# Mass Fatality Incident Management: Guidance for Hospitals and Other Healthcare Entities

August 2008

Developed in collaboration between the following Los Angeles County partners:

Department of Coroner

Department of Health Services, Emergency Medical Services Agency

Department of Public Health, Office of Health Assessment & Epidemiology, Data Collection & Analysis Unit

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## PURPOSE

A mass or multi-fatality incident (MFI) results in a surge of deaths above what is normally managed by normal medicolegal systems. In the event of a major disaster within Los Angeles County, it may be several days before the Department of Coroner, County Morgue, or private mortuaries can respond, process and recover decedents. The following guidelines have been developed to aid hospitals and other healthcare entities in their response to an MFI.

While this guidance is intended for use during a county-wide MFI, the principles can be applied anytime a hospital is experiencing a surge of deaths above what is normally managed by the hospital. These principles can also be used by any healthcare entity of any size to manage an MFI. The forms and checklists are designed to be personalized by your facility as needed.

This guidance includes information on preserving and safeguarding decedents, property, and evidence. It will also discuss the processes and issues for decedent identification, next of kin notification, death certificate processing, tracking, storage, and final disposition.

The goal of these guidelines is to enhance the ability of Los Angeles County and its healthcare partners to respond to and manage a surge in the number of decedents as a result of any disaster, including an influenza pandemic. While the importance of religious, cultural and mental health considerations is recognized, it is not addressed here. These guidelines focus on decedent processing for medical and legal reasons.

This guidance was developed in collaboration between the Los Angeles County Department of Coroner, Department of Health Services, Emergency Medical Services Agency (EMS), and Department of Public Health, Office of Health Assessment & Epidemiology, Data Collection & Analysis Unit. This document is available for download at the EMS Web site: http://ems.dhs.lacounty.gov/.

## ASSUMPTIONS

- The Los Angeles County Department of Public Health registers approximately 57,000 deaths/year.
- It is the duty of the Department of Coroner to determine the circumstances, manner and cause of all violent, sudden, or unusual deaths.
- A mass or multi fatality incident (MFI) results in a surge of deaths above which is normally managed by a community's usual medicolegal system.
- The Los Angeles County Department of Coroner is the lead agency to manage an MFI, however it is not solely responsible for all aspects of response to an MFI.
- Medicolegal systems may continue to experience a "normal" case load as well as the case load from the MFI with the possibility of an increase in accidental deaths (due to therapeutic complications and/or those resulting from the increased use and operation of motor vehicles/heavy equipment), homicidal (due to civil unrest), and/or suicide cases.
- The Department of Coroner, Department of Health Services, Department of Public Health, hospitals and other healthcare entities have limited fatality surge space or equipment.
- Federal or military assistance in fatality management may not be available to local jurisdictions in widespread incidents such as a pandemic.
- Disposition of human remains requires a death certificate.
- In all US jurisdictions, a treating or primary care physician is authorized to sign a death certificate provided the patient dies from natural causes and has knowledge of the causes of death.
- Human remains do not pose additional health risks to the community.
- Those who physically handle remains may be at risk of blood borne or body fluid exposure requiring universal precautions and proper training for handling the dead.
- It is more important to ensure accurate and complete death investigations and identification of the dead than it is to quickly end the response.
- The time to complete fatality management of a mass fatality event may exceed six months to a year.
- Mental health professionals, social service organizations and religious leaders will have to be educated in the mass fatality management process at all levels to ensure the process is understood and can be properly communicated to the general population in their response activities.

## COUNTY-WIDE COORDINATION

Mass fatalities may occur as the result of a variety of events, including natural disasters or disease outbreaks, large accidental incidents, or as the result of the intentional use of a chemical, biological, radiological, or explosive agent. Since an MFI is likely to result from a major incident, the Los Angeles County (LAC) Sheriff's Department has overall responsibility for managing the incident response, and the LAC Office of Emergency Management has overall responsibility for managing recovery.

The Department of Coroner is the lead agency on fatality management during a disaster, and has an established Emergency Response Plan. Included is an MFI Plan that outlines the actions to be taken by the Coroner and its relationships (via the Standardized Emergency Management System and Incident Command System) with the Operational Area (Los Angeles County), local, state and federal law enforcement, fire, hazmat, LAC Department of Public Health Data Collection and Analysis Unit, on such topics as team deployment, equipment, scene assessment, decedent transport, examining and processing, and body storage options. (Note: Federal or military assistance in fatality management may not be available to local jurisdictions in widespread incidents such as a pandemic.)

Each disaster scenario presents specific considerations, however all sudden and unexpected deaths as well as traumatic deaths fall under Coroner jurisdiction. A community-wide MFI, especially one due to a disease outbreak or other public health emergency may also fall under the jurisdiction of the Public Health Officer. Hospitals should stay alert for supplemental guidance on identifying the underlying cause of death or other significant conditions contributing to death. This information may be issued from the Department of Coroner or the Department of Public Health.

Hospitals will continue to interact and receive incident updates with Los Angeles County through the LAC Department of Health Services Emergency Medical Services Agency via established systems including the Medical Alert Center, ReddiNet, Hospital Emergency Administrative Radio (HEAR), and with the Department of Public Health through usual channels such as the Acute Communicable Disease Control Hospital Outreach Unit or the Health Alert Network (HAN).

## KEY CONTACTS

**Los Angeles County Department of Coroner**

- 24/7: 323-343-0714
- Renee GrandPre, Disaster Coordinator, RGrandPre@coroner.lacounty.gov

**Los Angeles County Department of Health Services Emergency Medical Services Agency**

- General: 562-347-1500
- 24/7 Medical Alert Center (MAC)
    - 323-722-8073
    - On Sept 02, 2008, the number changes to 866-940-4401
- http://ems.dhs.lacounty.gov

**Los Angeles County Department of Public Health**

Acute Communicable Disease Control

- For biological incident reporting, including suspect pandemic influenza
- Business Hours (Mon-Fri, 8:00am-5:00pm): 213-240-7941
- After Hours: 213-974-1234

Data Collection and Analysis Unit

- 213-240-7785; http://www.lapublichealth.org/dca
- Vital Records Office: 213-240-7816 (deaths)

**Los Angeles County Morgue / Decedent Affairs**

- 323-226-7161

**Los Angeles County Public Administrator's Office**

- General: 213-974-0404
- Investigation Unit: 213-974-0460
- http://ttc.lacounty.gov/Proptax/PA_openning.htm

**California Electronic Death Registration System (EDRS) Helpdesk**

- 916-552-8123
- https://ca.edrs.us (CA-EDRS login page)

## HOSPITAL MFI PLANNING OVERVIEW

### Joint Commission

While conducting hospital MFI planning is prudent and should be a part of all emergency management plans and emergency operations plans, it is also a new element in the 2008 Joint Commission Environment of Care Emergency Management Standards, EC.4.18: The organization establishes strategies for managing clinical and support activities during emergencies, specifically EC.4.18.5: The organization plans to manage the following during emergencies: mortuary services.

In 2009, MFI planning will be incorporated in the Emergency Management Chapter and included in Standard EM.02.02.11 which states that as part of its Emergency Operations Plans, the organization prepares for how it will manage patients during emergencies. Specifically in EM.02.02.11.7, the performance measure states that the Emergency Operations Plan describes the following: How the hospital will manage mortuary services.

### Hospital Preparedness Program

According to US Department of Health and Human Services Hospital Preparedness Program guidance (Target Measure H4.1), all HPP-funded hospitals will have a finalized written plan for mass fatality management by August 08, 2009. A finalized written plan is one that has received senior management approval. This plan should include at minimum, current information on (a) trained and available personnel; (b) equipment, supplies, facilities, and other material resources; and (c) operational structure and standard operating procedures for disposition of the deceased.

### Review Existing Hospital Resources and Plans/Policies/Practices

As part of the planning process, identify existing resources and procedures in place for the management of deaths at your facility. This may include your Decedent Affairs or Medical Records departments. Staff may already be familiar with and regularly use common forms such as the LAC Department of Coroner Form 18: Hospital and Nursing Home Facility Report and Form VS-11: Certificate of Death. They may already be trained on using the Electronic Death Registration System (EDRS). Also identify any formal or informal mass fatality or fatality surge plans that you may have. These may include memoranda of understanding (MOUs) with local mortuaries or refrigeration container companies. Many facilities have informal plans on managing a surge of fatalities, and these should be converted to written plans.

### Develop a Written Plan

The included Hospital MFI Plan checklist (see page 9) can be used to evaluate a current MFI plan or provide guidance in developing an MFI plan. And as always, be sure to train to and exercise the plan. The fact sheets and flow charts included in this guidance may be helpful when developing the plan and in conducting trainings.

## HOSPITAL MFI PLANNING: 10 QUESTIONS TO GET STARTED

"Death does not end human suffering, especially when death is sudden, as the result of a disaster. The death of a loved one leaves an indelible mark on the survivors, and unfortunately, because of the lack of information, the families of the deceased suffer additional harm because of the inadequate way that the bodies of the dead are handled. These secondary injuries are unacceptable, particularly if they are the consequence of direct authorization or action on the part of the authorities or those responsible for humanitarian assistance." *Mirta Roses Periago, Director, Pan American Health Organization*

1. What are the decedent management priorities of your organization? What key assumptions are these priorities based upon?

2. Does your organization have a written mass fatality plan in place? If so, who has the authority to activate these plans and/or procedures, and have you trained to the plan?

3. Do you have staff and resources identified that will be dedicated to mass fatality incident management?

4. What are the possible bottlenecks in the decedent processing procedures? Have any solutions been developed and/or implemented to mitigate these issues?

5. What is the capacity of your morgue? Do you have alternate on-site and off-site surge morgue capacity? Do you have memoranda of understanding in place (if applicable)?

