

Perspectives on Preparedness

August 2002
No. 7



BELFER CENTER FOR SCIENCE AND
INTERNATIONAL AFFAIRS
TAUBMAN CENTER FOR STATE AND
LOCAL GOVERNMENT



U.S. DEPARTMENT OF JUSTICE
OFFICE OF JUSTICE PROGRAMS
OFFICE FOR DOMESTIC PREPAREDNESS

Executive Session on Domestic Preparedness

The Executive Session on Domestic Preparedness (ESDP) is a standing task force of leading practitioners and academic specialists concerned with terrorism and emergency management. Sponsored by the John F. Kennedy School of Government, Harvard University, and the U.S. Department of Justice, the ESDP brings together experts with operational experience in diverse professional fields that are essential to domestic preparedness -- emergency management, law enforcement, fire protection, public health, emergency medicine, national security and defense, and elected office.

The *Perspectives on Preparedness* series aims to provide useful information to the concerned professional communities about how the nation can enhance its ability to respond to the threat of terrorism with weapons of mass destruction. The ESDP also produces discussion papers and case studies. Visit the ESDP website at:

WWW.ESDP.ORG

AFTER THE ATTACK: THE PSYCHOLOGICAL CONSEQUENCES OF TERRORISM

ROBYN PANGI

History suggests that there may be many more psychological victims than physical victims in a terrorist attack. This may be true for a conventional attack, such as the use of hijacked aircraft to destroy high-occupancy buildings: while the attacks on the World Trade Center and the Pentagon resulted in thousands of deaths and physical injuries, the psychological casualties numbered in the tens to hundreds of thousands. An attack using a weapon of mass destruction (WMD) – a biological, chemical, nuclear, and radiological device – might produce even more extreme numbers. Psychological casualties easily outnumbered physical casualties in the anthrax attacks in the United States in 2001, which resulted in 23 illnesses and five fatalities, but affected millions. Likewise, the sarin attacks in the Tokyo subway system in 1995 engendered thousands of psychological casualties, compared to a dozen fatalities and hundreds of injuries. Indeed, these psychological effects are integral to the “success” of the terrorist actions, which seek to destroy the fabric of American democracy by inflicting death and terror. Hence, it is important to prepare the nation physically and psychologically for a possible attack: in

this way we can render an attack less effective, and perhaps make the prospect of carrying out an attack less attractive to terrorists.

Consequence management is the term that describes all of the operations that occur after a disaster to mitigate the disaster’s adverse effects and facilitate the community’s recovery. Fear management, a relatively new branch of consequence management, reduces the incidence of adverse psychological effects following a disaster. By definition, fear management is “the mitigation of panic and the management of public response following a WMD or other mass casualty incident.”¹

Fear management is built upon an understanding of the potential psychological effects of a WMD terrorist attack. It is critical to anticipate victims’ reactions so that first responders can plan accordingly. In other words, panic and shock, if prevalent, will effect response operations and must be anticipated. On the other hand, if—as studies indicate—panic is relatively rare, first responders need to plan for more likely scenarios such as an influx of the “worried well” and a convergence of

Robyn Pangi is a Research Associate with the Executive Session on Domestic Preparedness (ESDP) at Harvard University’s John F. Kennedy School of Government.

volunteers. Moreover, since early intervention can mitigate the short- and long-term psychological impact of trauma, response planning should include assistance for victims who are dealing with psychological effects of WMD terrorism.

This paper draws from the experience of Japanese officials, emergency response personnel, and physicians during and after the attack on the Tokyo subway system in 1995 with the nerve agent sarin. After the sarin attack, various Japanese organizations sought to record and study the short- and long-term psychological impact of terrorism on the victim population, so this WMD terrorist attack provides helpful evidence as America begins to think about fear management as an integral part of disaster response. The first section of the paper briefly discusses the 1995 attacks on the Tokyo subway system and reviews the data on the mental health consequences of the subway attack on victims and first responders. It also discusses the factors that influence individuals' and communities' responses to a disaster, and explores the facets of response that are most relevant to a WMD terrorism attack. The paper highlights several issues relevant to the potential reactions of first responders, the rescue and recovery workers who spend the most time at the site of the attack. Lastly, the paper identifies implications for emergency responders in the United States and makes concluding recommendations.

Aum Shinrikyo Attacks The Tokyo Subway System

The attacks that occurred in Tokyo on March 20, 1995, provide the most comprehensive and historically grounded fact set regarding the short- and long-term effects of WMD terrorism. On that day, just before eight a.m., five members of the Aum Shinrikyo cult used sharpened umbrella tips to pierce bags of sarin that they had carried with them onto three different rail lines of the Japanese subway system. The cult members immediately exited the trains and fled to a safehouse; the trains they had been riding on converged on the Kasumigaseki station – home to most of Tokyo's government offices and the power center of the city.

Sarin is a nerve agent; in its pure form, as little as one drop on the skin can be fatal. Individuals who are exposed to sarin may suffer nausea; vomiting; eye irritation or temporary blindness; shortness of breath; and loss of muscle control. Not knowing the source of the problem, but aware of sick passengers and an unusual odor, subway workers evacuated passengers from the stations *en masse*, many choking, vomiting, and blinded by the chemicals. The passengers fled up the stairways – often collapsing in the streets – while firefighters, police officers, and emergency medical technicians (EMTs), most of whom were unprotected, ran down the stairs to assist the victims. The scene was immediately broadcast over television and radio. Images of confusion and destruction dominated the morning news, and provided Tokyo and the world with its first glimpse of terrorism with a weapon of mass destruction.

Approximately 5,500 people went to 280 medical facilities on the day of the attack and in the days following. In all, 1,046 patients were admitted to 98 hospitals. Twelve people died as a direct result of the sarin attack.² Fortunately, the enormous potential for catastrophic damage was not actually achieved. The more than thirty train lines of the public and private transit system in Tokyo sprawl through 400 miles of underground tunnels and above-ground tracks. More than nine million passengers ride the subway daily. A rush-hour attack could thus have caused chaos and massive numbers of casualties and fatalities.³ However, the sarin used in the subway attack was only 30% pure and was simply poured into plastic bags that were then wrapped in paper, placed on the ground, and punctured – it caused far less devastation than pure sarin or an aerosol delivery vehicle would have.

Hard Data: The Psychological Response in Tokyo

The physical effects of the sarin attack were relatively contained. In all the hospitals that dealt with sarin victims, fewer than 20 patients were admitted and treated in intensive care units.⁴ Among those seen only briefly by medical practitioners, headache and malaise

were the most common persistent, generalized symptoms noted after discharge from the hospital.⁵

The more common response was psychological. A predominant psychological response in Tokyo was a phenomenon known as the “worried well” –uncontaminated and unexposed individuals who fear, despite evidence to the contrary, that they have been contaminated. Some of these unexposed individuals exhibited psychosomatic symptoms that led them to believe they were in danger. Other people associated preexisting conditions with symptoms described by sarin victims, such as eye pain or nausea. Individuals who fell prey to these phenomena frequently self-referred to area medical facilities seeking treatment. In the sarin attack, the worried well outnumbered physically affected victims by a margin of 4:1 – adding a significant burden to an already overwhelmed medical system.

As in most disasters, there is a range of responses any individual might experience after facing a WMD attack. Experts define psychological effects of a trauma as “a wide range of negative feelings, somatic symptoms, upsetting thoughts, and dysfunctional behaviors that are precipitated by an unusual and compelling experience.”⁶ Many psychological symptoms experienced after a disaster are considered to be “normal reactions to abnormal circumstances,”⁷ and patients typically reach a full recovery. The type of disaster, direct effect on the victim, and mental and physical health of the individual before the disaster all affect recovery.

Researchers in Tokyo attempted to record individuals’ responses to the sarin attack. Most of the evidence from the immediate aftermath of the attack is anecdotal, but there is a more substantial body of recorded evidence about the long-term psychological effects of the sarin attack. This paper focuses on panic, acute stress disorder, and posttraumatic stress disorder – the conditions that were recorded by mental health care professionals after the sarin attack – to illustrate the range and frequency of reactions to WMD terrorism.

