

A Model Describing a Response to a Terrorism Incident

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ABSTRACT

Understanding how the response to an incident of terrorism involving a Weapons of Mass Destruction (WMD) transpires is essential to understanding the necessary flow of information within that response. A model describing incident response functions overlaid on a realistic timeline is presented.

Keywords

Terrorism response, emergency response, model, Weapons of Mass Destruction, WMD, information flow.

INTRODUCTION

A major problem in developing an appropriate response to a WMD terrorist incident is the fact that the toxicity or impact of the materials and the intent of the terrorist to inflict maximum casualties drive a need for very rapid actions and decision-making which affect thousands of potential victims, the civil order, multiple response agencies and hundreds of response personnel. Incident Commanders and responders need accurate, timely information, decision aids and information systems which support the right decisions being made at the right time and provided to the right people.

OBJECTIVE

The objective of this paper is to describe the major response actions which take place on-scene during the response to a terrorist incident. Understanding of this functional timeline will assist information system developers in analysis of information needs, flow and priorities.

METHODOLOGY

Interviews with emergency responders, observation of responses, and a review of published studies, documents, and exercise and incident after-action reports were conducted. This empirical information was then coalesced into the descriptive model shown in Figure 1.

RESULTS

The Model

Figure 1 is a model which depicts the major activities which will take place in response to a terrorism incident involving a toxic chemical. From this, major functions, interfaces and information requirements can be visualized. Note that there are a number of actions which must take place simultaneously. For example, triage, treatment and transport of victims depend on identification of the toxic material and on the establishment of decontamination lines for responders and victims. The need for systems which can provide and disseminate needed information within the first few minutes of arrival on-scene is critical to the overall success of the response. As the incident progresses, information provided to the Incident Commander and emergency responders can result in greatly enhanced efficiency and effectiveness of the response, at a time when resources are being heavily taxed and likely to be in short supply. Conversely, lack of information can severely affect the overall outcome.

Major Response Actions (Eifried *et al*, 2004)

Event Recognized

In a WMD incident, recognizing the signs and symptoms, making the proper notifications, and relaying the accurate details of the incident will have a major effect on the outcome of the incident. Some WMD agents act very quickly; therefore, it is important for all emergency responders to immediately know what they are faced with so they take the proper self-protection actions and do not themselves become victims of the incident.

Notification

The Notification Phase begins when the event is recognized and the action to respond to the emergency occurs. This may be as simple as an individual shouting, “There is something bad here, we must get out!” with a subsequent call made to 911 (U.S. telephone number for emergency notifications).

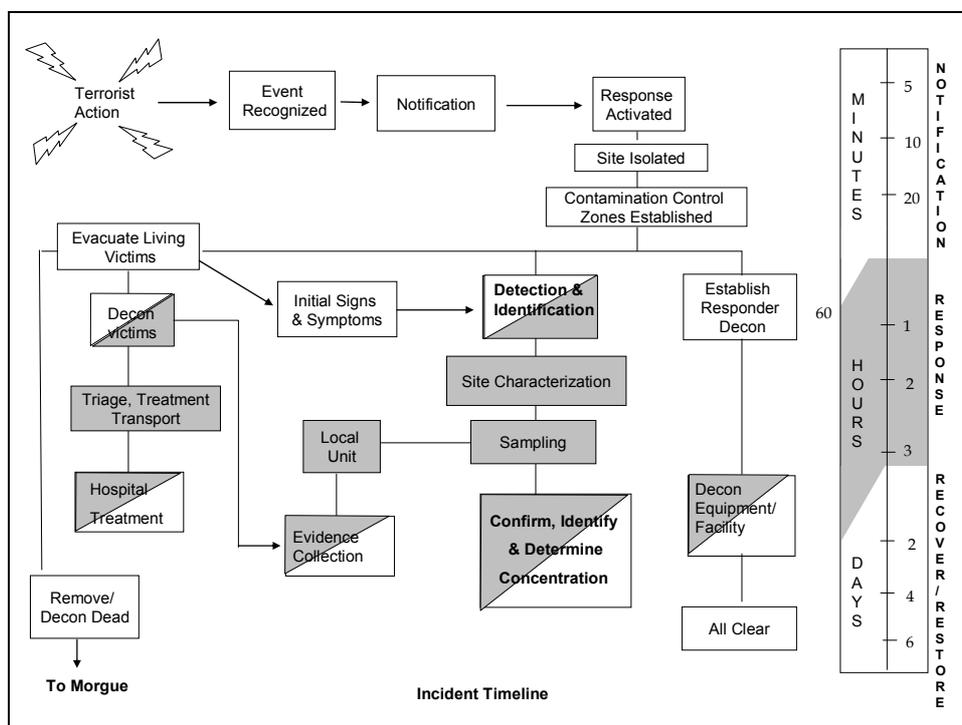


Figure 1. Terrorist Incident Response Activities Timeline (Eifried *et al.*, 2004)

Response Activated

Following notification, hazard warning and dispatch orders are communicated throughout the jurisdiction through the Dispatch Center. Early arriving emergency responders will question people in the area for specific information, such as the number of people involved, and pass findings back to the Dispatch Center.