6. Do you have staff and resources identified that will be dedicated to surge morgue management?

7. To what extent can technology assist with decedent processing?

8. Who in your organization or jurisdiction has the authority to make the decision to alter or change the current decedent processing and identification plan?

9. What legal hurdles, if any, does your organization or jurisdiction face when executing your mass fatality incident plan? How will your organization and jurisdiction deal with them to ensure that the processing of decedents is not delayed or otherwise stalled by legal matters?

10. What reputation management issues could arise if your facility does not adequately manage a mass fatality incident?

## HOSPITAL MFI PLANNING: SAMPLE TABLE OF CONTENTS

## HOSPITAL MFI PLANNING: CHECKLIST

This checklist was developed to help hospitals prepare and respond to a mass fatality incident regardless of cause. It is designed to be adapted to meet the unique needs and circumstances of your facility, and can be used as a tool for developing or evaluating MFI plans.

| 1. Written MFI Plan | | | |
|---|---|---|---|
| **Completed** | **In Progress** | **Not Started** | **Actions** |
| | | | MFI planning has been incorporated into disaster planning and exercises for the hospital. |
| | | | A written MFI plan has been developed. |
| | | | Primary and backup responsibility has been assigned for coordinating MFI planning.<br>Primary (Name, Title and Contact info):<br>_____<br>Backup (Name, Title and Contact info):<br>_____ |
| | | | A multidisciplinary planning committee has been identified specifically to address MFI planning exercising. |
| | | | Members of the MFI planning committee may include:<br>☐ Hospital administration<br>☐ Disaster coordinator<br>☐ Morgue operations<br>☐ Decedent affairs<br>☐ Medical records<br>☐ Infection control/hospital epidemiology<br>☐ Laboratory services<br>☐ Occupational health<br>☐ Legal counsel/risk management<br>☐ Public relations coordinator/public information officer<br>☐ Engineering and maintenance<br>☐ Environmental (housekeeping) services<br>☐ Central (sterile) services<br>☐ Security<br>☐ Information technology<br>☐ Expert consultants (e.g., ethicist, mental/behavioral health professionals, LCSWs)<br>☐ Other member(s) as appropriate (e.g., clergy, local coroner, medical examiner, morticians) |

| 1. Written MFI Plan | | | |
|---|---|---|---|
| **Completed** | **In Progress** | **Not Started** | **Actions** |
| | | | Points of contact for information on MFI planning resources have been identified within local government.<br>▪ LAC Dept of Coroner: Renee GrandPre, Disaster Coordinator, RGrandPre@coroner.lacounty.gov<br>▪ LAC DHS EMS Agency, Disaster Management Unit, 562-347-1500 |
| | | | The MFI plan identifies the trigger to activate the MFI Plan |
| | | | The MFI plan identifies the person(s) authorized to implement the plan and the organizational structure that will be used, including the delegation of authority to carry out the plan 24/7. |
| | | | The MFI plan includes a mass fatality incident management unit or similar management unit/team. |
| | | | Responsibilities of key personnel and departments within the facility related to executing the plan have been described. |
| | | | Personnel who will serve as back-up (e.g., B team) for key personnel roles have been identified. |
| | | | The MFI plan indicates to notify the LAC EMS Agency via the Medical Alert Center (866-940-4401) or ReddiNet, and who is responsible for making the notification. |
| | | | Tabletop exercise and/or other exercises have been conducted to test the plan.<br>Date performed: _____<br>Date performed: _____ |
| | | | A full scale drill/exercise has been developed to test the plan.<br>Date performed: _____ |
| | | | The plan is updated regularly and includes current contact information and lessons learned from exercises and drills. |
| | | | A list of mental/behavioral health, community and faith-based resources that will be available to provide counseling to personnel during an MFI. |

| 2. Mass Fatality Incident Management Unit | | | |
|---|---|---|---|
| **Completed** | **In Progress** | **Not Started** | **Actions** |
| | | | The plan identifies who is the lead to implement the hospital's MFI Plan. (Is this person the MFI Unit Leader?) |
| | | | Staff trained on EDRS have been identified. |
| | | | Location of the MFI Unit Administrative section has been identified. |

| 2. Mass Fatality Incident Management Unit | | | |
|---|---|---|---|
| **Completed** | **In Progress** | **Not Started** | **Actions** |
| | | | Equipment and supplies have been identified and/or procured for the MFI Unit Administrative section (review MFI Management Unit Equipment/Supplies Checklist on page 17). |
| | | | A process has been developed to identify decedents (such as taking a photo or fingerprint upon admission or immediately upon death) and maintaining records of the information (see sample Decedent Tracking Card on page 18). |
| | | | A process has been developed to track decedents (such as using a database, a tracking form (see page 19), or inputing into ReddiNet (if available). |
| | | | Responsibility has been assigned for maintaining communication with the hospital command center to receive mortality estimates in order to anticipate and supply needed administrative and morgue equipment. |
| | | | Responsibility has been assigned for communications with LAC Dept of Public Health (ACDC, Vital Records, or as needed) and monitoring public health advisories. |
| | | | Responsibility has been assigned for communications with LAC Dept of Health Services (EMS, MAC, ReddiNet, or as needed). |
| | | | Responsibility has been assigned for communications with coroner authorities (i.e., case reporting, status updates) during a disaster. |
| | | | Responsibility has been assigned for communications with next of kin. |
| | | | A protocol has been established to identify and protect decedent personal property and maintain chain of custody if identified as evidence. The Decedent Tracking Card (page 18) or similar form can be used to catalog this information. |

| 3. Morgue Surge | | | |
|---|---|---|---|
| **Completed** | **In Progress** | **Not Started** | **Actions** |
| | | | The plan identifies current morgue capacity: # and location (can also be labeled something like Primary Morgue) |
| | | | Identify surge capacity: # and locations (can also be labeled something like Secondary or Surge Morgues). |
| | | | May also identify a tiered level with triggers to add or change morgue locations. This may be a result of the number of decedents (escalation and de-escalation), new resources available, the viability of the current location, etc. |

| 3. Morgue Surge | | | |
|---|---|---|---|
| **Completed** | **In Progress** | **Not Started** | **Actions** |
| | | | Identify staff resources that may be needed (review Morgue Task Force recommendations on page 13) |
| | | | Identify supplies and equipment needed (review Surge Morgue Equipment and Supplies Checklist on page 34). |
| | | | A protocol has been developed to rapidly identify the location of where decedents are stored. For example, each decedent will have an 'address' such as Morgue Room 1, Row 2, # 5, or other such nomenclature. |
| | | | An infection control policy that requires morgue personnel to use Standard Precautions |
| | | | Hospital security personnel have input into procedures and a plan for securing access to morgue areas |

## HOSPITAL MASS FATALITY INCIDENT (MFI) MANAGEMENT UNIT

The purpose of a Hospital MFI Management Unit is to have a centralized location where all mass fatality information is being processed in your facility in response to a mass-casualty event, pandemic outbreak, terrorist attack, or large natural disaster. Functions include:

- Decedent identification (if not already done upon admittance)
- Family / next of kin notification
- Coroner, County morgue or mortuary notification/contact
- Tracking decedents who die in the hospital to disposition out of the hospital
- Managing morgue capacity
- Managing surge morgue capacity

It is suggested that the MFI Unit be located in the HICS Operations Section Medical Care Branch, and that the MFI Unit Leader reports directly to the Medical Care Branch Director. The MFI Unit will coordinate information with the Patient Registration Unit and the Casualty Care Unit, particularly for those patients identified as expectant. The MFI Unit will also coordinate information with the Planning Section Situation Unit Patient Tracking Manager. During a disaster, it may not be possible for your facility to staff all positions, however they are identified here to help illuminate the roles and responsibilities that should be addressed.

In addition to a MFI Unit Leader (see page 14 for a sample Job Action Sheet), recommended essential disciplines are identified in the table. Due to the sensitive nature of decedent processing, ensure all staff receive psychological support if needed. Be cautious in the use of hospital volunteers who may not have had experience or exposure to mass fatality situations.

| Administrative Task Force | Morgue Task Force |
|---|---|
| ▪ Decedent identification staff<br>▪ Decedent tracking staff<br>▪ Liaison to HICS Patient Tracking Officer and other HCC contacts<br>▪ Data entry staff to ReddiNet and EDRS<br>▪ Liaison to LAC DPH, other relevant County agencies, and mortuaries<br>▪ Liaison to families<br>▪ Death Certificate coordinator (a physician with responsibility to coordinate with other physicians to ensure death certificates are signed to expedite decedent processing)<br>▪ IT support | ▪ Morgue supervisor<br>▪ 1-2 morgue assistants (Minimum of two morgue task force members to safely move decedents)<br>▪ Infection control staff, as needed<br>▪ Morgue staff to maintain each morgue area<br>▪ Facilities/engineering to maintain the integrity of surge morgue areas<br>▪ Security for all morgues |