Panic

In an attack, the greatest immediate mental health concern of first responders is mass panic. Such panic involves situation-inspired reactions that may run counter to the individuals’ or the common good, such as refusing to evacuate a dangerous location; taking drugs for which there is no medical indication, or for which there are counterindications; or being unable to control emotions or actions. Panic might be loosely defined as irrational behavior in the face of extreme circumstances. While this is the sort of behavior we most often associate with traumatic events such as terrorist attacks, there is little evidence that people panic in the face of disaster.

Panic was a seldom seen response in Tokyo. The responses that were seen in Tokyo were similar to those seen in other disasters. What is often referred to as “panic” consisted of hasty mass evacuation of the subway cars and terminals.⁸ This process was complicated by the number of individuals sickened or temporarily blinded by the chemical release; the influx of response personnel; and the lack of clear instructions. However, subway riders were effectively evacuated, and while many reported for medical care, most proceeded to work on foot or by taxi. Indeed, rather than being viewed as irrational actions evidencing mass “panic”, rapid flight from the traumatic scene; intense emotions; the desire to assist others in need or to forge human contact; fear; or anger are actually rational responses to a disaster.

Acute Stress Disorder and Posttraumatic Stress Disorder

Since panic does not appear to be imminent, are there critical longer-term psychological responses that first responders and mental health professionals should be aware of? Acute Stress Disorder (ASD) and Posttraumatic Stress Disorder (PTSD) are perhaps the most widely documented adverse reactions experienced by disaster survivors.

Acute Stress Disorder is “a mental condition that can occur following exposure to extreme stress or trauma but does not last longer than

one month. St. Luke's hospital treated 641 individuals on the day of the sarin attack: the greatest number of victims seen at any single facility that day. The hospital conducted a follow-up survey of 610 patients one month after the attack (which falls into the timeframe for ASD); 408 patients responded. They reported the following symptoms:

- 32% feared the subway;
- 29% experienced sleep disturbances;
- 16% had flashbacks of event;
- 16% suffered depression;
- 11% were jumpy and easily frightened;
- 10% had nightmares; and
- 10% were irritable.

According to the study detailed above, almost 60% of respondents still suffered from some post-incident symptoms one month after the incident; these symptoms can also be interpreted as an early indication of Posttraumatic Stress Disorder.⁹

Posttraumatic Stress Disorder is similar to ASD: the main difference is that while ASD presents within one month of the traumatic event, PTSD usually does not present until six months after the stressor transpires and the symptoms last longer than one month.¹⁰ One criterion for diagnosing PTSD is that the disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.¹¹ People with PTSD may be more likely to neglect their health and thus deteriorate physically. Unabated stress also leads to physical disorders, including headaches, muscular pain, gastrointestinal distress, hypertension, lowered immunity, and other ailments.¹² Chronic PTSD sufferers can experience job loss, marital problems, increased substance abuse, suicide attempts, ulcers, headaches, and hypertension.¹³

Statistics on PTSD among the victims of the sarin attack are available from six months to six years after the attack. One study of 35 inpatients in a metropolitan hospital six months after the event found that 26% of the patients were at high risk for PTSD. Based on this data, the study concluded that overall, 20-25%

of at least moderately poisoned victims suffered from PTSD or subthreshold PTSD symptoms.¹⁴ The same hospital surveyed 20 patients who visited for a checkup two years after the event: 10% were identified as suffering from PTSD; 10% were identified as recovered from PTSD.

The Special Case of Rescue Workers

Perhaps no class of people on the scene of a disaster is as vulnerable to psychological stress as rescue workers. Rescue workers help victims physically and mentally cope with and recover from the disaster – but they, too, are vulnerable to psychological reactions when confronting traumatic events. “In the aftermath of ... terrorist attacks, the intensity of responders’ work, the long duration of the response campaigns, the multiplicity of risks, the horrifying outcomes of the attacks, and the lack of knowledge about hazards all contributed to stress.”¹⁵

First responders are confronted with several stressors.¹⁶ The largest is that they must choose between professional and familial responsibilities. Additionally, first responders who do participate in the response effort repeatedly confront horrifying scenes of death and destruction. The psychological consequences, particularly when the rescue worker may be putting his or her life at risk by entering a contaminated area, can be extreme.

There is limited data on how the sarin attacks affected first responders. Following the attack in Tokyo, 27 firefighters were interviewed by mental health care providers. Four exhibited PTSD: all four had been severely poisoned by the sarin.¹⁷ This data, though incomplete, reinforces the notion that disaster plans must account for the needs of first responders and other rescue workers.

What Determines Rates of Post-Attack Stress or Anxiety Disorders?

The nature of an attack, individuals’ proximity to the attack site, their previous exposures to trauma, their social network, and numerous other factors can influence the likelihood that victims will suffer psychological effects.

Trauma and disaster: A WMD terrorist attack is a traumatic event, but it is unlike other traumatic events like street crime because it is also a disaster. While many traumas affect only one or a few people, a disaster “overwhelm[s] the available community resources, further threatening the individuals’ and the community’s ability to cope.”¹⁸ A WMD attack, which might overwhelm both individual coping mechanisms and the community’s response and recovery system, may have a greater effect than disasters or traumas experienced in isolation of one another.

Natural vs. man-made disaster: Part of what makes WMD terrorism so frightening is the technological nature of the attack. Unlike an “act of God” such as a hurricane or flood, man-made disasters, such as chemical spills — even when accidental — have an element of blame. The many unknowns surrounding chemical, biological, nuclear, and radiological disasters, coupled with the threat of environmental degradation and long-term health consequences that they carry, make them more frightening to many people.

Intentional vs. accidental disaster: When technology or nature is intentionally perverted by man in order to harm others, “studies suggest that the disaster take[s] a greater emotional toll” on the victims.¹⁹ According to a psychiatrist who follows sarin victims, trust in society tends to increase after accidental and natural disasters, but tends to *decrease* after an intentional disaster.

Proximity: Those closest to the attack scene are most susceptible to psychological damage. However, as the effects ripple out from the epicenter of the attack, even those people not directly affected by the attack may require physical and mental health services.

Previous exposure to trauma or stress: Those who have experienced previous trauma, are experiencing concurrent trauma, or already suffer from a

psychological disorder may be at higher risk of adverse effects. This may be particularly important in planning for rescue workers, who frequently encounter catastrophic situations.

Social network: Access to a strong social network can reduce the stress of a disaster. Isolation from other victims or counseling options, on the other hand, can heighten victims’ stress.

Each of these factors was at play in the sarin attack. The attack was an intentional, man-made, traumatic disaster. The attack occurred in the center of a densely populated urban area during rush hour, resulting in scores of physically and psychologically affected individuals. Moreover, because it primarily affected individuals during their workday commute, the victims did not have a preexisting social network. Although it is impossible to speculate on the previous traumatic exposure of the victims, it is known that many of the response workers had confronted difficult scenes in the past and might therefore serve as an example of individuals’ who encountered repeated trauma.

The sarin attack was, indeed, psychologically damaging for many of the victims. The statistics on ASD and PTSD are telling: many victims continue to suffer from long-term psychological disorders associated with the sarin attack.

Lessons Learned from Tokyo

Four factors specific to the Tokyo subway attack additionally impacted the recovery of the victims. First, since the attack occurred in the transportation system of a major metropolitan city, the victims’ only commonality was the time of their commute. They lived far apart, did not necessarily work together, and had no opportunity to interact with fellow victims after the attack – so there was none of the community building and identification that might have alleviated much of the stress for individual victims. Weak social networks hindered the natural course of psychological recovery through informal group debriefing and the formation of a sense of community.

Second, psychiatrists and public officials involved in consequence management following the subway attacks concede that the delay in providing psychiatric treatment adversely affected the emotional recovery of some victims and their families.²⁰ Dr. Asukai studied 45 patients in one metropolitan hospital one month after the attacks. His team offered psychiatric intervention for high-risk patients, consisting of one or two interviews with a psychiatrist. Most of the patients reported a feeling of relief following psychiatric intervention. However, these feelings of reduced stress were not reflected in the patients' test results six months later: the follow-up study revealed no significant improvement in their test scores.²¹ Although intervention provided superficial relief, it came too late to have a significant impact on the patients' mental health. The data "suggests the difficulty of establishing a mental health regimen for such disasters"²² especially if months or years have passed since the exposure to the trauma.

