

Factors in Assessing Mass Fatality Incidents

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A major challenge facing emergency managers is the assessment of resource requirements for mass fatality incidents. The existing literature provides limited guidance to predict the type and level of resources needed to respond to these incidents. Identifying critical characteristics of an incident is key to developing these algorithms. This article will look at five factors that define a mass fatality incident and compare these factors against three recent incidents.

The Federal Disaster Mortuary Response Teams (DMORT) define a mass fatality incident as “an incident where more deaths occur than can be handled by local resources.” This definition provides guidance for identifying the point at which a locality requires outside assistance, but it does not provide direction for determining the magnitude of resources needed.

Importance to Emergency Management

In the United States, the local medical examiners/coroners (ME/C) are charged with the responsibility of responding to incidents within their jurisdiction. The goal of the ME/C in a mass fatality response is to determine the cause and manner of death and identify the deceased. The cause and manner of death is generally uniform; the difficult task is the identification of remains. The plan to achieve these goals and the resources needed vary greatly depending on the circumstances of the incident.

For most ME/C operations, even a small mass fatality incident will overwhelm local resources. As emergency managers, understanding the magnitude of an incident is critical to supporting the ME/C in responding to and managing the event.

Defining Factors

The following factors can be used to characterize incidents:

■ **Number of Fatalities.** The number of fatalities is key to resource needs, but the condition of remains and manifest issues are resource multipliers.

■ **Rate of Recovery.** A fast rate of remains recovery can overwhelm local resources and storage capacities. It can also raise the expectation of fast identifications. A slow rate of recovery allows time to build resources, but will increase the duration of the event.

■ **Manifest.** The existence of a manifest is a key identification factor. Knowing who is dead will limit the universe of ante-mortem data collection, will help define the incident, and will limit the need to put every human remain through an identification process.

■ **Condition of Remains.** Fire-damaged, decomposed, fragmented or contaminated remains will have a multiplying effect on the resource needs for identification. In non-manifest incidents, fragmented remains will require that each remain be treated as a potential individual.

■ **Jurisdiction.** A local event within a single jurisdiction allows for a single, local identification center. An event across jurisdictions requires a regional or national (if survivors are displaced) identification effort and coordination among regional ME/C jurisdictions.

Factors Compared to Incidents

■ **The 9/11 World Trade Center attack** was the first mass fatality incident to use DNA technology for identification of remains. This incident had a moderate number of fatalities, a slow rate of recovery (hundreds of remains were found in 2006), partial manifests of the deceased,

fragmented remains (over 20,000 remains for 2,749 victims), but was limited to a single jurisdiction.

Actions included local command and control and the creation of a single identification center. However, the duration of the identification process was underestimated, and permanent resources were not allocated.

■ **The South East Asian Tsunami experience** in Thailand presented a high number of fatalities, a very fast recovery of remains, no manifests, decayed but intact bodies, and overlapping jurisdictions. Actions included acceptance of DNA as an identification tool, digital cameras for visual identification, regional mortuaries for examination and storage of remains, and a national command to unify the identification process and procedures across jurisdictions.

■ **Hurricane Katrina** presented a moderate number of fatalities, a very slow and difficult recovery, no manifest, decayed remains and multiple jurisdictions with a dispersed population. In this disaster, plans were not effectively put into action. Faulty information inflated the fatality count; the absence of manifests and regional scope of the incident required a national identification center; and despite a delayed and slow recovery, resources and processes were not built in a timely fashion to manage the incident.

In conclusion, the implementation of mass fatality disaster plans can be guided by these factors. However, the most effective resource for responding to a mass fatality incident is an effective national mass fatality response plan. This plan must account for overlapping jurisdictions with a national authority tasked with command and control for the collection and identification of the deceased.