# MFI UNIT LEADER
# JOB ACTION SHEET

**Mission:** Collect, protect, identify and track decedents.

Date: _____ Start: _____ End: _____ Position Assigned to: _____ Initial: _____

**Position Reports to: Medical Care Branch Director** Signature: _____

Hospital Command Center (HCC) Location: _____ Telephone: _____

Fax: _____ Other Contact Info: _____ Radio Title: _____

| **Immediate (Operational Period 0-2 Hours)** | **Time** | **Initial** |
|---|---|---|
| Receive appointment and briefing from the Medical Care Branch Director. Obtain MFI Unit activation packet. | | |
| Read this entire Job Action Sheet and review incident management team chart (HICS Form 207). Put on position identification. | | |
| Notify your usual supervisor of your HICS assignment. | | |
| Determine need for and appropriately appoint MFI Unit staff, distribute corresponding Job Action Sheets and position identification. Complete a unit assignment list. | | |
| Document all key activities, actions, and decisions in an Operational Log (HICS Form 214) on a continual basis. | | |
| Brief MFI Unit staff on current situation; outline unit action plan and designate time for next briefing. | | |
| Confirm the designated MFI Unit area is available, and begin distribution of personnel and equipment resources. Coordinate with the Medical Care Branch Director. | | |
| Regularly report MFI Unit status to Casualty Care Unit Leader. | | |
| Assess problems and needs; coordinate resource management. | | |
| Use your Death Certificated Coordinator physician or request an on-call physician from the Casualty Care Unit Leader to confirm any resuscitatable casualties in Morgue Area. | | |
| Obtain assistance from the Medical Devices Unit Leader for transporting decedents. Assure all transporting devices are removed from under decedents and returned to the Triage Area. | | |
| Instruct all MFI Unit Task Force members to periodically evaluate equipment, supply, and staff needs and report status to you; collaborate with Logistics Section Supply Unit Leader to address those needs; report status to Medical Care Branch Director. | | |
| Coordinate contact with external agencies with the Liaison Officer, if necessary. | | |
| Monitor decedent identification process. | | |
| Enter decedent information in ReddiNet, if appropriate. | | |
| Assess need for establishing surge morgue facilities. | | |
| Coordinate with the Patient Registration Unit Leader and Family Information Center (Operations Section) and the Patient Tracking Manager (Planning Section). | | |

| Immediate (Operational Period 0-2 Hours) | Time | Initial |
|---|---|---|
| Contact the Medical Care Branch Director and Security Branch Director for any morgue security needs. | | |
| Document all communications (internal and external) on an Incident Message Form (HICS Form 213). Provide a copy of the Incident Message Form to the Documentation Unit. | | |

| Intermediate (Operational Period 2-12 Hours) | Time | Initial |
|---|---|---|
| Maintain master list of decedents with time of arrival for Patient Tracking Manager. | | |
| Assure all personal belongings are kept with decedents and/or are secured. | | |
| Assure all decedents in MFI Areas are covered, tagged and identified where possible. | | |
| Monitor death certificate process. | | |
| Meet regularly with the Casualty Care Unit Leader for update on the number of deceased; status reports, and relay important information to Morgue Unit staff. | | |
| Implement surge morgue facilities as needed. | | |
| Continue coordinating activities in the Morgue Unit. | | |
| Ensure prioritization of problems when multiple issues are presented. | | |
| Coordinate use of external resources; coordinate with Liaison Officer if appropriate. | | |
| Contact the Medical Care Branch Director and Security Branch Director for any morgue security needs. | | |
| Develop and submit a MFI Unit action plan to the Medical Care Branch Director when requested. | | |
| Ensure documentation is completed correctly and collected. | | |
| Advise the Medical Care Branch Director immediately of any operational issue you are not able to correct or resolve. | | |
| Ensure staff health and safety issues being addressed; resolve with the Safety Officer. | | |

| Extended (Operational Period Beyond 12 Hours) | Time | Initial |
|---|---|---|
| Continue to monitor the MFI Unit's ability to meet workload demands, staff health and safety, resource needs, and documentation practices. | | |
| Coordinate assignment and orientation of external personnel sent to assist. | | |
| Work with the Medical Care Branch Director and Liaison Officer, as appropriate on the assignment of external resources. | | |
| Rotate staff on a regular basis. | | |
| Document actions and decisions on a continual basis. | | |
| Continue to provide the Medical Care Branch Director with periodic situation updates. | | |
| Ensure your physical readiness through proper nutrition, water intake, rest, and stress management techniques. | | |
| Observe all staff and volunteers for signs of stress and inappropriate behavior. Report | | |

| Extended (Operational Period Beyond 12 Hours) | Time | Initial |
|---|---|---|
| concerns to the Employee Health & Well-Being Unit Leader. Provide for staff rest periods and relief. | | |
| Upon shift change, brief your replacement on the status of all ongoing operations, issues, and other relevant incident information. | | |

| Demobilization/System Recovery | Time | Initial |
|---|---|---|
| As needs for the MFI Unit decrease, return staff to their normal jobs and combine or deactivate positions in a phased manner, in coordination with the Demobilization Unit Leader. | | |
| Ensure the return/retrieval of equipment/supplies/personnel. | | |
| Debrief staff on lessons learned and procedural/equipment changes needed. | | |
| Upon deactivation of your position, brief the Medical Care Branch Director on current problems, outstanding issues, and follow-up requirements. | | |
| Upon deactivation of your position, ensure all documentation and MFI Unit Operational Logs (HICS Form 214) are submitted to the Medical Care Branch Director. | | |
| Submit comments to the Medical Care Branch Director for discussion and possible inclusion in the after-action report; topics include:<br>• Review of pertinent position descriptions and operational checklists<br>• Recommendations for procedure changes<br>• Section accomplishments and issues | | |
| Participate in stress management and after-action debriefings. Participate in other briefings and meetings as required. | | |

## Documents/Tools

- Incident Action Plan
- HICS Form 207 – Incident Management Team Chart
- HICS Form 213 – Incident Message Form
- HICS Form 214 – Operational Log
- Mass Fatality Incident Activation/Operational Plan
- Mass Fatality Incident / Morgue Unit Assignment List
- Fatality Tracking Form
- Decedent Information and Tracking Card
- Hospital emergency operations plan
- Hospital organization chart
- Hospital telephone directory
- Key contacts list (including Coroner, DPH, ReddiNet, LAC DMH, ARC, etc.)
- Radio/satellite phone

## MFI MANAGEMENT UNIT EQUIPMENT AND SUPPLIES CHECKLIST

Equipment and supplies for the MFI Unit may include the following. Be sure to identify where items are stored and how to access the storage area.

| Consideration | Consideration |
|---|---|
| **Distance from the morgue**<br>▪ Location of MFI Unit:<br>▪ Distance from Morgue:<br>*Notes*:<br><br>**Secure with limited access**<br>▪ # of security staff required:<br>▪ Security equipment required:<br>▪ Description of how access is limited:<br>*Notes*:<br><br>**Phone lines**<br>❑ Incoming phone<br>❑ Outgoing phone<br>❑ Fax machine<br>❑ Fax paper and toner<br>▪ Total number of phones:<br>*Notes*:<br><br>**ReddiNet and EDRS access/terminal**<br>❑ Laptop or desktop computer<br>❑ Access to internet<br>❑ ReddiNet access established<br>❑ EDRS access established (via internet for authorized individuals)<br>▪ Total number of computers:<br>*Notes*: | **Tables and chairs**<br>❑ # tables procured (based on layout needs)<br>❑ # chairs procured (based on layout needs)<br>*Notes*:<br><br>**Office supplies**<br>❑ Notepads, loose paper, sticky notes, clipboards<br>❑ Plastic sleeves<br>❑ Pens, pencils, markers, highlighters<br>❑ Stapler, staple remover, tape, packing tape, white out, paper clips, pencil sharpener<br>❑ Extension cords, power strips, surge protectors, duct tape<br>*Notes*:<br><br>**Printer and Copier**<br>❑ Printer and cables, copier<br>❑ Paper<br>❑ Toner<br>*Notes*:<br><br>**Forms and Documents**<br>❑ Hospital MFI Plan<br>❑ Decedent Information and Tracking Card<br>❑ Fatality Tracking Form<br>❑ EDRS "Medical Facilities Users' Guide" (download at www.edrs.us)<br>❑ Internal and external contact lists<br>*Notes*: |

Legend:
❑ Check boxes to indicate completion
▪ These bullets require you to add your information

INSERT HOSPITAL NAME OR LOGO
Hospital Address
Telephone and Fax Numbers

First Letter of Decedent Last Name: _____

# DECEDENT INFORMATION AND TRACKING CARD

| **INCIDENT NAME** | | **OPERATIONAL PERIOD** | | |
|---|---|---|---|---|
| **MEDICAL RECORD / TRIAGE #** | **DATE** | **TIME** | **HOSPITAL LOCATION PRIOR TO MORGUE** | |
| **FIRST** | **MIDDLE** | **LAST** | **AGE** | **GENDER** |

**IDENTIFICATION VERIFIED BY**

□ DRIVERS LICENSE □ STATE ID □ PASSPORT □ BIRTH CERTIFICATE □ OTHER:_____

IDENTIFICATION #: _____

**ADDRESS (STREET ADDRESS, CITY, STATE, ZIP)**

| **LISTED IN REDDINET** □ YES □ NO | **RECORD CREATED IN EDRS** □ YES □ NO | **DEATH CERTIFICATE SIGNED** □ YES □ NO |
|---|---|---|

| **PHOTO ATTACHED TO THIS CARD** □ YES □ NO | **FINGERPRINTS ATTACHED TO THIS CARD** □ YES □ NO |
|---|---|

| **NEXT OF KIN NOTIFIED?** □ YES □ NO | **NAME** | **RELATION** | **CONTACT TEL** |
|---|---|---|---|
| STATUS | LOCATION | DATE / TIME IN | DATE / TIME OUT |
| **HOSPITAL MORGUE** | | | |
| **HOSPITAL MORGUE** | | | |
| **HOSPITAL MORGUE** | | | |
| **HOSPITAL MORGUE** | | | |
| FINAL DISPOSITION | DATE / TIME | NAME OF RECIPIENT | SIGNATURE OF RECIPIENT |
| **RELEASED TO:** □ CORONER □ COUNTY MORGUE □ MORTUARY □ OTHER: _____ | **DATE** **TIME** | | |

| **LIST PERSONAL BELONGINGS** | **STORAGE LOCATION** |
|---|---|

ORIGINAL ON FILE IN MFI UNIT
COPY WITH DECEDENT
COPY TO MEDICAL CARE BRANCH DIRECTOR

Form Revised: May 2008

## FATALITY TRACKING FORM

Adapted from HICS Form 254.

