U.S. Medicolegal System

## Texas Medicolegal System

<table>
<thead>
<tr>
<th>No</th>
<th>State Medical Examiner</th>
</tr>
</thead>
<tbody>
<tr>
<td>254</td>
<td>Counties</td>
</tr>
<tr>
<td>13</td>
<td>Medical Examiners (ME) (serving 16 counties)</td>
</tr>
<tr>
<td>59%</td>
<td>Population served by ME office</td>
</tr>
<tr>
<td>&gt;1 million</td>
<td>County population that requires ME office</td>
</tr>
<tr>
<td>At least 1</td>
<td>Justice of the Peace (Coroner) other counties</td>
</tr>
</tbody>
</table>
Medicolegal Authority

Entity in a local jurisdiction that is tasked with investigating unexpected deaths

- Coroner, Justice of the Peace, Medical Examiner
- Performs inquests, or investigations into unexpected deaths
Deaths That Require an Inquest

- Homicide
- Suicide
- Motor vehicle crashes
- Overdoses
- No attending physician
- Confined to public institution (in custody)
- Industrial accidents
- On the job
- Child <6 years old
- Any death due to trauma
- Any death due to abuse or neglect
- Within 24 hours of admission to a hospital
Medicolegal Authority Responsibilities

- Scene investigation
- Decedent transport
- Postmortem examination
  - Cause and manner certification
- Decedent identification
- Notification of Next of Kin
- Release to funeral agency

*for cases that qualify as ME jurisdiction*
Mass Fatality Incident Defined

Any incident producing fatalities that overwhelm local resources
What IS a Mass Fatality…Really?

- Mass fatality is not synonymous with disaster
- Catastrophic focus (pandemic, 9/11, etc.) vs. historical reality
- Number of fatalities
- Human remains storage
Obstacles to Mass Fatality Preparedness

• Storage/number of fatalities vs. command and control
• Local disaster = local responsibility
# Average Deaths Per MFI

## U.S. MFIs 2000-2012

<table>
<thead>
<tr>
<th>MFI Type</th>
<th>MFI Subtype</th>
<th>Category</th>
<th>MFIs (93 Total)</th>
<th>Deaths (7,782 Total)</th>
<th>Avg. # of Deaths/MFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural</td>
<td>Weather-Related</td>
<td>Tornado</td>
<td>22</td>
<td>1002</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hurricane</td>
<td>12</td>
<td>2470</td>
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<td>Flood</td>
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<td>63</td>
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<tr>
<td></td>
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<tr>
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Data courtesy of New York City Office of the Chief Medical Examiner
**Average Deaths Per MFI**

*not including 9/11 Terrorist attacks*

**U.S. MFIs 2000-2012**

<table>
<thead>
<tr>
<th>MFI Type</th>
<th>MFI Subtype</th>
<th>Category</th>
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Data courtesy of New York City Office of the Chief Medical Examiner
Average Deaths Per MFI

*not including 9/11 attacks or Hurricane Katrina

U.S. MFIs 2000-2012

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<thead>
<tr>
<th>MFI Type</th>
<th>MFI Subtype</th>
<th>Category</th>
<th>MFIs (90 Total)</th>
<th>Deaths (2,960 Total)</th>
<th>Avg. # of Deaths/MFI</th>
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<td>2986</td>
<td>005</td>
</tr>
</tbody>
</table>

Data courtesy of New York City Office of the Chief Medical Examiner
Very Recent History: Average Deaths per MFI

13

2012
28 Newtown, CT shooting

2013
3 Boston Marathon bombing
14 West, TX plant explosion
6 Granbury, TX tornado
19 Yarnell, AZ firefighters
6 Philadelphia, PA building collapse
3 San Francisco, CA Asiana plane crash

2014
4 Bellevue, TN plane crash
8 Manhattan, NY building explosion
42 Oso, WA mudslide
6 Isla Vista, CA shooting
5 Las Vegas, NV shooting
6 Houston, TX shooting
How important is the fatality count?

- Number of victims
- Condition of human remains
- Human remains recovery
- Victim identification

- Responders
- Geography
- Community impact
- Interest to others

American Commuter Flt #5966 crash, Kirksville, MO, Oct 19, 2004

I-35W Bridge collapse, Minneapolis, MN, Aug 1, 2007
Shift in Emphasis

- Cause and manner of death vs. decedent identification
- Mass fatality = Missing persons

Family Assistance Center
- Antemortem information

Morgue
- Postmortem information

Comparison
- Unique biological characteristics

Identification
Means of Scientific Identification

Circumstantial
- Personal effects
- ID cards
- Tattoos

Scientific
- Fingerprint comparison
- DNA
- Dental radiograph comparison
- Radiographic comparison

Software systems to aid in data management
- DMORT VIP (Victim Identification Program)
- UVIS (Unified Victim Identification System)
Mass Fatality Incident (MFI) Variables

- Scale (number of fatalities)
- Condition of remains (taphonomy)
- Nature of incident (criminal vs. accident vs. natural)
- Decedent population (open or closed)
- Antemortem data: types, availability, accuracy
- Identification focus: victims or remains
- Role of DNA: ID and/or re-association
- Concerns/expectations of society and Next of Kin
# MFI Variables Matrix