Third, with the exception of the study mentioned above, most treatment was provided at the initiation of patients, with very limited proactive psychological treatment offered to victims. Outside of the major medical centers, such as St. Luke's International Hospital, most facilities treated the physical needs of the victims and did not address their psychological needs. Group debriefings or counseling sessions were rare, and patients typically had to seek psychiatric care themselves.

Fourth, there is a stigma attached to victims in Japan that is distinct from the perception of victims in America. Socially, victims are often considered trouble-makers and are isolated from their families and coworkers. Institutionally, "Japan is often described as lagging 20 years behind western countries in terms of the support provided for violence victims."²³ Victims received neither social nor monetary support. When it comes to psychological damage experienced by victims of the subway attack, they "have received neither compensation nor any kind of recovery assistance from either the guilty party [as they would in a case resulting in physical injury], the government, or society."²⁴

Implications for the United States

Is the United States any more prepared in 2002 to handle the psychiatric consequences of a WMD terrorist attack than Japan was in 1995? The short answer is "somewhat." The U.S. federal government has focused a good deal of attention and resources, particularly since September 11, on mitigating the physical effects of a WMD attack. However, fear management is a relatively new subset of consequence management for most academics, emergency response practitioners, and policymakers and has received inadequate attention.

A mass casualty or mass fatality terrorist attack will overwhelm local and state resources. There is no comprehensive response plan for fear management; this translates to a lack of preparedness on the part of federal, state, and local governments. The following section outlines the resources in place to address the psychological needs of victims.

U.S. Federal Resources

Agencies' responsibilities for responding to terrorism are spelled out in the Federal Response Plan (FRP). Under the FRP, the Federal Emergency Management Agency (FEMA) is designated as the lead federal agency for consequence management. However, FEMA focuses on physical rescue and recovery operations, and provides relatively little by way of mental health counseling in times of disaster. The mental health services that FEMA coordinates are provided by the Center for Mental Health Services (CMHS), which can offer basic resources to communities. After a presidentially declared disaster, for example, states can apply for Crisis Counseling Program grants to provide mental health services that help disaster survivors recognize common psychiatric responses and deal with them in the short term.²⁵ In addition, FEMA grants funds to local agencies that provide mental health services in emergencies. One such program provides services to states for approximately one year following a presidentially declared disaster. The program's efforts to respond to psychological needs following major disasters have grown

dramatically over the 22 years since it was established. Funds, which of course are allocated according to the needs of response operations in any particular year, reached \$60 million in 1994 and \$30 million in 1995.²⁶ The National Disaster Medical System provides additional resources through the Disaster Medical Assistance Teams that focus on mental health.

The FRP divides up response activities into 12 Emergency Support Functions. The plan calls for the Department of Health and Human Services (HHS) to act as the lead federal agency for Emergency Support Function (ESF) #8, Health and Medical Services. Under ESF #8 the primary agency for mental healthcare within HHS is the Substance Abuse and Mental Health Services Administration (SAMHSA). The mission of this ESF #8 subgroup is to “assist in assessing mental health needs; provide disaster mental health training materials for disaster workers; and provide liaison with assessment, training, and program development activities undertaken by federal, state, and local mental health officials.”²⁷

There is a Crisis Counseling and Assistance Program (authorized by sec. 416 of the Stafford Act) “designed to provide supplemental funding to the states for short-term crisis counseling services to people affected by a presidentially declared disaster.”²⁸ Two programs may be funded at the state’s request: immediate services to help the state or local agencies “respond to disaster victims with screening, diagnostic, and counseling techniques, [and] outreach services such as public information and community networking.” A program for longer-term needs can provide up to nine months of crisis counseling, community outreach, and education services. Both programs are designed for residents of the affected area, or those who were in the area at the time of the disaster.

U.S. Non-Governmental Organizations

Several non-governmental organizations play a role in the current mélange of disaster mental health care efforts, including the American Red Cross (ARC), the American Psychiatric Association, the American Psychological

Association, and the American Counseling Association. In fact, FEMA’s web site refers individuals suffering from disaster-related stress to the American Red Cross or the Salvation Army.

During disasters, several organizations work with the ARC to provide mental health services to disaster victims. The American Counseling Association, the American Psychological Association, and the National Association of Social Workers have all signed separate memoranda of understanding with the ARC that set out agreements for dealing with the mental health aspects of disaster relief operations. These organizations can mobilize massive human resources to a disaster scene. For example, the American Psychological Association’s Disaster Response Network consists of 1500 volunteer psychologists integrated into ARC services.²⁹

Public and private medical facilities are also integral to the provision of mental health care after traumatic events. “In theory, accredited hospitals are to have plans for dealing with disaster; in fact, few hospitals and fewer communities have disaster plans to minimize posttraumatic psychological sequelae.”³⁰ In an era of downsizing and cost containment, private medical facilities may be unprepared to “flex” to meet the urgent care needs of high numbers of psychological patients.

What Remains to be Done?

It is too early to analyze the long-term psychological needs of the victims, or the effectiveness of the existing mental health programs after the attacks on the World Trade Center, or the anthrax attacks. But, as with many aspects of consequence management, the current system can certainly be improved to meet the needs of individuals and communities after a WMD terrorist attack. At present, few first responders have received training specific to traumas involving weapons of mass destruction. Second, the mental health needs of victims are underestimated. Third, the structure overemphasizes the federal role in disaster management and ignores the immediate mental health care role of first

responders, particularly emergency medical workers. Fourth, there is a tendency among mental health organizations in America, unlike in Japan, to focus on the needs of emergency workers instead of victims, whereas both populations will require assistance. Fifth, even when victims are given due consideration, the net is cast narrowly and does not always include family, friends, witnesses, and others who are emotionally affected by the disaster. Finally, intervention tends to be tailored to the short-term needs of victims rather than to long-term recovery.

Current plans rely too heavily on federal resources at the expense of local assets. Mental health needs cannot be addressed by the federal government alone. Nor does federal law provide sufficient resources to meet the need. Executive orders such as Presidential Decision Directive 39 may relegate domestic terrorism response to the federal arena, but responsibility for stress and other effects on rescuers is not part of federal policy, justified on the basis that, “the federal government does not have primary responsibility for consequence management, but supports state and local governments in domestic incidents.”³¹ The federal government has the responsibility for, but neither the institutional investment in nor the capability to pursue, a comprehensive disaster mental health response plan.

Much of the mental health planning in the U.S. deals not with the large numbers of victims who will require care, but focuses on the mental health needs of rescue workers. In some non-governmental organizations such as the ARC, as an example, “top priority for mental health services is to Red Cross volunteers as well as other disaster responders...The second priority is providing services to victims and their families.”³² However, governmental and nongovernmental programs aimed at rescue workers’ mental health are insufficient. The APA and the U.S. Public Health Service have both observed that services under existing federal programs are inadequate to meet these needs. In its final report on the mental health response to the Oklahoma City bombing, the APA judged mental health and stress management services to responders as “quite extensive and impressive,” but cited the need

for “well-planned and adequately funded long-term disaster mental health services.”³³

Moreover, there are victims far beyond the immediate perimeter of the attack scene. Friends, family, the worried well, colleagues, and concerned citizens may all suffer from emotional distress after an attack. In “A National Survey of Stress Reactions after the September 11, 2001, Terrorist Attacks,” a telephone study done to assess the immediate mental health effects of September 11, 44% of the adults surveyed reported one or more substantial symptoms of stress, and 90% had one or more symptoms at least to some degree. The survey concluded that in general, after the September 11 attacks, adults and children across the country displayed substantial symptoms of stress. Another post-September 11 analysis suggests that “there is no systematic way to treat all of those who might need help” after an attack, because affected individuals are not confined to the area of the attack, but are spread throughout the country.³⁴

Recommendations

Filling the gaps in America’s mental health response plans and capabilities is vital to the overall domestic preparedness effort. One of the purposes of terrorism is to inflict terror. More than natural disasters – or even other intentional, man-made disasters – WMD terrorist attacks can inspire panic, fear, and long-term psychological distress in the victims and the community as a whole. Preparing an appropriate response can reduce the incidence of psychological problems among at risk individuals and communities.