| INCIDENT NAME | | | | DATE / TIME PREPARED | | | | OPERATIONAL PERIOD DATE/TIME | | |
|---|---|---|---|---|---|---|---|---|---|---|
| MRN OR TRIAGE NUMBER | NAME | SEX | DOB/ AGE | NEXT OF KIN NOTIFIED YES / NO | ENTERED: YES / NO | | HOSPITAL MORGUE | | FINAL DISPOSITION, RELEASED TO: | |
| | | | | | REDDINET | EDRS | IN DATE/TIME | OUT DATE/TIME | CORONER, MORTUARY, COUNTY MORGUE, OR OTHER (LIST) | DATE/TIME |
| | | | | | | | | | | |
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| | | | | | | | | | | |
| COMPLETED BY HOSPITAL MFI UNIT | | | NAME | | | | | | | |

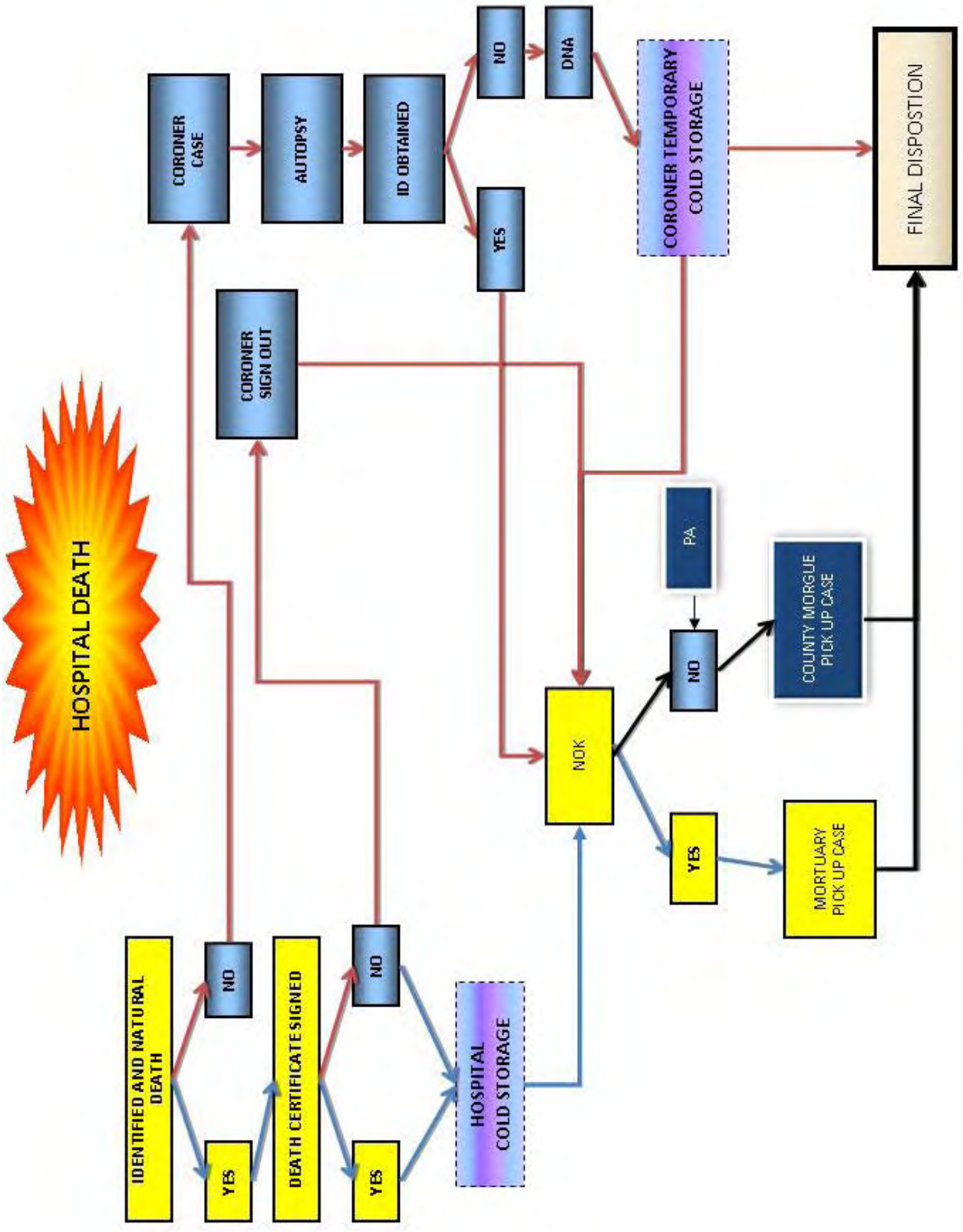
**Purpose:** Account for decedents in a mass fatality disaster **Origination:** Hospital Mass Fatality Unit **Copies to:** Patient Registration Unit Leader and Medical Care Branch Director

## DECEDENT PROCESSING – POTENTIAL BOTTLENECKS

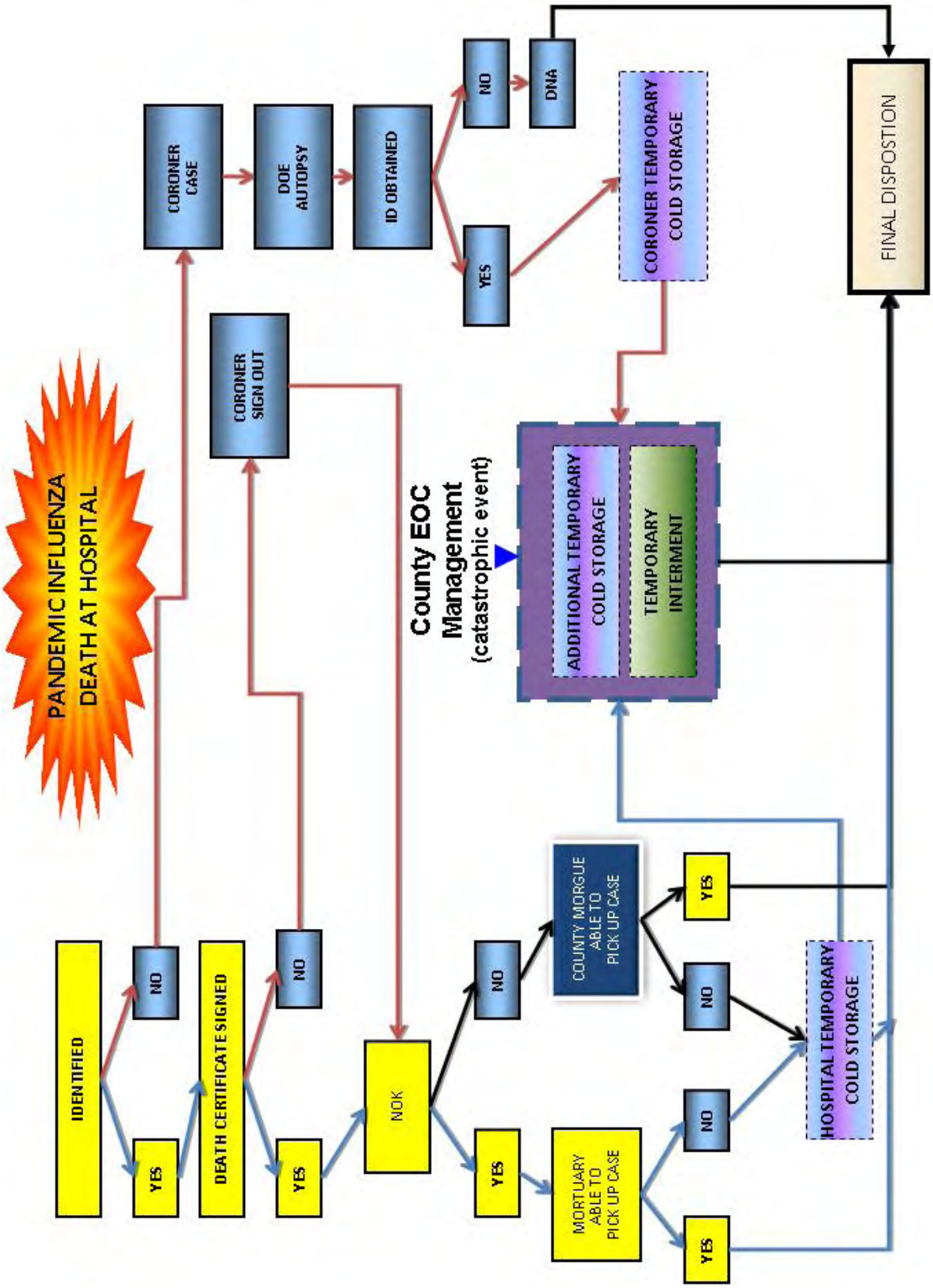
Our goal is to ensure efficient, timely and respectful decedent processing from death to final disposition.