Scene Isolation

The incident site is initially secured and observed by emergency responders from a safe distance. Incident command (IC) is established to control actions of the response units, and serves as the focal point for all on-scene information flow. The IC needs to have robust information links with each response sector (fire, police, medical etc.), and the sectors need to have robust information links with each of their subordinate units.

Scene Control

Scene access (in and out) is controlled to facilitate the response and limit spread of contamination. This requires physical marking of contamination control zones and transmission of the boundaries of restricted areas, as it is not practical to physically mark the entire restricted perimeter.

Decontamination

Decontamination is a labor-intensive effort that requires large amounts of water, masses of emergency response personnel with personal protection, and decontamination supplies and equipment. Identification of decontaminated individuals, their clothing and possessions is an important measure of control and investigation.

Triage, Treatment and Transport (Evacuate living victims)

The use of WMD weapons will most likely create large numbers of casualties and fatalities in a short period of time. Triage will be initiated as soon as possible with the goal of the “greatest good for the greatest number”. Use of triage tags and a victim disposition and tracking system are necessary.

Sampling

and

Detection

Entry into the “hot zone” will be made to collect samples for the purpose of positive detection and identification of the

substance. Once known, definitive information regarding the agent and required protective measures is disseminated.

Evidence Collection

The site of a WMD terrorist attack is a crime scene. Collection and cataloging of witness testimony, and physical and photographic evidence are information needs of the criminal investigation and the pursuit of suspected terrorists.

Integration of Outside Response Elements

External assets from county, state and federal authorities will arrive to assist the responding jurisdiction. Each of these assets will need to provide information concerning their capabilities, and in turn receive information regarding the incident and the current operational status. They will also need to be added to the information dissemination flow.

Information Flow

Figure 2 depicts a highly simplified version of the flow of information during a typical response. This is *presented as an example* of what actually happens, not as an optimized process. The focal point for information flow on-scene and from the scene is the Incident Command Post (ICP), which maintains communication with the staging area and sector command posts. These in turn maintain communication and information flow with their subordinate units. The primary line of communication from the ICP off-scene is to the Emergency Operations Center and Dispatch Center. Sector Chiefs may also maintain communications with Dispatch for their elements. This web of communications is one of the major challenges faced by developers of information systems for terrorism response. The complete description, analysis and optimization of such a system are well beyond the scope of this paper; they are a potential challenging research project.

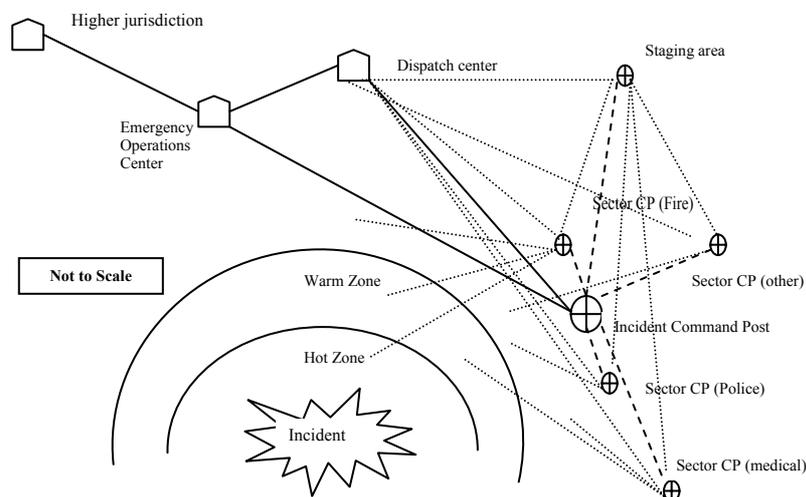


Figure 2. Highly Simplified Diagram of Typical Flow of Information

CONCLUSION

The model presented at Figure 1 will assist information system developers in understanding the complexity of activities which take place at an incident response over time. Any system designed to support communication of information during a disaster response must be based first upon the information which needs to be communicated, when, by whom, to whom, which in turn derives from what is happening. A key element of the technical system must be a means to manage information priorities based on the critically of functions at the time. Once information requirements and flow are determined, the technical system to reliably pass that information can be established.

ACKNOWLEDGMENTS

I wish to thank each emergency responder who in some way contributed to educating me by relating their experiences responding to disasters. They are a selfless, brave and dedicated group and I am proud to know them.

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