Further establishing the need for a fear management initiative is evidence that “disasters have been found to produce two kinds of effects, ones caused by the event itself and others brought about by society’s response to the disaster.”³⁵ In other words, an individual may be able to handle the trauma of the actual disaster, but can be adversely affected by the federal government’s uncoordinated or unsympathetic response to the disaster. In addition to mitigating effects caused by the disaster itself, government and non-government

response personnel must avoid inflicting an additional psychological burden on victims through insufficient planning or inept implementation.

The recommendations presented here for establishing a mental health plan for WMD terrorism are broken down by phase of disaster.³⁶ For example, while communication with the public is vital through all phases of a disaster, it may take different forms before, during, and after an attack. Similarly, while improved security is best undertaken prior to a disaster – at best, deterring an attack – visible improvements *after* a disaster can help reassure citizens, thus lessening the psychological tension associated with the attack.

Communication

Before: Public Education With Realistic Threat Assessment

In Japan, there was no notable education about or warnings of WMD terrorism prior to the subway attack. Nor was there any open discussion about Aum Shinrikyo as a potential threat to the population. This made the attack even more shocking to the Japanese people. In the U.S., government officials have been increasingly vocal regarding the WMD terrorist threat since 1995, stimulated by Tokyo's experience, and particularly since the anthrax attacks in 2001. In the U.S., however, the government and the media are emphasizing not the low probability of attack, but the potential for catastrophic consequences and America's lack of preparedness to meet this burgeoning threat. This type of communication between policymakers and the public is not productive: it fails to explain how the threat assessment is reached and what is being done to improve the country's preparedness.

The federal government has issued numerous alerts to the nation since September 11, calling for a heightened state of vigilance in preparation for potential terrorist attacks. The alerts do not mention a specific threat but often convey unsubstantiated or overly-broad intelligence. Many in congress and the public, and some counterterrorism experts, argue that vague alerts alarm people without telling them how to

respond. Others are concerned by the "crying wolf" phenomena – an imprecise alert system that keeps people constantly on edge will contribute to complacency as the public views the threats as non-credible and overly commonplace. Finally, many state and local officials are worried that maintaining a high level of security commensurate with the alerts is stretching their already-strained budgets.

Efforts to remedy these concerns are currently being made by the Office of Homeland Security as well as police and security officials, who are proposing a five-step alert system in which colors indicate the level of the threat. Government officials must take this one step further by communicating both what the threat is, and how the assessment has been made. An educational campaign to inform citizens of the nature of potential weapons and appropriate responses is a necessary complement.

During: Working With And Through The Media

A good way to communicate with the public, of course, is through the media, but it is not simple. The media has the potential to be a hindrance. For instance, irresponsible media coverage can cause problems by, "inreas[ing] convergence to the scene both by the curious and by those with genuine concerns. By their own convergence, both in person and by telephone [members of the media] can create pressures on managers for information to the point where media demands interfere with effective response. They can spread rumors and so alter the reality of disaster, at least to those well away from it, that they can bias the nature of the response."³⁷

However, the media can also be helpful – and making sure that it is helpful is the job of a well-prepared, rehearsed, and implemented response plan.³⁸ A plan to deal with media includes eight components:

- Establish what media outlets exist and what they can do.
- Establish the media's potential in a disaster.

- Develop a plan for dealing with the media and do that planning in cooperation with them.
- Identify those persons capable of putting the plan into effect.
- Test the plan with the media playing an active role in the test.
- Evaluate and revise the plan in light of the test, ensuring that the media's criticisms are taken into account.
- Make sure the plan becomes known to all those involved in the disaster response, including the public.
- Make sure the plan is constantly revised in light of changing conditions, regular tests, and actual experience.³⁹

Moreover, full disclosure to the media (within reasonable bounds) is critical and withholding information is often detrimental. The media have alternative sources of information, including the public itself. Word of mouth works very quickly so that information gets around even in a media blackout. Officials should be concerned with getting out accurate information, even after misleading rumors begin to circulate: "Rumors can be stopped very quickly if they are identified and corrected over the air. They should not be ignored" or they will proliferate.⁴⁰

After: Sharing Information With the Public

In the days and weeks following the sarin attack:

Tokyo's millions moved under a cloud of fear. Taxi drivers reported a surge in business as people avoided the subways. Commuters who had no alternative were seen sniffing subway cars before boarding. Fewer people dozed in their seats. The most common of sounds – a person coughing, a child's scream, a can rattling down the aisle – was enough to send ripples of alarm through the car. One day after the attack, one subway line was stopped while a foul-smelling package was investigated. It contained fish.⁴¹

Could government action have alleviated the feelings of fear described above? Despite the fact that the police raided Aum compounds wearing full personal protective equipment, and carrying canaries as sentinels, they refused to articulate a link between the cult and the attack. "To the public, the intense speculation on whether a religious group had gassed Tokyo's subways was almost as unbelievable as the attack itself...For the next week, as a mesmerized nation watched live on television, police began unearthing a mammoth stockpile of chemicals at Mount Fuji ... police estimated that Aum's stockpile held more than 200 kinds of chemicals, including all the key elements for producing sarin."⁴² Yet, these raids were not reassuring to the public. A statement of innocence recorded by Asahara was played across the national media. No arrests had been made. "In contrast to the cult's loud declarations of innocence, Japanese authorities seemed intent on keeping the public in the dark."⁴³

Open investigation of Aum Shinrikyo by police and information-sharing about the sarin attack and other alleged activities on the part of the government would have given the Japanese public a way to think about the potential destructiveness of Aum Shinrikyo and chemical weapons. Instead of pursuing this course, "during these anxious days, Tokyo learned a painful lesson in the tactics of modern terrorism. Once the terrorist has displayed the dreadful destruction he is capable of, there is no need to launch another attack to disrupt a city and hold its population ransom. As one journalist noted, the mere threat of another attack 'paralyzed Tokyo almost as effectively as nerve gas itself.'⁴⁴ Concerns that the public cannot handle information about the situation and appropriate response are misconceived. Full disclosure is preferable to withholding information, and it helps curb the public's tendency to speculate, and to act based on speculation.⁴⁵

Infrastructure Protection

Before: Training and Exercises

Large- and small-scale exercises are an integral part of an emergency response service's

training regime. Exercises that are designed to simulate an actual WMD attack allow responders to practice activities that can be used in more routine operations as well as skills that are specific to a WMD attack. Exercises and daily training undertaken prior to a disaster play an important role during a disaster event. The skills and protocols practiced in training can be more readily applied during the disaster, which leads to a successful performance and the feeling of being more in control during the operation.

Over the past several years, new players – including public health departments – have been incorporated into the design and play of emergency response training and exercises. However, some key players are still overlooked, including private medical practitioners and the media. Both are critical to fear management. In TopOff, a large-scale simulation involving a simultaneous release of chemical, biological, and radiological agents in three large U.S. cities, there were physicians standing by to help victims, but no psychiatrists or mental health professionals.⁴⁶ To create, and if necessary implement, appropriate disaster mental health plans for responding to a WMD attack, the medical community must be consulted and included in exercises.⁴⁷

The media also need to become fully active participants in exercises. At present, they may be invited to observe, or to act in a contrived manner that does not accurately reflect modern media outlets. It has been posited that it would “make more sense to convince some local media to act in a simulation the way they would in a real event. They should be asked to cover not the exercise but the simulated event: to try to press for information from already harassed officials; to try to crash official lines.”⁴⁸ This will help emergency responders and public officials to understand how to best work with the media to calm the public and to convey important information to the citizenry.⁴⁹