| Problem | Solutions |
|---|---|
| **Decedent Identification**<br>The lack of identification impedes the process of identifying next of kin. | ▪ Verify identification with a photo ID<br>▪ To confirm identification or to assist in identification at a later date, upon hospital admittance or immediately upon death:<br>  ▪ Take a photo (before decomposition sets in)<br>  ▪ Get fingerprints<br>  ▪ Collect X-rays or dental records |
| **Next of Kin (NOK)**<br>The lack of identifying NOK or being able to contact NOK delays the process of identifying desires for final disposition (and out of the hospital), such as which mortuary to contact | ▪ Identify NOK and contact information while the patient is still alive (perhaps upon admittance)<br>▪ Contact LAC Public Administrator's Office |
| **Death Certificate**<br>Reluctance by physicians to sign the death certificate can impede the process of a decedent being released for final disposition (and out of the hospital) | ▪ Conduct education on what it means to sign the death certificate<br>▪ During a disaster, identify a single physician who will serve as the a death certificate coordinator (a physician with responsibility to coordinate with other physicians to ensure death certificates are signed to expedite decedent processing) |
| **Decedent Tracking**<br>Hospitals may need to store remains for a short term until next of kin can be identified/notified or final disposition has been identified. A system of knowing who and where the decedents are will be crucial to expedite community-wide decedent processing. | ▪ Use a form similar to the Decedent Information and Tracking Card to consolidate information about each decedent (see page 18)<br>▪ Develop a form or process to track all decedents (such as the form on page 19) or electronic database<br>▪ If ReddiNet is being used by the County to track decedents, ensure staff know how to use ReddiNet, however the hospital will need to maintain its own records<br>▪ Develop an address or locator process to quickly identify where a decedent is being stored (such as Surge Morgue 1, Rack 3, Tier 2). This can also be monitored on the Decedent Tracking Card if the decedent needs to be moved from one morgue area to another within the facility. |
| **Property/Evidence**<br>Depending on the incident, the decedent's property may be evidence of a crime. It will need to be collected and maintained for proper transfer to authorities. | ▪ Identify decedent's property and where it is located if not co-located with the decedent. The Decedent Tracking Card or similar form can be used to catalog this information. |

## FLOW CHART: DEATH AT A HOSPITAL



## FLOW CHART: PANDEMIC INFLUENZA DEATH AT HOSPITAL



# FACT SHEET

# DEATH CERTIFICATES

## Los Angeles County Department of Public Health, Data Collection & Analysis Unit

The Data Collection and Analysis Unit is responsible for the collection and processing of state mandated data, including births, deaths, and communicable disease for deaths occurring in Los Angeles County (excluding the cities of Long Beach and Pasadena). This unit also provides statistical reports based on vital records, public health clinic caseloads, and other health status indicators derived from public health data for Los Angeles County. The LACDPH registers approximately 57,000 deaths every year.

## ABOUT DEATH CERTIFICATES

- Permanent legal record of fact and cause of death
- Identifies deceased individual
- Includes demographic information of the deceased
- Specifies final disposition of the body
- Specifies the cause of death of the deceased
- Provides information about the funeral director and medical certifier completing the record
- Used for both administrative and public health analytical needs
- Necessary for the family to handle the business matters of the decedent
- If there is no family to take care the matters of the decedent, it becomes a public case and the disposition of the decedent is handled by the Public Administrator's Office under the Los Angeles County Office of the Treasurer and Tax Collector.
- Source of mortality statistics at national and jurisdictional levels
- Data used to:
    - Allocate research and development funding
    - Establish goals related to public health
    - Measure health status

## FACTS ABOUT SIGNING THE DEATH CERTIFICATE

- Physicians must complete the medical portion of the death certificate within 15 hours of the death event
- The causes of death are the physician's opinion regarding the death
- The physician is legally responsible to complete the medical portion of the death certificate
- The causes of death on the death certificate are not legally binding in and of themselves; the entire death certificate is the legal document
- The physician is not obligated to sign the death certificate if he/she determines that there was possible something unnatural about the cause of death – these should be referred to the Coroner

## Websites

- **Los Angeles County Department of Public Health, Data Collection & Analysis Unit:** http://www.lapublichealth.org/dca
- **Instructions for Completing the Cause-of-Death Section of the Death Certificate**, CDC National Center for Health Statistics: http://www.cdc.gov/nchs/data/dvs/blue_form.pdf

# FLOW CHART

## DEATH CERTIFICATE PROCESS

For deaths occurring in Los Angeles County (excluding cities of Long Beach and Pasadena).

**Death Certificates (DC)**

- DC applications filled out either on paper or via the CA-EDRS (Electronic Death Registration System) by funeral directors, hospitals, or by the Coroner.
- Physician or Coroner attests to the causes of death after medical review by LAC Public Health Registrar.
- Once DC is complete, funeral directors or the Coroner file DC applications (including out of state residents) with LAC Public Health Registrars.

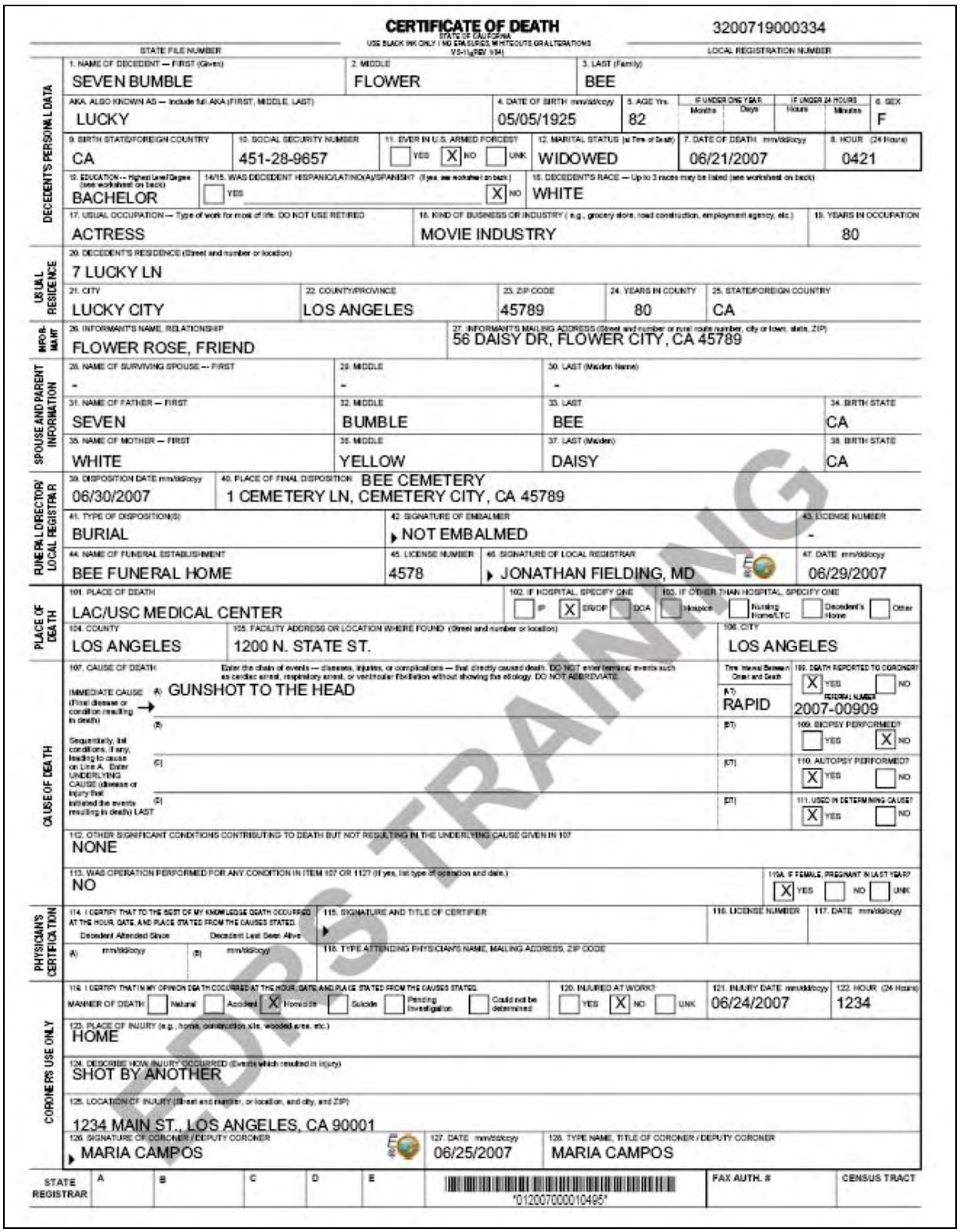
**Public Health Registrars**

- Stationed in major health centers across LAC, and the Vital Records Office of the Data Collection & Analysis (DCA) unit of LACDPH.
- Certify complete DC applications to become DC, a legal document thereafter, and issue burial permit.
- Pass all DCs to the Vital Records Office (VRO).

**Vital Records Office (Data Collection & Analysis Unit)**

- Responsible for collecting DCs and chronological registration of all DCs in LA County (coroner cases may be delayed), except for the cities of Pasadena and Long Beach which have their own local Health Departments.
- Original DCs are scanned images and then are archived at the Registrar-Recorder/County Clerk (RRCC). Through a joint collaboration, the VRO and the RRCC share an index of birth and death certificates.
- Originals DCs are sent to the State from the VRO.
- Certified Authorized and Informational DC copies are available to general public at $12.00/copy.

