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## Quick Response Report #148

# Victim Identification and Management Following the Collapse of the World Trade Center Towers

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## INTRODUCTION

This report represents the initial findings of an ongoing research effort designed to enhance our understanding of several important aspects of post-disaster response and recovery activities. It focuses on the social and organizational processes at work in the management of the mass casualties and victim identification following the collapse of the World Trade Center towers (WTCT) with a special emphasis on how the unique circumstances of this disaster affected victim recovery and the identification processes. This aspect of disaster research has not been widely studied because, in most instances, these processes are managed in a relatively routine manner. Owing to the enormity of the destruction in New York City and the disruption of normal social and administrative systems, a new and unprecedented set of mechanisms were developed to undertake post-event victim location and identification. The long-term objective of this research effort is to document the creation and development of these emergent response and recovery systems with a special focus on the factors associated with: 1) the coordination of information and resources, 2) the capacity to learn and adapt as demands and needs changed over time, and, 3) the unintended costs and benefits of victim identification activities.

The initial activities involved in this research effort were supported through the Quick Response Grant Program funded by the National Science Foundation (NSF) and administered by the Natural Hazards Research and Applications Information Center at the University of Colorado and by the University of Louisville. The authors (plus one graduate student from the University of Louisville) conducted field research in New York City from September 25-29, 2001. We were able to conduct semi-structured interviews with representatives of the Greater New York Hospital Association, which established and coordinated the official patient locator system on their Web site; several area hospitals; and (because we are utilizing a broad definition of "victim") the Deputy Executive Director for New York City's Center for Animal Care and Control. The research team also observed activities at the Family Assistance Center at Pier 94 (the central location to obtain disaster assistance), the City Disaster Command Center, several New York City Fire Department locations, and other disaster-related sites. We also met with Professor Rae Zimmerman, New York University, who has been designated by NSF as the research facilitator for the Quick Response Program. Since events were still unfolding during the time the research team was in New York, we were unable to get access to key officials involved in victim identification from the New York City Department of Emergency Services, the Office of the Medical Examiner, the New York State Office of Emergency Services, and the Federal

Emergency Management Agency, among others, at that time. We anticipate that we will make several additional trips into the field to conduct interviews and to collect additional data. In addition to on-site data gathering, the authors have been carefully monitoring published reports in the *New York Times*, the *Washington Post*, the Federal Emergency Management Agency Web site, and other publications reporting on victim identification processes.

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## VICTIM MANAGEMENT ACTIVITIES

Immediately following large-scale disasters, several activities related to the management of victims, including both the injured and the dead, typically take place. These activities can be divided into four, sometimes overlapping phases: search and rescue, recovery of bodies and human remains, identification of victims, and, the disposition of bodies (Blanshan 1977; Blanshan and Quarentelli 1981). Although the ways in which these four activities unfold depends upon such factors as the scope of the disaster; the number and location of victims; and the availability of adequate resources, equipment, and response personnel; two generalizations about the management of victims seem warranted. One, is that the time frame for locating, identifying, and handling victims is generally fairly short. Time is obviously an important factor in saving the lives of those who are injured, and, in many cultures, retrieving human remains quickly so that they may be returned to the families is a high priority (for example, see Hershiser and Quarentelli 1979). The second generalization is that victim management activities are, by and large, a role undertaken by official response personnel such as law enforcement, firefighters, emergency medical personnel, and trained search and [rescue teams](#)<sup>1</sup>.

Neither of these generalizations explain very well what occurred following the disaster in New York City. Owing to the nature of this particular disaster, the identification of victims and the retrieval human remains took place over several months. Indeed, these activities are still taking place more than five months after the event. The mechanisms for generating and disseminating information about the identity of victims were also different in this case when compared to most disasters. In the immediate aftermath of the collapse of the WTCT, official administrative channels with primary responsibility for disaster response were overwhelmed (or in some cases, destroyed in the [collapse](#)<sup>2</sup>). In the short term, a loosely-coordinated network formed around the efforts of family, friends, co-workers, non-governmental organizations, as well as official responders and included the use of relatively new technologies such as patient locator sites on the world wide web to help identify the location of missing persons. In addition, concerned family members produced and distributed homemade posters and fliers~most including pictures of the missing and the location where they were last seen~that were attached to the walls outside of hospitals and other publicly accessible locations.

Over time, as hope gave way to resignation that those who were still missing were most likely fatalities, another set of processes involving DNA testing and other forensic techniques were established with the intent of identifying the remains of as many victims as possible. This task has proven to be daunting. The force of the initial explosion and subsequent collapse, coupled with the searing heat of the fires fed by massive amounts of jet fuel has made locating missing persons and identifying the human remains that are found extremely difficult.

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## UNIQUE ASPECTS OF THE DISASTER IN NEW YORK CITY

Four aspects of the collapse of the WTCT are important when examining how victim recovery and identification processes were undertaken in New York City: 1) the nature of the disaster scene, 2) the delayed collapse of the towers, 3) the unique characteristics of the disaster itself and, 4) the relatively large loss of life. Each of these observations highlight the extent to which this event deviated from what we might call "normal" disasters.

First, and most importantly, the response activities at what has come to be known as "Ground Zero" were shaped by the fact that the scene was simultaneously considered a disaster area, a crime scene, and it was soon realized a mass grave. Among other things, this meant that the routinization of recovery activities that typically takes place soon after a disaster was spread out over a much longer period of time as new processes were established to sift the debris for evidence, human remains, and personal effects. It also resulted in conflict and confusion between and among different official response agencies, non-governmental organizations, and families and friends of victims as they struggled over competing needs and priorities. For example, while the Mayor's office considered a rapid clean-up of debris a high priority (the Mayor was quoted as saying that he would like the site cleared by the time he left office on December 31), others were concerned that debris removal was being done at the expense of searching for bodies and [remains](#)<sup>3</sup>.