During: Managing Convergence

There is a popular conception that civilians and rescue workers will flee a site that has been attacked. This is not supported by the literature on other disasters. “Although erroneous

popular images focus on the flight of people *out of* the stricken area, a major problem communities actually face is convergence, or the movement of people and resources *into* the stricken area.”⁵⁰ The press, friends and families of the victims, volunteers, curious onlookers, and response personnel who have not been assigned to the response may all converge at or near the scene. In many disasters, managing convergence diverts resources that might otherwise be applied to disaster rescue and recovery operations. Despite this evidence that convergence, not flight, is the common human response to disaster, many experts have speculated that in a WMD event, as opposed to a natural disaster or conventional terrorist attack, the reaction will be the opposite. It is difficult to refute this hypothesis with complete certainty because most studies of human behavior, however, have focused on natural disasters; one analyst argues that:

Technological disasters tend to elicit a different pattern of public response than do natural disasters. Whereas the public tend to be reluctant to evacuate in natural disasters, evacuation from technological disasters tends to exceed official expectations. Factors contributing to this difference are the lack of familiarity and greater perception of threat associated with the latter. Technological disasters, unlike natural disasters, result in a greater reliance upon governmental authorities and a reduced use of community and family social networks.⁵¹

However, the experience in Tokyo suggests that convergence will occur after a WMD attack. In fact, “convergence did happen in the sarin incident even though the event was so spread out.”⁵² During the attack, bystanders entered the subways to assist emergency workers; after the attack, concerned citizens, friends and family of the victims, and media from around the world converged on the attack area seeking information.

One of the best ways to reduce convergence is by sharing information with the public. A good public information campaign that regularly updates the public on the situation removes

the need for concerned family, worried well, and curious outsiders to enter the stricken area to get the information first hand. Experts agree, for example, that “the communication of the risk to individuals following a bacteriologic attack will be critical to how communities and individuals respond.”⁵³

Full disclosure can also alleviate telecommunications convergence, which can overwhelm the communication infrastructure. Spokespersons can ask people to stay away from the scene and refrain from calling emergency phone numbers unless they are facing a genuine emergency. They can also reduce the number of nonemergency calls by shifting to a “comprehensive news policy” – by giving out information that answers questions before people call to ask them, reporting on areas not hit by the disaster so people do not wonder if friends in those areas are affected, etc.⁵⁴

After: Improved Security Measures And Law Enforcement

Improved security measures and timely law enforcement safeguard the public from future attacks and offer visual reassurance of individual safety. The official reaction to the sarin attack was to heighten security: “cars were searched, cyclists stopped, litter bins and coin lockers sealed. In department stores and stadiums, security guards [asked owners to identify their bags]”⁵⁵

Achieving a sense that a positive change has resulted from an otherwise terrible incident is critical to the psychological recovery of individuals and the rebuilding of the community. For many victims, prosecuting the perpetrators provides a sense of closure and justice that facilitates recovery. Furthermore, involving victims in the law enforcement phase of disaster recovery, such as the litigation portion of the process, is as important as providing proactive response roles for victims during the later stages of disaster recovery. In Tokyo, the legal process has not served to assuage the psychological impact suffered by survivors. On the contrary, “survivors and victims’ families say they feel their rights have been overlooked, while the rights of the defendants, the members of Aum on trial for the gas attack, and a raft of

other heinous crimes, have been closely guarded.”⁵⁶ For example, Aum cult leader Asahara was placed under medical supervision free of charge, whereas victims are paying for medical care and litigation. In Tokyo, a National Police Administration survey found that “additional fear and frustration were expressed regarding the prolonged trial of [Asahara], as well as recent reports confirming that current Aum members are involved in a major effort to rebuild and recover their organization.”⁵⁷

Rapid law enforcement is also key to recovery. In Tokyo, resentment over the drawn-out legal process lingers. In fact, “71% of the respondents expressed hope for an early conclusion of [Asahara’s] trial.”⁵⁸ The general public expressed a desire to put the episode behind them, as represented by the litigation process. At the same time, many victims feel that they are being forgotten. A neurologist treating PTSD patients notes that “with the memory of the incident fading in most people’s minds, survivors still suffering posttraumatic stress disorder are receiving less public sympathy.”⁵⁹

Psychological Assistance

Before: Preparing Response Personnel

Response agencies prepare rescue workers for the physical demands of their work. They should also emphasize three aspects of mental health training: preparing response personnel for their own psychological trauma, training response personnel to help manage the trauma experienced by victims, and training psychiatric workers to respond to WMD disasters.

In standard training, little attention is given to the mental health needs of first responders until after an attack.⁶⁰ Failure to consider the mental health needs of responders during the planning and training phases can have catastrophic results. Studies indicate that response personnel play conflicting roles in an emergency: they may be torn between family and professional responsibilities; they must decide between moving to safety or converging on the scene; and they are likely to suffer psychological effects from extended exposure to the trauma.

Additionally, traditional first responders – fire, police, and emergency medical technicians – need to be sensitized to the psychological needs of victims. Mental health staff should have the opportunity to educate emergency planners and public officials about how laypeople and response personnel respond to emergency situations. “A tremendous mythology exists regarding human behavior in disaster. For example, a common misperception is that panic and looting are common occurrences following a disaster. *Accurate* information, in this case, that panic and looting are extremely rare in natural disasters, can help planners and responders to base their action plans for deployment of staff and materials on a more realistic prediction of what may be needed.”⁶¹

Concurrently, psychiatrists need to be trained in the specifics of responding to a WMD terrorist attack, such as “the effects of, and treatment for, the chemical and biological agents that may be used in a terrorist incident.”⁶² Mental health professionals also need training in how to work in a contaminated environment, where protective gear or at least a gas mask may be needed.

During: Rapid Response With Roles For Victims As Well As Professionals

The popular image of a first responder is a trained municipal employee such as a firefighter, police officer, or emergency medical technician. In a WMD terrorist attack, the first responders may be untrained bystanders, such as the transit workers in the subway attack. Additionally, in a mass casualty attack there may not be enough trained professionals to aid the victims. Hence, it may be necessary to craft roles for victims in the response effort. Experience has shown that “nonprofessional citizens are capable of full and useful participation in times of crisis.”⁶³ This may hold true for victims at the scene, as well as for civic groups that are already organized and have some infrastructure in place that may aid response workers.

Providing roles for victims has a secondary benefit. A terrorist attack is by its nature particularly stressful.⁶⁴ However, “it is not the stress that is dangerous to individuals but rather

their inability to cope with it that is significant.”⁶⁵ Experts believe that an individual’s ability to change their situation has a great impact on the onset and severity of psychological distress.⁶⁶ “The assignment of simple work tasks that facilitate the care of other patients can help restore function to the psychological casualties. The recovery environment should be constructed to create a sense of safety and to counteract the helplessness induced by the terrorist act.”⁶⁷ Hence, establishing proactive roles for victims may be the first and most important step toward their psychological recovery.

After: Early Proactive Psychological Intervention For Victims And Responders

Experts agree that early intervention is one key to preventing ASD and PTSD or mitigating the severity of these conditions.⁶⁸ “Intervention during a crisis and prior to the development of psychological symptoms has been found effective in reducing subsequent emotional problems.”⁶⁹ *Immediate* intervention may not always be the best option; each person must be allowed to grieve at his or her own pace and be counseled when it is appropriate to their needs. In fact, even when the first opportunities for intervention are missed, it is still possible to mitigate long-term effects within the first month after exposure.⁷⁰ The importance of *early* intervention, however, was starkly revealed in Tokyo. Although treatment provided months or even years after the attack relieved some symptoms, test results indicate that the underlying psychological disorders were not adequately resolved with delayed treatment.