## SAMPLE DEATH CERTIFICATE FROM CA-EDRS: FORM VS-11E



**CERTIFICATE OF DEATH**
STATE OF CALIFORNIA
USE BLACK INK ONLY / NO ERASURES, WHITEOUTS OR ALTERATIONS
VS-11(g)(REV. 1/94)

STATE FILE NUMBER: 3200719000334
LOCAL REGISTRATION NUMBER:

**DECEDENT'S PERSONAL DATA**

| 1. NAME OF DECEDENT — FIRST (Given) | 2. MIDDLE | 3. LAST (Family) |
|---|---|---|
| SEVEN BUMBLE | FLOWER | BEE |

| AKA, ALSO KNOWN AS — Include full AKA (FIRST, MIDDLE, LAST) | 4. DATE OF BIRTH mm/dd/ccyy | 5. AGE Yrs. | IF UNDER ONE YEAR: Months / Days | IF UNDER 24 HOURS: Hours / Minutes | 6. SEX |
|---|---|---|---|---|---|
| LUCKY | 05/05/1925 | 82 | | | F |

| 9. BIRTH STATE/FOREIGN COUNTRY | 10. SOCIAL SECURITY NUMBER | 11. EVER IN U.S. ARMED FORCES? | 12. MARITAL STATUS (at Time of Death) | 7. DATE OF DEATH mm/dd/ccyy | 8. HOUR (24 Hours) |
|---|---|---|---|---|---|
| CA | 451-28-9657 | YES [ ] NO [X] UNK [ ] | WIDOWED | 06/21/2007 | 0421 |

| 13. EDUCATION — Highest Level/Degree (see worksheet on back) | 14/15. WAS DECEDENT HISPANIC/LATINO/A/SPANISH? (If yes, see worksheet on back) | 16. DECEDENT'S RACE — Up to 3 races may be listed (see worksheet on back) |
|---|---|---|
| BACHELOR | YES [ ] NO [X] | WHITE |

| 17. USUAL OCCUPATION — Type of work for most of life. DO NOT USE RETIRED | 18. KIND OF BUSINESS OR INDUSTRY (e.g., grocery store, road construction, employment agency, etc.) | 19. YEARS IN OCCUPATION |
|---|---|---|
| ACTRESS | MOVIE INDUSTRY | 80 |

**USUAL RESIDENCE**

| 20. DECEDENT'S RESIDENCE (Street and number or location) | | | | |
|---|---|---|---|---|
| 7 LUCKY LN | | | | |
| 21. CITY | 22. COUNTY/PROVINCE | 23. ZIP CODE | 24. YEARS IN COUNTY | 25. STATE/FOREIGN COUNTRY |
| LUCKY CITY | LOS ANGELES | 45789 | 80 | CA |

**INFORMANT**

| 26. INFORMANT'S NAME, RELATIONSHIP | 27. INFORMANT'S MAILING ADDRESS (Street and number or rural route number, city or town, state, ZIP) |
|---|---|
| FLOWER ROSE, FRIEND | 56 DAISY DR, FLOWER CITY, CA 45789 |

**SPOUSE AND PARENT INFORMATION**

| 28. NAME OF SURVIVING SPOUSE — FIRST | 29. MIDDLE | 30. LAST (Maiden Name) | |
|---|---|---|---|
| - | - | - | |
| 31. NAME OF FATHER — FIRST | 32. MIDDLE | 33. LAST | 34. BIRTH STATE |
| SEVEN | BUMBLE | BEE | CA |
| 35. NAME OF MOTHER — FIRST | 36. MIDDLE | 37. LAST (Maiden) | 38. BIRTH STATE |
| WHITE | YELLOW | DAISY | CA |

**FUNERAL DIRECTOR/ LOCAL REGISTRAR**

| 39. DISPOSITION DATE mm/dd/ccyy | 40. PLACE OF FINAL DISPOSITION |
|---|---|
| 06/30/2007 | BEE CEMETERY<br>1 CEMETERY LN, CEMETERY CITY, CA 45789 |

| 41. TYPE OF DISPOSITION(S) | 42. SIGNATURE OF EMBALMER | 43. LICENSE NUMBER |
|---|---|---|
| BURIAL | NOT EMBALMED | - |

| 44. NAME OF FUNERAL ESTABLISHMENT | 45. LICENSE NUMBER | 46. SIGNATURE OF LOCAL REGISTRAR | 47. DATE mm/dd/ccyy |
|---|---|---|---|
| BEE FUNERAL HOME | 4578 | JONATHAN FIELDING, MD | 06/29/2007 |

**PLACE OF DEATH**

| 101. PLACE OF DEATH | 102. IF HOSPITAL, SPECIFY ONE | 103. IF OTHER THAN HOSPITAL, SPECIFY ONE |
|---|---|---|
| LAC/USC MEDICAL CENTER | IP [ ] ER/OP [X] DOA [ ] | Hospice [ ] Nursing Home/LTC [ ] Decedent's Home [ ] Other [ ] |

| 104. COUNTY | 105. FACILITY ADDRESS OR LOCATION WHERE FOUND (Street and number or location) | 106. CITY |
|---|---|---|
| LOS ANGELES | 1200 N. STATE ST. | LOS ANGELES |

**CAUSE OF DEATH**

107. CAUSE OF DEATH — Enter the chain of events — diseases, injuries, or complications — that directly caused death. DO NOT enter terminal events such as cardiac arrest, respiratory arrest, or ventricular fibrillation without showing the etiology. DO NOT ABBREVIATE.

| | | Time Interval Between Onset and Death | 108. DEATH REPORTED TO CORONER? |
|---|---|---|---|
| IMMEDIATE CAUSE (Final disease or condition resulting in death) → | (A) GUNSHOT TO THE HEAD | (A') RAPID | [X] YES [ ] NO<br>FEDERAL NUMBER 2007-00909 |
| Sequentially, list conditions, if any, leading to cause on Line A. Enter UNDERLYING CAUSE (disease or injury that initiated the events resulting in death) LAST | (B) | (B') | 109. BIOPSY PERFORMED? [ ] YES [X] NO |
| | (C) | (C') | 110. AUTOPSY PERFORMED? [X] YES [ ] NO |
| | (D) | (D') | 111. USED IN DETERMINING CAUSE? [X] YES [ ] NO |

112. OTHER SIGNIFICANT CONDITIONS CONTRIBUTING TO DEATH BUT NOT RESULTING IN THE UNDERLYING CAUSE GIVEN IN 107
NONE

| 113. WAS OPERATION PERFORMED FOR ANY CONDITION IN ITEM 107 OR 112? (If yes, list type of operation and date.) | 113A. IF FEMALE, PREGNANT IN LAST YEAR? |
|---|---|
| NO | [X] YES [ ] NO [ ] UNK |

**PHYSICIAN'S CERTIFICATION**

| 114. I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE DEATH OCCURRED AT THE HOUR, DATE, AND PLACE STATED FROM THE CAUSES STATED. | 115. SIGNATURE AND TITLE OF CERTIFIER | 116. LICENSE NUMBER | 117. DATE mm/dd/ccyy |
|---|---|---|---|
| Decedent Attended Since (A) mm/dd/ccyy; Decedent Last Seen Alive (B) mm/dd/ccyy | 118. TYPE ATTENDING PHYSICIAN'S NAME, MAILING ADDRESS, ZIP CODE | | |

**CORONER'S USE ONLY**

| 119. I CERTIFY THAT IN MY OPINION DEATH OCCURRED AT THE HOUR, DATE, AND PLACE STATED FROM THE CAUSES STATED. MANNER OF DEATH: Natural [ ] Accident [ ] Homicide [X] Suicide [ ] Pending Investigation [ ] Could not be determined [ ] | 120. INJURED AT WORK? [ ] YES [X] NO [ ] UNK | 121. INJURY DATE mm/dd/ccyy | 122. HOUR (24 Hours) |
|---|---|---|---|
| | | 06/24/2007 | 1234 |

123. PLACE OF INJURY (e.g., home; construction site; wooded area; etc.)
HOME

124. DESCRIBE HOW INJURY OCCURRED (Events which resulted in injury)
SHOT BY ANOTHER

125. LOCATION OF INJURY (Street and number, or location, and city, and ZIP)
1234 MAIN ST., LOS ANGELES, CA 90001

| 126. SIGNATURE OF CORONER / DEPUTY CORONER | 127. DATE mm/dd/ccyy | 128. TYPE NAME, TITLE OF CORONER / DEPUTY CORONER |
|---|---|---|
| MARIA CAMPOS | 06/25/2007 | MARIA CAMPOS |

| STATE REGISTRAR | A | B | C | D | E | | FAX AUTH. # | CENSUS TRACT |
|---|---|---|---|---|---|---|---|---|
| | | | | | | *0120070000010495* | | |

EDRS TRAINING

# FACT SHEET

## CALIFORNIA ELECTRONIC DEATH REGISTRATION SYSTEM (CA-EDRS)

| CA-EDRS Features |
|---|
| ▪ Electronic filing of death certificates<br>▪ On-line collaboration among multiple death registration system users (funeral directors, medical facilities, local registrar, state registrar, etc.)<br>▪ User-friendly death record data entry screens<br>▪ Electronic signature (physicians, coroner staff, local registrar)<br>▪ Built-in instructions and on-line help<br>▪ Internet accessibility<br>▪ Electronic authentication (User IDs/passwords) |
| **CA-EDRS Benefits** |
| ▪ Improved efficiency and timeliness in processing of the death certificate<br>▪ Document tracking – records are transferred electronically with unique record number<br>▪ Higher quality of data (internal data checks)<br>▪ Electronic signatures (coroner, physicians, funeral directors, medical facility staff, local registrar)<br>▪ Internet accessibility<br>▪ Disposition/burial permits printed at funeral homes, thereby expediting services for families<br>▪ Reduced number of amendments and duplicates due to error checks |
| **USING EDRS DURING AN MFI** |
| ▪ Death certificate processing does not change during a mass fatality incident<br>▪ Using EDRS will expedite death certificate processing<br>▪ Hospitals that have staff trained to use EDRS will be able to process death certificates more expediently<br>▪ **NOTE: EDRS accounts require training – no accounts will be issued on an emergency basis**<br>▪ Once the hospital has completed the decedent's name, date of death, hour of death, causes of death, and has obtained the physician signature, the hospital can then forward the record to a mortuary or the Coroner |
| **Websites** |
| ▪ https://ca.edrs.us (CA-EDRS login page)<br>▪ http://www.edrs.us (EDRS homepage/general information) |

# FACT SHEET

## INFORMATION ON THE LA COUNTY PUBLIC ADMINISTRATOR

The Public Administrator for the County of Los Angeles has a staff of deputies to provide administration of the estates of decedents who were residents of Los Angeles County. The powers of the Public Administrator are mandated by the Probate Code of the State of California

The Public Administrator should be notified by anyone (mortuary, convalescent facility, hospital or private citizen) who has knowledge of an estate of a decedent under the following circumstances:

1. Where there are no known heirs.
2. When no executor or administrator has been appointed and the estate is being wasted, uncared for or lost.
3. When the named executor of a Will fails to act and the court appoints the Public Administrator.
4. When the Will names the Public Administrator as the estate administrator.