<table>
<thead>
<tr>
<th>Fragmentary remains</th>
<th>Complete remains</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Reported vs. actual missing</td>
<td>• Reported vs. actual missing</td>
</tr>
<tr>
<td>• Increased reliance on DNA ID</td>
<td>• Conventional ID</td>
</tr>
<tr>
<td>• Lesser role for conventional ID</td>
<td>• Minimal DNA required/corroborative role</td>
</tr>
<tr>
<td>• ID all pieces vs. ID all victims</td>
<td>• Re-association not required</td>
</tr>
<tr>
<td>• Re-association required</td>
<td></td>
</tr>
</tbody>
</table>

## World Trade Center

- • Decedent list known
- • More rapid antemortem data
- • Increased reliance on DNA IDs
- • Lesser role for conventional ID
- • Re-association required

## Earthquake, cemetery flood

- • Decedent list known
- • More rapid antemortem data
- • Conventional IDs
- • Minimal DNA required/corroborative role
- • Re-association not required

## United 93, Egyptair 990

- • Conventional IDs
- • Minimal DNA required/corroborative role
- • Re-association not required

## Mass transit Motor Vehicle Accident (MVA)
MFI Functional Areas

- Incident assessment
- Incident Site operations
  - Scene investigation
  - Human remains search and recovery
- Transport operations
- Storage operations
- Morgue operations
- Decedent identification
- Victim Accounting
  - Family Reception Center/Family Assistance Center
  - Call Center
  - Victim manifest development
- Long term storage/final disposition
Multidisciplinary Approach

- Law Enforcement, Fire/EMS/Hazmat
- Medical Authority
- Emergency Management
- Healthcare & Mental Health Providers
- Media & PIOs
- Private Industry
- Volunteer & Religious Orgs
- State and Federal Agencies
- Local Elected Officials
- Public Health
- Legal Counsel
Command and Control

• 90% of the functional areas are operations that occur on a daily basis with clear leadership
• Coordination between various disciplines can be accomplished through effective preparedness
• Family assistance offers a different challenge
  • No clear lead organization
  • Not a daily operation
Multi-Disciplinary Roles in Family Assistance

Public & Family Information
- Initial notification
- Immediate factual info
- Info sharing
- Short & long term

Victim Accounting
- Call center
- Missing persons
- Casualties
- Shelter & evacuees
- Victim manifest

Identification
- Family interviews
- Antemortem data mgmt
- Identify remains

Personal Effects
- Recovery, processing, & return
- Storage
- Associated & unassociated

Family Support Services
- Reception & registration
- Case asst
- Behavioral mental health
- Spiritual
- Child care
- Mass care
- Medical care
Planning Considerations

• Capability estimations
  • What you have
  • What you don’t have
• Local vs. Regional planning?
• Multidisciplinary engagement
Capability Estimations

• Identification of resources
  • Plans/trainings/exercises
  • Teams/personnel
  • Equipment/supplies

• Identification of gaps
  • Plans
  • Equipment
  • Training
SECTION 9: INCIDENT SITE MANAGEMENT

- Who is the medicolegal authority: Medical Examiner or Justice of the Peace?
- If JPs, who provides routine pathology support functions?
- What Evidence Response Teams/Crime Scene Investigation Units capabilities are within the jurisdiction?
- What Hazmat capabilities are within the jurisdiction?
- What search and rescue capabilities are within the jurisdiction?
- What PPE resources are within the jurisdiction?
- What fingerprint expertise capabilities are within the jurisdiction?
- What photography capabilities are within the jurisdiction?
- Who has capability and experience with transporting cadavers?
- Are there existing jurisdiction contracts for body transportation?
- Who has temporary refrigerated storage capabilities?
- Are there suitable locations within the jurisdiction designated for temporary interment?
## Two Different Planning Approaches

<table>
<thead>
<tr>
<th>Regional Planning</th>
<th>Harris County Planning</th>
</tr>
</thead>
<tbody>
<tr>
<td>• More generalized concepts</td>
<td>• Very specific response guidance</td>
</tr>
<tr>
<td>• Focused on operational coordination, not tactical response</td>
<td>• Focused on tactical response and operational coordination</td>
</tr>
<tr>
<td>• Identifies discipline responsibilities</td>
<td>• Identifies agency and agency personnel responsibilities</td>
</tr>
<tr>
<td>• Trainings and exercises to enhance coordination amongst jurisdictions</td>
<td>• Training and exercises validate plans and procedures</td>
</tr>
</tbody>
</table>
Regional Planning Advisory Groups

- Investigation/Remains Recovery
- Fatality Management
- Legal
- Hazmat
- Logistics
- Plan Integration
- Information Technology
- FAC/Antemortem

Steering Committee
Helpful Planning Resources

- Houston Regional Catastrophic Preparedness Initiative
- Regional Mass Fatality Management Concept of Operations
- Jurisdictional Mass Fatality Management Plan Template and Planning Guide
  - Field Operating Guides
  - Guidance documents
- Texas DSHS MFM Toolkit
- Scientific Working Group on Disaster Victim Identification (soon to be the Organization of Scientific Area Committees)

Contact: IFSDFEM@hctx.net
Texas Mass Fatality Operations Response Team (TMORT)

- Statewide mass fatality response system
- Leverage existing resources and personnel from around the state
- Support local jurisdictions in:
  - Search and recovery
  - Transport and storage
  - Morgue operations
  - Victim information
  - Victim identification