The method of early intervention and treatment must, of course, be determined by professionals on an individual basis. In general, however, group debriefings have been used to mitigate effects and can help identify those who need further assistance.⁷¹ This is an easy method of early intervention that allows victims to share their stories and identify points of concern. Critical incident stress debriefing has been popularly adopted by rescue organizations. These group meetings are for all personnel in the group, regardless of whether or not symptoms are present, and are led by a combination of unit leaders and mental health professions.⁷²

Intervention by trained professionals is only one aspect of a proactive fear management program. “Disasters generate highly novel circumstances that require disaster mental health workers to adopt creative and flexible approaches to interventions that deviate from the usual ways of providing mental health services in the familiar treatment settings left at home.”⁷³ There is also a significant role for community groups, trained lay people, and victims. “Experience in the U.S. crisis counseling program, at the federal level, has consistently shown that a blend of professionals and trained non professionals is the most effective provider mix.”⁷⁴ Community groups can augment the cast of mental health professionals, bringing a greater sense of community support to the victims and providing useful roles for individuals who might otherwise join the ranks of the worried well or emotionally distressed.⁷⁵ Moreover, “even in the most severe disasters, nonvictims typically outnumber victims, so the community retains the ability to provide for itself.”⁷⁶ Whereas the number of mental health professionals available on scene in the immediate aftermath of a disaster is small, the number of non-critically wounded civilians should be large enough to allow them to craft an effective support network. This is often more in tune with victims’ needs than an influx of outside professionals.⁷⁷

Working within the community might also remove the stigma that can still surround psychiatric care. Reluctance to seek help due to stigmatization, although perhaps less extreme in the United States than in Japan, is also a major barrier to psychological recovery particularly for rescue workers.⁷⁸ Thus, requiring all police officers in a community to attend sessions run by community members removes the barrier an individual officer might feel about reaching out for help on his own, exposing a larger population to beneficial treatment. A trusted leader, such as a member of the clergy or a community leader, can also help ease this transition from the role of helper to that of one receiving help that any first responder must make if he or she is to benefit from psychological intervention.

Conclusions: Taking Some of the Terror out of Terrorism

“History teaches us that the greatest numbers of victims or casualties arise from the indirect psychological consequence – FEAR.”⁷⁹ Several contemporary academics have issued reminders that terrorism is the use of violence designed to inspire fear and terror. Since Aum Shinrikyo’s 1995 subway attack, many countries have undertaken plans to deter WMD terrorism, and to mitigate its consequences should WMD terrorism occur. However, few officials have developed or practiced plans that mitigate the fear and anxiety that result from terrorism. Yet, “planning and preparation for biological attacks and their attendant psychological consequences can diminish the terrorists’ ability to achieve their overall goal – the induction of terror”; therefore they are essential for the United States as it faces a newly heightened state of affairs where mass destruction terrorism is a very real threat.⁸⁰

America’s experience with terrorism has been a chilling one, claiming thousands of lives and impacting millions more. The entire country has witnessed the psychological damage that such attacks can inflict. The greatest concern for first responders engaged in domestic preparedness is saving lives. This mission, of course, is paramount, and should not be seen as trivialized in the call for prioritization of mental health response. As their name implies, weapons of mass destruction have the potential to create thousands of fatalities and scores of casualties. Mitigating their physical effects is, rightly, the first priority. History has shown, however, that not all WMD attacks create mass fatalities. Indeed, the sarin attack and the recent anthrax attacks in the United States resulted in less than 20 fatalities. The psychological casualties, on the other hand, numbered in the thousands in each scenario. Hence, plans must account for what, until now at least, has been the predominant result of WMD terrorism: psychological damage.

The psychological impact of a WMD terrorist event need not cripple the community. The deleterious psychological effects of WMD terrorism can be ameliorated if a well defined and trained mental health plan is incorporated into emergency response plans. Such a plan should include all the tools of fear management.

This project was supported by Grant No. 1999-MU-CX-0008 awarded by the Office for State and Local Domestic Preparedness Support, Office of Justice Programs, U.S. Department of Justice. The Assistant Attorney General, Office of Justice Programs, coordinates the activities of the following program offices or bureaus: the Bureau of Justice Assistance, the Bureau of Justice Statistics, the National Institute of Justice, the Office of Juvenile Justice and Delinquency Prevention, and the Office for Victims of Crime. Points of view or opinions in this document are those of the author and do not necessarily represent the official position or policies of the U.S. Department of Justice.

The author would like to thank Naofumi Miyasaka, Nozomu Asukai, and Tetsu Okumura for information; Juliette Kayyem, Patricia Chang, and Rebecca Storo for patient reading and suggestions; Miriam Avins for editorial work; the Japan Society and Richard Falkenrath for the opportunity to undertake field research; and Susan Hamilton of ARC and Anand Pandya of Disaster Psychiatry Outreach for feedback.

NOTES

1 Mark J. Morgan and Paul M. Camper, "Fear Management," April 1, 1998, manuscript on file with the author, p. 1.

2 Nozomu Asukai, "Health Effects Following the Sarin Attack in the Tokyo Subway System" unpublished manuscript on file with the author, p. 2.

3 Ian Reader, *Religious Violence in Contemporary Japan: The Case of Aum Shinrikyo*, Nordic Institute of Asian Studies Monograph Series, No. 82 (Great Britain: Curzon Press, 2000) p. 23.

4 Asukai, "Health Effects Following the Sarin Attack," p. 3.

5 Patients were considered to be in "critical" condition if they had cardiac or respiratory arrest, and in "moderate" condition if they exhibited signs and symptoms other than eye problems or mild headache after first six-hour observation. Those in "mild" condition mainly had eye problems; these patients were retained for six hours for observation and then released.

6 Don M. Hartsough, "Measurement of the Psychological Effects of Disaster," in Jerri Laube and Shirley Murphy, eds., *Perspectives on Disaster Recovery* (Connecticut: Appleton-Century-Crofts, 1985) pp. 22-61, p. 23.

7 Ibid.

8 "Where possible [evacuation] is the first line of action ... it differs from panic in that there is control and a degree of rationality and in that it is still social, recognizing the needs of others as well as the self." Beverly Raphael, *When Disaster Strikes: How Individuals and Communities Cope with Catastrophe* (New York: Basic Books, 1986) p. 61.

9 Asukai, "Health Effects Following the Sarin Attack"; See also Sadayoshi Ohbu, Akira Yamashina, Nobukatsu Takasu, Tatsuo Yamaguchi, Tetsuo Murai, Kanzoh Nakano, Yukio Matsui, Ryuzo Mikami, Kenji Sakurai, and Shigeaki Hinohara, "Sarin Poisoning on Tokyo Subway," at <<http://www.sma.org/smj/97june3.htm>>.

10 "As indicated in DSM-IV, the diagnosis of posttraumatic stress disorder is made if the symptoms (such as recurrent and intrusive recollections of the event, flashbacks, avoidance, and increased arousal) continue for more than one month." Acute PTSD is diagnosed if symptoms last for less than three months, chronic PTSD if symptoms last for more than three months. Elizabeth K. Carll, "Workplace and Community Violence: Intervention and Prevention," in Elizabeth K. Carll, ed., *Violence in Our Lives: Impact of Workplace, Home and Community*, (Needham Heights, MA: Allyn and Bacon, 1999).

11 Brian W. Flynn, "Disaster Mental Health: The U.S. Experience and Beyond," in Jennifer Leaning, Susan M. Briggs, and Lincoln C. Chen, eds., *Humanitarian Crises: The Medical and Public Health Response* (Cambridge, MA: Harvard University Press, 1999), p. 148, pp. 4-23, p. 15-16.

12 "PTSD is distinctive among psychiatric disorders in terms of its potential to promote poor health because of both the physiological and psychological abnormalities associated with this disorder." Asukai, "Health Effects Following the Sarin Attack," p. 9. See also E.E. Flynn, "Victims of Terrorism" in *Contemporary Research on Terrorism* pp. 337-356, p.349.

13 Charles B. Wilkinson and Enrique Vera, "Clinical Responses to Disaster: Assessment, Management, and Treatment" in Richard Gist and Bernard Lubin, eds., *Psychosocial Aspects of Disaster* (New York: John Wiley & Sons, 1989), p 243.

14 Asukai, "Health Effects Following the Sarin Attack," p. 5.

15 Brian A. Jackson, et al., *Protecting Emergency Responders* (California: RAND, 2002), p. 16.

16 Psychological reactions to this type of stress are abundant. "Since September 11, at any given time there are 75 FDNY members 'off the line' for stress-related issues. Before the catastrophe, the average was 5-10." After the Oklahoma City bombing, studies found that "eight emergency workers and three police officers committed suicide, police divorce rates increased 300% and police disciplinary problems rose 45%." O'Shaughnessy Daily News online.