When an heir, or heirs, wish to have the Public Administrator administer the estate for them.

To report such an estate you may call the Investigation Unit of the Public Administrator's Office at 213-974-0460 or TTY: 213-628-4010. An investigator will be available to provide assistance in determining the need for the Public Administrator to administer the estate.

http://ttc.lacounty.gov/Proptax/PA_openning.htm

# FACT SHEET

# HEALTH RISK FROM DEAD BODIES

## KEY MESSAGE

**There is no risk of contagion or infectious disease from being near human remains or for people who are not directly involved in recovery efforts.**

Victims of natural disasters, accidents, or WMD events usually die from trauma and are unlikely to have acute or 'epidemic-causing' infections. In the event of an intentional release of a biological agent or natural pandemic resulting in mass casualties, the risk is greater from live victims rather than the dead. The microorganisms responsible for these diseases have limited ability to survive in a body that is cooling after death.

## BASIC INFECTION CONTROL FOR STAFF HANDLING HUMAN REMAINS

The safety of personnel performing these functions is paramount.
Measures should be taken to reduce the risk of infection associated with handling dead bodies.

- Standard precautions are essential for those handling dead bodies; avoid exposure to potential pathogens and via wounds/punctures or mucus membranes. Follow universal precautions for blood and body and enteric fluids.
- Other PPE such as eyewear, gowns, and masks, may be required where large quantities or splashes of blood are anticipated.
- Appropriately dispose of used protective equipment such as gloves or other garments
- Avoid cross-contamination: personal items should not be handled while wearing soiled gloves. Hand washing is essential.
- In HazMat or WMD events, the appropriate level of PPE is required depending on the agent.
- Vehicles used for transportation should be washed carefully with a disinfectant or decontaminated if appropriate
- Human remains pouches will further reduce the risk of infection and are useful for the transport of decedents that have been badly damaged. Wrapping with plastic and a sheet may be an economical and practical containment solution.
- There is NO risk of contagion from infectious diseases simply by being near or around human remains.

# FACT SHEET

## HUMAN REMAINS STORAGE MYTHS AND TRUTHS: THE GOOD IDEAS

All delays between the death and autopsy hinder the medicolegal processes. All storage options should weigh the storage requirements against the time it takes to collect information that is necessary for identification, determination of the cause and circumstances of death, and next of kin notification.

### WHY REFRIGERATION IS RECOMMENDED

- Most hospital morgues' refrigeration capacity will be exceeded during a disaster, especially if there are many unidentified bodies or remains recovered in the first hours of the event.
- Refrigeration between 38° and 42° Fahrenheit is the best option.
- Large refrigerated transport containers used by commercial shipping companies can be used to store up to 30 bodies. (Laying flat on the floor with walkway between).
    - Enough containers are seldom available at the disaster site.
    - Consider lightweight temporary racking systems. These can increase each container or room's capacity by 3 times.
- Refrigeration does not halt decomposition, it only delays it.
    - Will preserve a body for 1-3 months.
    - Humidity also plays a role in decomposition. Refrigeration units should be maintained at low humidity.
    - Mold can become a problem on refrigerated bodies making visual identification impossible and interfering with medicolegal processes.

### WHY DRY ICE IS AN OKAY RECOMMENDATION

Dry ice (carbon dioxide ($CO_2$) frozen at –78.5° Celsius) may be suitable for short-term storage.

- Use by building a low wall of dry ice around groups of about 20 remains and then covering with a plastic sheet.
- About 22 lbs of dry ice per remains, per day is needed, depending on the outside temperature.
- Dry ice should not be placed on top of remains, even when wrapped, because it damages the body.
- Expensive, difficult to obtain during an emergency.
- Dry ice requires handling with gloves to avoid "cold burns."
- When dry ice melts it produces carbon dioxide gas, which is toxic. The area needs good ventilation.

# FACT SHEET

## HUMAN REMAINS STORAGE MYTHS AND TRUTHS: THE BAD IDEAS

### WHY STACKING IS NOT RECOMMENDED

- Demonstrates a lack of respect for individuals.
- The placement of one body on top of another in cold or freezing temperatures can distort the faces of the victims, a condition which is difficult to reverse and impedes visual identification.
- Decedents are difficult to manage if stacked. Individual tags are difficult to read and decedents on the bottom can not be easily removed.

### WHY FREEZING IS NOT RECOMMENDED

- Freezing causes tissues to dehydrate which changes their color; this can have a negative impact on the interpretation of injuries, as well as on attempts at visual recognition by family members.
- Rapid freezing of bodies can cause post-mortem injury, including cranial fracture.
- Handling bodies when they are frozen can also cause fracture, which will negatively influence the investigation and make the medicolegal interpretation of the examination results difficult.
- The process of freezing and thawing will accelerate decomposition of the remains.

### WHY ICE RINKS ARE NOT RECOMMENDED

- Ice rinks are frequently brought up as possible storage sites. As previously mentioned, freezing has several undesirable consequences.
- A body laid on ice is only partially frozen. It eventually will stick to the ice making movement of the decedent difficult.
- Management and movement of decedents on solid ground is challenging in good circumstances. Workers having to negotiate ice walkways would pose an unacceptable safely risk.

### WHY PACKING IN ICE IS NOT RECOMMENDED

- Difficult to manage due to ice weight and transport issues.
- Large amounts are necessary to preserve a body even for a short time.
- Difficult to resource or obtain during an emergency.
- Ice is often a priority for emergency medical units.
- Results in large areas of run off water.

# FACT SHEET

## HUMAN REMAINS STORAGE MYTHS AND TRUTHS:

## OTHER ISSUES NOT DIRECTLY RELATED TO HOSPITAL STORAGE

**Packing with Chemicals**

- Some substances may be used to pack a decedent for a short period. These chemicals have strong odors and can be irritating to workers.
- Powdered formaldehyde and powdered calcium hydroxide may be useful for preserving fragmented remains. After these substances are applied, the body or fragments are wrapped in several nylon or plastic bags and sealed completely.

**Embalming**

- The most common method.
- Not possible when the integrity of a corpse is compromised, i.e., it is decomposed or in fragments.
- Embalming requires a licensed professional with knowledge of anatomy and chemistry.
- Expensive, considerable time involved for each case.
- Used to preserve a body for more than 72 hours after death; transitory preservation is meant to maintain the body in an acceptable state for 24 to 72 hours after death.
- Embalming is required for the repatriation or transfer of a corpse out of a country.

**Temporary Interment - *Not a mass grave***

- Temporary burial provides a good option for immediate storage where no other method is available, or where longer-term temporary storage is needed.
- While not a true form of preservation this is an option that might be considered when there will be a great delay in final disposition.
- Temperature underground is lower than at the surface, thereby providing natural refrigeration.
- Temporary burial sites should be constructed in the following way to help ensure future location and recover of bodies.
- Trench burial for larger numbers.
- Burial should be 5 feet deep and at least 600 feet from drinking water sources.
- Leave 1 foot between bodies.
- Lay bodies in one layer only. Do not stack.
- Clearly mark each body and mark their positions at ground level.
- Each body must be labeled with a metal or plastic identification tag.

# FACT SHEET

## DECOMPOSITION FACT SHEET

| **Definition** |
| --- |
| Decomposition is the disintegration of body tissues after death, and begins at the moment of death. |
| **Causes of Decomposition** |
| These processes release gases that are the chief source of the characteristic odor of dead bodies as well as cause the body to swell:<br>▪ Autolysis: self dissolution by body enzymes released from disintegrating cells<br>▪ Putrefaction: action of bacteria and other microorganisms<br>▪ Anthropophagy: insects and animals |
| **Factors That Affect Decomposition** |
| ▪ Temperature<br>▪ Humidity or dryness<br>▪ The surface where the body lies<br>▪ Burial<br>▪ Wrapping<br>▪ Insect and scavenger activity<br>▪ Indoors vs outdoors<br>▪ Water<br>▪ Fire<br>▪ Condition of the person prior to death |

## RECOMMENDED METHODS OF STORAGE FOR HOSPITALS

All storage options should weigh the storage requirements against the time it takes to collect information that is necessary for identification, determination of the cause and circumstances of death, next of kin notification, and length of time the decedent will need to be stored until release to the Coroner, Morgue, or private mortuary.

### PROTECTING THE DECEDENT

- Decedents and their personal effects must be secured and safeguarded at all times until the arrival of the coroner's or mortuary's authorized representative, or law enforcement (if evidentiary).
- Placed in a human remains pouch or wrap in plastic and a sheet.
- If personal effects have been removed from the body, ensure the items have been catalogued (such as on the Decedent Information and Tracking Card on page 18) and are secure.
- Be sure the decedent is tagged with identification information.

### REFRIGERATION IS THE RECOMMENDED METHOD OF STORAGE

- Refrigeration between 38° and 42° Fahrenheit is the best option.
- Refrigeration units should be maintained at low humidity.
- Existing hospital morgue: most hospital morgues' refrigeration capacity will be exceeded during a disaster, especially if there are many unidentified bodies or remains recovered
- Surge Morgues
    - Rooms, tents or large refrigerated transport containers used by commercial shipping companies that have the temperature controlled may also serve as surge morgues
    - May be cooled via the HVAC system, portable air conditioners, or the correct application of dry ice (see Fact Sheet: Human Remains Storage Myths and Truths: Why Dry Ice Is An Okay Recommendation on page 29)
    - Containers may be used to store up to 30 bodies by laying remains flat on the floor with walkway between

### BEDS, COTS, OR RACKING SYSTEMS – NOT STACKING

- See Fact Sheet: Human Remains Storage Myths and Truths: Why Stacking is Not Recommended on page 30
- The floor can be used for storing remains, however it may be safer and easier to identify and move remains on beds, cots or racking systems
- Consider lightweight temporary racking systems. These can increase each room or container's capacity by 3 times, as well as create a specific storage location for tracking. These may be specifically designed racks for decedents, or converted storage racks (such as large foodservice shelving, 72" wide by 24" deep; ensure that these are secured and can handle the weight load).