Second, the fact that the WTCT remained standing for a short period time following the plane crashes allowed official responders primarily firefighters from the New York City Fire Department to mobilize in advance of the main devastation of the subsequent collapse of the buildings. Tragically, this caused many official response personnel to become victims themselves. Thus, while most disasters are of the "hit and run" variety, this event was actually two disasters: the initial impact of the airliners followed by the collapse of the towers. We do not yet completely understand the consequences of large losses of disaster response personnel.

Third, a combination of factors, including the cause of the disaster (a surprise terrorist attack), the scope of the physical destruction, the nature of the targets (the WTCT were widely considered to be symbols of American economic might), the ongoing threat of further attacks, and the fact that the events were televised live to a horrified nation, placed considerable pressures on government officials to act swiftly to identify and quantify the missing and the dead. Since it was impossible to know who was at the WTCT on that morning (unlike in airline crashes where a flight manifest is available), and it was not known who among those at the scene were injured and taken to hospitals and who were killed, the official numbers of missing and dead released in the first six weeks varied considerably from day to day (see [Table 1](#)). The effort to identify and quantify the victims was also complicated by the fact that several news organizations such as the *Associated Press*, *USA Today*, and the *New York Times*, among others, began calculating and reporting their own "unofficial" numbers.

**Table 1. Official numbers of missing and dead in the first six weeks following the world trade center attacks.**

<b>Date</b>	<b>Missing Persons</b>	<b>Confirmed Dead</b>	<b>Total Missing &amp; Dead</b>	<b>Bodies Identified</b>
Sept. 13	4,763	184	4,947	34
Sept. 17	4,957	190	5,147	39
Sept. 20	6,333	233	6,566	N/A
Sept. 24	6,453	261	6,714	188
Sept. 27	5,960	305	6,265	238
Oct. 1	5,219	314	5,533	255
Oct. 3	5,219	363	5,582	289
Oct. 6	4,974	380	5,354	321
Oct. 9	4,815	422	5,237	370
Oct. 12	4,715	442	5,157	385
Oct. 15	4,688	453	5,141	398
Oct. 18	4,404	456	4,860	404
Oct. 21	4,313	461	4,774	411

Oct. 24	4,129	478	4,607	425
Oct. 27	3,958	506	4,464	454

Source: Data compiled from *New York Times'* articles

Note: The number of confirmed dead includes 157 passengers aboard the two airliners.

Finally, until September 11, a mass casualty disaster in contemporary America usually involved at most 200 or so victims. The disaster in New York not only produced many more victims, but the destructive forces unleashed were far worse than any other U.S. disaster experienced in our lifetimes. The jet fuel explosion, extreme heat from fires, and the crushing force of hundreds of thousands of pounds of steel and concrete involved so many body-destroying forces that locating and identifying more than a fraction of the fatalities may be impossible. As Table 1 shows, even six weeks after the September 11 attack only a small number of the people missing had been confirmed dead and an even smaller number of bodies had been identified.

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## CONCLUSION

The events of September 11 and the initial observations of the response efforts have demonstrated that a number of new elements must now be included in disaster preparedness and response plans. First, city emergency planners must be prepared to think and plan for what were previously unthinkable events involving thousands of victims. While the Office of Emergency Management (OEM) in New York City had planned for the possibility of a small plane hitting a high rise in the City, they never considered the possibility that two, wide-body airliners would be flown into the Twin Towers.

Second, emergency planners also need to anticipate and create logistical mechanisms for dealing with large numbers of casualties and fatalities. As the experience in New York demonstrated, major population centers should be prepared to produce and distribute accurate information to victim's families through web sites and patient locator systems that can be created in advance and activated immediately following catastrophic events. As we have seen, victim identification and patient locator services are vital to the interests of the victim's loved ones and, if utilized effectively, may reduce the burden on public officials. However, while technology can greatly assist in victim identification processes, the public must be aware that these mechanisms cannot completely solve the information-based problems associated with large numbers of victims.

Third, planning and emergency drills and simulations need to address the possibility of larger-scale incidents and how they might be dealt with in terms of information management and communication. Responder education and training that explicitly plans for mass casualty events should become part of all emergency planning.

Finally there are several recommendations that can be made regarding the need for future research. First, there needs to be additional research into how to manage large numbers of victims, from patient information to the process of DNA collection and matching. Second, there are a variety of ways in which the World Wide Web could be utilized in the immediate aftermath of a large-scale disaster, but little research has been performed to determine how best to utilize this as a resource. Lastly, there would be a benefit to additional research that explores how the definition of victim and victim assistance has changed, and how that then affects policy development and policymaking.

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## NOTES

1. An important exception to this general rule is the role played in search and rescue activities by those civilians who happened to be at the scene when the disaster occurred and non-official volunteers. In most disasters, however, official personnel take over victim management activities soon after the event occurs (Drabek 1985).
  2. For example, the recently (1999) constructed New York City Mayor's Office of Emergency Services was located on the 23rd floor of Seven World Trade Center. The \$13 million facility had to be evacuated at 9:03 a.m. when the second airliner struck the WTCT (Baker and Flynn 2001, p. A9).
  3. One example of this conflict was the well publicized scuffle that took place between new York City firefighters and police in early November after the Mayor's Office announced that the number of people searching for human remains would be cut back so that more heavy equipment could be utilized at the site.
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