17 Asukai, "Health Effects Following the Sarin Attack," p. 5.

18 Robert J. Ursano, Brian G. McCaughey, Carol S. Fullerton, "Trauma and Disaster," in Robert J. Ursano, Brian G. McCaughey, Carol S. Fullerton, eds., *Individual and Community Responses to Trauma and Disaster: The Structure of Human Chaos*, (England: Cambridge University Press, 1994), p. 6

19 "Coping with Disaster and Trauma," Mental Health Association in New York State, Inc. Fact Sheet, on the web at http://www.mhanys.org/factsheet_trauma.htm.

20 This assertion is supported by the general consensus expressed by participants at a conference sponsored by the Japan Society in Tokyo in 2000.

21 Asukai, "Health Effects Following the Sarin Attack," p. 4.

22 Ibid.

23 Takako Konishi, "Cultural Aspects Of Violence Against Women In Japan," *The Lancet*, Vol. 355, No. 9217, p. 1810. Konishi notes that since the events of 1995, there has been an increased of the impact of violence on victims, especially women. He also notes, however, that "this increased awareness has yet to be incorporated into Japan's health-care system."

24 Futaba Igarashi, "Victim's Rights in Japan" *Japan Echo*, December 2000 (Tokyo).

25 <<http://www.samhsa.gov/centers/cmhs/cmhs.html>>

26 Flynn, "Disaster Mental Health," p 122.

27 Federal Response Plan, ESF #8-10, "Health and Medical Services Annex," April 1999, p. 124.

28 <http://www.fema.gov/r-n-r/dec_guid.htm>

29 Institute of Medicine National Research Council, "Prevention, Assessment, and Treatments of Psychological Effects," in *Chemical and Biological Terrorism: Research and Development to Improve Civilian Medical Response* (Washington, DC: National Academy Press, 1999), p. 171.

30 A. David Mangelsdorff, "Lessons Learned And Forgotten: The Need For Prevention And Mental Health Interventions In Disaster Preparedness," *Journal of Community Psychology*, Vol. 13 (July 1985), pp. 239-257, p. 250.

31 Carol W. Lewis and Morton Tenzer, "The Heroic Response to Terror: The case of Oklahoma City," *Public Personnel Management* (Winter 2000) pp. 617-635.

32 H.E. Marcus, M.D., "Disaster Mental Health Services," *The Internet Journal of Rescue and Disaster Medicine* 2000 Vol. 1, No. 2 at <<http://www.icaap.org/iuicode?86.1.2.2>>.

33 The Oklahoma City operation was the first time that the FEMA funded critical incident stress management services for rescue workers; federal funding through FEMA is for short-term crisis intervention only. Funding for critical incident workshops through the 1996 Anti-Terrorism and Effective Death Penalty Act addressed longer lasting effects. Lewis and Tenzer, "The

Heroic Response to Terror,” p. 6.

34 Maggie Farley and Charles Ornstein, “US Mental Health Suffers a Major Blow,” *New York Times*, September 22, 2001.

35 Don Hartsough, “Legal Issues and Public Policy in the Psychology of Disasters,” in Richard Gist and Bernard Lubin eds., *Psychosocial Aspects of Disaster* (New York: John Wiley & Sons, 1989), pp. 283-308, p. 289. Individuals may experience “feelings of hopelessness brought about by the way in which victims are managed following the disaster.” Ibid., p. 290.

36 The structure of these recommendations is borrowed from Morgan and Camper, who advocate that: “a strong fear management program should focus on a longitudinal approach to fear management, i.e., supporting a multi-stage intervention program that uses all major management modalities to emphasize preparatory and response actions taken pre- and trans-event, not just those taken post-event.” Morgan and Camper, “Fear Management,” p. 1.

37 They can and do create myths about disasters, myths which will persist even among those with contrary disaster experience.” Joseph Scanlon, Suzane Allred, Al Farrell, and Angela Prawzick, “Coping with the Media in Disasters: Some Predictable Problems,” *Public Administration Review*, special issue (1985), pp. 123-133, p. 124.

38 “All of these problems, however, can be managed and controlled because of two key facts: One is the media behave much the same way in disasters as at other times. The other is that media behavior at all times is highly predictable. This means it may be demanding, but planning for media in one disaster can be relatively efficient because it is possible to predict from long experience precisely what the media will do.” Ibid., p. 124.

39 Ibid, pp. 124-125.

40 Ibid, p. 129. “The media should also be told that they should report all the facts possible. The evidence suggests that the public can deal with the facts. There is no need to hold back disturbing information because it is feared it might cause panic. The real danger lies in not informing people of dangers and what they should do about them.”

41 David E. Kaplan and Andrew Marshall, *The Cult at the End of the World: The Incredible Story of Aum* (London: Hutchinson Press, 1996) p. 255

42 Ibid., p. 257

43 Ibid., p. 259

44 Ibid., p. 271

45 “Public reactions to an outbreak of meningitis suggest that infectious disease and infection control specialists who routinely deal with contagion can help prevent panic by using the mass media and personal outreach in neighborhoods and at people’s workplaces to provide credible, accurate information.” Thomas A. Glass and Monica Shoch-Spana, “Bioterrorism and the People: How to Vaccinate a City Against Panic,” *Clinical Infectious Diseases*, No. 34 (January 15, 2002), p. 218.

46 Eve Kupersanin, “FBI Psychiatrist Urges Colleagues to Prepare to Aid Terrorism Victims,” *Psychiatric News*, July 20, 2000, reprinted in *The Beacon*, April 2001, Vol. 3, No. 7, p. 3.

47 See also Scott Sleek, “Learning How To Calm Public Panic In The Event Of A Chemical Attack,” *American Psychological Association Monitor*, Vo. 29, No. 6 (June 1998), at <<http://www.apa.org/monitor/jun98/panic.html>>.

48 Scanlon, et al., “Coping with the Media,” p. 130.

49 Media has potential to be a help or a hindrance. For instance, can cause problems by, “inreas[ing] convergence to the scene both by the curious and by those with genuine concerns. By their own convergence, both in person and by

telephone, they can create pressures on managers for information to the point where media demands interfere with effective response. They can spread rumors and so alter the reality of disaster, at least to those well away from it, that they can bias the nature of the response. They can and do create myths about disasters, myths which will persist even among those with contrary disaster experience." Ibid. p. 124.

50 Kathleen J. Tierney, "The Social and Community Contexts of Disaster" in Richard Gist and Bernard Lubin, eds., *Psychosocial Aspects of Disaster* (New York: John Wiley & Sons, 1989), p. 24. Beyond the immediate convergence of first responders, concerned individuals, and worried well, "in federally declared disasters, shortly after the immediate emergency period concludes (usually within 3 or 4 days after impact), another more formalized type of convergence begins as representatives of federal agencies and other relief organizations come to the community to offer various kinds of disaster assistance." Ibid., p. 27.

51 Roger Kasperson and David Pijawka, "Societal Response to Hazards and Major Hazard Events: Comparing Natural and Technological Hazards," *Public Administration Review*, Vol. 45, special issue (January 1985), p. 17.

52 Interview with Nozomu Asukai, November 1, 2000.

53 Holloway, et al., "The Threat of Biological Weapons," p. 259.

54 Scanlon, et al., "Coping with the Media," p. 129.

55 Peter Haworth, "The Treatment Of Shell Shock: Cognitive Therapy Before Its Time," *Psychiatric Bulletin*, No. 24 (2000), pp. 225-227.

56 Tetsushi Kajimoto, "Aum Three Years Later: Victims Struggle for Redress" *Japan Times*, March 18, 1998.

57 "Victims of Subway Attack Still Suffer" February 2, 1999.

58 Ibid.

59 Kajimoto, "Aum Three Years Later".

60 Institute of Medicine National Research Council, "Prevention, Assessment, and Treatments," p. 168.

61 Garaventa Myers, "Mental Health and Disaster: Preventive Approaches to Intervention," in Richard Gist and Bernard Lubin, eds., *Psychosocial Aspects of Disaster* (New York: John Wiley and Sons, 1989), p. 201.