## SURGE MORGUE EQUIPMENT AND SUPPLIES CHECKLIST

Equipment and supplies for the surge morgue areas may include the following. Be sure to identify where items are stored and how to access the storage area.

| Consideration | Your Facility Notes / How to Access Equipment |
|---|---|
| **Staff Protection**<br>☐ Personal protective equipment (minimum standard precautions)<br>☐ Worker safety and comfort supplies<br>☐ Communication (radio, phone) | ▪ Storage area:<br>▪ How to access:<br>▪ *Notes*: |
| **Decedent Identification**<br>☐ Identification wristbands or other identification<br>☐ Method to identify each decedent (pouch label, tag or rack location)<br>☐ Cameras (may use dedicated digital, disposable, or instant photo cameras)<br>☐ Fingerprints<br>☐ X-rays or dental records<br>☐ Personal belongings bags / evidence bags | ▪ Storage area:<br>▪ How to access:<br>▪ *Notes*: |
| **Decedent Protection**<br>☐ Human remains pouches<br>☐ Plastic sheeting<br>☐ Sheets | ▪ Storage area:<br>▪ How to access:<br>▪ *Notes*: |
| **Decedent Storage**<br>☐ Refrigerated tents or identified overflow morgue area<br>☐ Storage racks<br>☐ Portable air conditioning units<br>☐ Generators for lights or air conditioning<br>☐ Ropes, caution tape, other barricade equipment | ▪ Storage area:<br>▪ How to access:<br>▪ *Notes*: |

**Note about Human Remains Pouches**

Through funding from the Hospital Preparedness Program (HPP) grant, the Los Angeles County (LAC) EMS Agency has provided funding for each Disaster Resource Center to purchase 100 human remains pouches as part of its cache creating a total of 1300 in LAC. In addition, through additional HPP grant funding, each HPP-participating hospital will receive 100 disaster quality human remains pouches to be pre-deployed at each facility as well as a cache stored by LAC (total of 8400 in LAC).

## MASS FATALITY PANDEMIC INFLUENZA EXERCISE

## SAMPLE PRE AND POST TEST QUESTIONS

| | Question | True or False |
|---|---|---|
| 1. | There is no risk of contagion or infectious disease from being near human remains for people who are not directly involved in handling the bodies.<br>**True**: Unless you are directly handling decedents, there is no risk (including no records of epidemics or outbreaks) from being near dead bodies—and for those handling decedent, basic standard precautions are recommended. | **True** |
| 2. | You can contract influenza (flu) from passive exposure (being near) decedents who have died from flu.<br>**False**: You cannot contract influenza from passive exposure (being near) to dead bodies—dead bodies don't cough. And for those handling decedents, basic standard precautions are all that is necessary. | **False** |
| 3. | During the winter, "influenza" is the most commonly noted cause of death listed on death certificates.<br>**False**: Because diagnostic/confirmatory influenza tests are rarely conducted, and because of the natural progression of disease (from illness to potential subsequent death), while influenza may have been the preceding cause of death, it is rarely listed on death certificates. Instead, pneumonia and other secondary illness (cardiac arrest, etc.) are the predominant listed cause of death. | **False** |
| 4. | Counting the number of people who have "influenza" listed as the cause of death on their death certificate is not an accurate indicator of the number of people who have actually died from flu.<br>**True**: Because of the lag time and natural progression form initial infection to death, flu is rarely identified as the cause of death on death certificates. Instead "pneumonia" is used as a surrogate measure to attempt to better estimate the number of deaths that may have been caused by flu. | **True** |
| 5. | The Coroner is required to investigate the cause of death for every case.<br>**False**: The code requires the Coroner "to determine the circumstances, manner and cause of all violent, sudden, or unusual deaths: including unattended deaths wherein the deceased has not been seen by a doctor in the 20 days prior to death." | **False** |
| 6. | The last flu pandemic resulted in fewer U.S. deaths than what is typically expected from seasonal flu.<br>**True**: The last influenza pandemic (the "Hong Kong Flu" of 1968) resulted in 34,000 US deaths; less than what is expected of a typical US influenza season (36,000 death expected annually). | **True** |
| 7. | By definition, influenza pandemics are more severe (have significantly higher resulting fatality rates) as compared to seasonal strains of influenza.<br>**False:** A pandemic simply means "worldwide illness." A pandemic may not necessarily result in more deaths than what we experience every season from seasonal flu, and the last pandemic (the Hong Kong flu of 1986) actually resulted in fewer U.S. deaths (34,000) than what we expect every year from seasonal flu (approximately 36,000 annually). | **False** |
| 8. | The attending physician must complete the medical portion of the death certificate within 72 hours of the death.<br>**False:** The attending physician is required to complete this medical portion within 15 hours of the death. | **False** |

| | Question | True or False |
|---|---|---|
| 9. | A physician signing the death certificate is legally responsible for the cause(s) of death listed on the death certificate.<br>**False**: The physician is legally responsible for completing the medical portion with the causes of death, but it is the entire death certificate that is the legal document, not the causes of death themselves. | **False** |
| 10. | Hospitals will be required to have a mass fatality management plan.<br>**True:** Joint Commission Standards: 2008: EC.4.18.5 which asks for a plan to describe how the hospital will manage mortuary services. The standard will be reassigned in 2009 to EM.02.02.11. It is also a requirement of the Hospital Preparedness Program. | **True** |
| 11. | The Public Administrator gets involved in Decedent Affairs when:<br>▪ No next-of-kin are found/come forward<br>▪ Next-of-kin reside outside the U.S., or decline to act for the Decedent<br>▪ Assets are "subject to loss, injury, waste, or misappropriation…" (Prob. C. §7601(a))<br>▪ The appointed administrator or executor fails to act (properly)<br>**True:** As mandated by the Probate Code of the State of California. | **True** |
| 12. | The Public Administrator will investigate any case referred by:<br>▪ A public officer (§7600)<br>▪ A hospital, nursing home, etc. (§7600.5)<br>▪ A mortuary (§7600.6)<br>▪ A court (§7620(c))<br>▪ Any person (§7620(b))<br>**True:** As mandated by the Probate Code of the State of California. | **True** |
| 13. | The Coroner is the only individual allowed to sign a death certificate.<br>**False**: Others with this ability/responsibility include the attending physician and emergency department physician. | **False** |

## WEB RESOURCES

**Los Angeles County**

- **Department of Coroner**: http://coroner.co.la.ca.us
- **Department of Health Services Emergency Medical Services Agency** Medical Alert Center and Disaster Management Unit: http://ems.dhs.lacounty.gov
- **Department of Public Health**
  - Acute Communicable Disease Control: http://www.lapublichealth.org/acd
  - Data Collection and Analysis Unit: http://www.lapublichealth.org/dca
- **Department of Mental Health**: http://www.dmh.lacounty.gov
- **Public Administrator's Office**: http://ttc.lacounty.gov/Proptax/PA_openning.htm

**California**

- **California Electronic Death Registration System**
  - https://ca.edrs.us (CA-EDRS login page)
  - http://www.edrs.us (EDRS homepage/general information)
- **California Health & Safety Code 103451, Definition of a Mass Fatalities Incident**: http://www.leginfo.ca.gov/cgi-bin/displaycode?section=hsc&group=103001-104000&file=103450-103490

**Federal**

- CDC: **Instructions for Completing the Cause-of-Death Section of the Death Certificate**, CDC National Center for Health Statistics: http://www.cdc.gov/nchs/data/dvs/blue_form.pdf
- CDC: **Interim Health Recommendations for Workers Who Handle Human Remains**: http://www.bt.cdc.gov/disasters/tsunamis/handleremains.asp
- CDC: **Disposing of Liquid Waste from Autopsies in Tsunami-Affected Areas**: http://www.bt.cdc.gov/disasters/tsunamis/pdf/tsunami-autopsyliquidwaste.pdf
- CDC: **Standard Precautions Guidelines**: www.cdc.gov/ncidod/dhqp/gl_isolation_standard.html
- DHHS: **Radiation Event Medical Management: Management of the Deceased**: http://www.remm.nlm.gov/deceased.htm
- OSHA: **Health and Safety Recommendations for Workers Who Handle Human Remains**: http://www.osha.gov/OshDoc/data_Hurricane_Facts/mortuary.pdf
- CHPPM: **Guidelines for Protecting Mortuary Affairs Personnel from Potentially Infectious Materials**, October 2001: http://chppm-www.apgea.army.mil/documents/TG/TECHGUID/TG195a.pdf

**Pan American Health Organization (PAHO)**

- **Management of Dead Bodies After Disasters: A Field Manual for First Responders**: http://www.paho.org/english/dd/ped/DeadBodiesFieldManual.htm
- **Management of Dead Bodies in Disaster Situations**: http://www.paho.org/english/dd/ped/ManejoCadaveres.htm
- **Mass Fatality Plan Checklist for Ministries of Health and National Disaster Offices**: http://www.paho.org/english/dd/ped/deadbodies5checklist.htm
- Eberwine, Donna. **Disaster Myths That Just Won't Die**. http://www.paho.org/english/dd/pin/Number21_article01.htm
- Morgan O, Ville de Goyet Cd. **Dispelling disaster myths about dead bodies and disease: the role of scientific evidence and the media**. http://journal.paho.org/index.php?a_ID=121

**Other Resources**

- **International Mass Fatalities Center**: http://www.massfatalities.com/
- **National Mass Fatalities Institute**: http://www.nmfi.org/
- **Online Mass Fatalities Course**, University of Minnesota Center for Public Health Preparedness: http://cpheo.sph.umn.edu/umncphp/online/home.html