technicians, fire departments | When a death does not happen in a place where the decedent was under the care of a physician, the death is required to be reported to the local medical examiner or coroner in order for them to rule out foul play prior to movement of the body. During a pandemic, these officials may not have the manpower to respond to each and every home death or the like. An alternative method should be developed where the local authorities can determine the need for further examination of the body at one central location where a single medical examiner/coroner may process many bodies at once. For example: If/when a temporary morgue is activated, a single medical examiner/coroner could process many deaths. |

| Local | | | |
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| | Roles and responsibilities | Coordinating entity | Explanation |
| Death Certificates | Develop plan for timely processing of death certificates. | Primary Physicians Medical examiner/ coroners Medical record officers Contributors State Registrar Local registrars Morticians | During a pandemic, the timely processing of death certificates will be crucial for families who need to carry on with their legal affairs. Physicians or medical examiners/coroners are responsible for listing a cause of death on the work sheet (death certificate) prepared for them by the funeral home. Morticians initiate the “work sheet” which eventually becomes the death certificate. Ninety-five of all Minnesota licensed funeral homes are able to electronically submit the work sheet to the State Registrar. Some physicians and clinics are also able to submit the cause of death electronically. For those clinics and physicians not on the electronic system, causes of death are faxed into the State Registrar for manual data entry. |
| Cremation Approvals | Develop protocol for cremation approval. | Primary Medical examiner/ coroner Contributors Mortician Crematory operators | Prior to cremation, state law requires that approval be obtained from the medical examiner/coroner (as well as next of kin). During a pandemic, these officials may not have the manpower to approve cremations for deaths due to pandemic flu in addition to the regular requests for cremation approval. An option may be that for deaths due to pandemic flu, the requirement for medical examiner/coroner approval be waived. All other deaths would still require the medical examiner/coroner approval. |
| Stockpiling | Stockpiling of key items. During a pandemic, the ability to quickly obtain certain items will be essential. A central stockpile and distribution system should be developed. | Primary Morticians Contributors Medical examiner/coroners, health care facilities | PPE, body bags, and temporary storage containers are examples of items to be considered. |

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