62 Cleto DiGiovanni, Jr., "Domestic Terrorism With Chemical Or Biological Agents: Psychiatric Aspects," *The American Journal of Psychiatry*, Vol. 156, No. 10 (October 1999), pp. 1500-1505.

63 Glass and Shoch-Spana, 'Bioterrorism and the People,' p. 219.

64 Stress, according to Hans Selye, is the "non-specific response of the body to any demand made upon it." EE Flynn "Victims of Terrorism" in Paul Wilkenson and Alasdair Stewart, eds., *Contemporary Research on Terrorism* (Aberdeen: Aberdeen University Press, 1987), pp. 337-356, p. 348.

65 Ibid., p. 349.

66 Ibid.

67 Holloway, et al., "The Threat of Biological Weapons," p. 255.

68 The "underlying theme of all the interventions is an *educative one*, with the main intervention objective being the provision of *accurate information* to residents concerning a near-by disaster. Theoretically, such information would prevent the formation of stress-arousing rumors and would allay the unrealistic fears of residents." Glenn E. Shippee, Richard Bradford, and W. Larry

Gregory, "Community Perceptions of Natural Disasters and Post-Disaster Mental Health Services," *Journal of Community Psychology*, Vol. 10, No. 1, pp. 23-28, p. 27.

69 Mangelsdorff, "Lessons Learned and Forgotten," p. 250. See also Ollendic and Hoffman, who wrote, "It appears that the community of mental health centers should be active and involved. An implication from this study [of the Rochester flood of 1978] is that the involvement should be one of reaching out to the affected victims, since the emotional reactions clearly deserve professional attention." (166).

70 "The capacity to identify in the acute trauma phase those individuals who at risk of developing chronic PTSD provides an opportunity to prevent the development of chronic PTSD through early intervention." Bryant et al., p. 1780.

71 Holloway, et al., "The Threat of Biological Weapons," p. 259.

72 There is little evidence to indicate whether or not debriefings are effective. Institute of Medicine National Research Council, "Prevention, Assessment, and Treatment," p. 168.

73 John Weaver, Robert Dingman, Jane Morgan, Barry Hong, Carol North, "The American Red Cross disaster mental health services: Development of a cooperative, single function, multidisciplinary service model," *The Journal of Behavioral Health Services and Research*, August 2000, Vol. 27, No.3 pp. 314-320, p. 318.

74 Flynn, "Victims of Terrorism," p. 112.

75 "There are several important policy implications of this investigation for the design of post-disaster mental health services for communities that are afflicted by a natural or man-made disaster. The results suggest that post-disaster mental health services should be extended to include those residential areas not directly affected by the disaster. That is, current disaster planning for mental health and crisis intervention services usually includes only those areas that are directly affected...yet, present research indicates that mental health facilities in communities adjacent to areas in which a disaster occurs should have a contingency plan ready for implementation." Shippee, et al., "Community Perceptions," p. 27.

76 Tierney, "The Social and Community Contexts of Disaster," p. 23.

77 For example, "when the Mississippi River and its tributaries flooded St. Louis, Mo. in the spring and summer of 1993, 250 mental health professionals stood ready to help the thousands whose lives the floods would affect. It turned out, however, that most of the flood victims sought instead the support of community leaders they knew and trusted." See Carol S. North and Barry A. Hong, "Project CREST: A New Model for Mental Health Intervention After Community Disaster," *American Journal of Public Health*, Vol. 90, No. 7 (July 2000) pp. 1057-1058, p. 1057.

78 Following the September 11 attacks, the NYPD ordered that all 55,000 employees attend mental health counseling, "to relieve the stress and strain imposed by the attack on the World Trade Center and its aftermath." The program was paid for by a private non-profit foundation (The Police Foundation, which has raised \$10 million for the project) and carried out at Columbia. The program was mandated in part because police officers were not seeking voluntary treatment, which is also available. According to a spokesperson, "We wanted to destigmatize it so that no one thinks that they are being singled out because they are having a problem, but rather to universalize it so that it is clear that it's a problem affecting everyone." Lezin Jones. The Fire Department has not instituted mandatory counseling, but has added \$3 million to its counseling unit and counselors have been visiting fire houses. Richard Lezin Jones, "New York Police Officers Face Counseling on Sept. 11 Events," *The New York Times*, November 30, 2001.

79 Morgan and Camper, "Fear Management," p. 1.

80 Holloway, et al. "The Threat of Biological Weapons," p. 261.

Executive Session Members

Professor Graham T. Allison

Professor of Government and Director
Belfer Center for Science and International Affairs
Kennedy School of Government

Professor Alan Altshuler

Professor of Urban Policy and Planning and Director
Taubman Center for State and Local Government
Kennedy School of Government

Mr. Thomas Antush

Senior Program Analyst
Transportation Security Administration
U.S. Department of Transportation

Dr. Joseph Barbera

Clinical Associate Professor of Emergency Medicine
George Washington University

Mr. Bruce Baughman

Director, Office of National Preparedness
Federal Emergency Management Agency

Mr. Peter Beering

Indianapolis Terrorism Preparedness Coordinator

Lieutenant General (Ret.) Thomas N. Burnette, Jr.

Former Deputy Commander in Chief, U.S. Joint Forces
Command

Professor Ashton B. Carter

Professor of Science and International Affairs,
Kennedy School of Government

Mr. Hank Christen

Emergency Response Consultant,
Unconventional Concepts, Inc., FL

Chief Rebecca Denlinger

Chief, Cobb County Fire Department, GA

Major General (Ret.) John Fenimore

Former Adjutant General, New York National Guard

Ms. Ellen Gordon

Administrator, Iowa Emergency Management Division

Dr. Margaret Hamburg

Vice President for Biological Programs
Nuclear Threat Initiative, Washington, DC

Mayor Clarence Harmon

Former Mayor, City of St. Louis, MO

Mr. Francis X. Hartmann

Executive Director, Program in Criminal Justice Policy/
Management and Malcolm Wiener Center for Social Policy,
Kennedy School of Government

Professor Philip Heymann

Professor of Law, Harvard Law School

Dr. Arnold M. Howitt

Executive Director, Taubman Center for State and
Local Government, Kennedy School of Government

Ms. Juliette Kayyem

Executive Director, Executive Session on Domestic
Preparedness, Kennedy School of Government

Dr. Robert Knouss

Director, Office of Emergency Preparedness
U.S. Department of Health and Human Services

Peter LaPorte

Director, District of Columbia Emergency Management
Agency

Major General Bruce M. Lawlor

Senior Director for Protection and Prevention
Office of Homeland Security

Dr. Marcelle Layton

Assistant Commissioner, Bureau of Communicable
Disease, New York City Department of Health

Dr. Scott Lillibridge

Professor and Director, Center for Biosecurity
University of Texas Health Science Center
School of Public Health

Mr. John Magaw

Undersecretary of Transportation for Security
U.S. Department of Transportation

Chief Paul Maniscalco

Deputy Chief, New York City Emergency Medical
Services Command

Mr. Gary McConnell

Director, Georgia Emergency Management Agency

Mr. Stanley McKinney

Vice President for Business Continuity Management
Bank of America

Professor Matthew S. Meselson

Professor of the Natural Sciences, Harvard University

Dr. Steven Miller

Director, International Security Program,
Kennedy School of Government

Mr. Andrew Mitchell

Deputy Director, Office for Domestic Preparedness,
Office of Justice Programs, U.S. Department of Justice

Major General Paul D. Monroe, Jr.

Adjutant General, California National Guard

Major General Phillip E. Oates

Adjutant General, Alaska National Guard

Chief Charles Ramsey

Chief, Metropolitan Police Department, Washington, DC

Lieutenant General (Ret.) James Terry Scott

Partner, Watson and Associates, TX

Ms. Leslee Stein-Spencer

Chief, Division of Emergency Medical Services and
Highway Safety, Illinois Department of Public Health

Chief Darrel Stephens

Chief, Charlotte-Mecklenburg Police Department, NC

Dr. Jessica Stern

Lecturer in Public Policy, Kennedy School of Government

Chief Steve Storment

Assistant Chief, Phoenix Fire Department, AZ

Sheriff Patrick J. Sullivan, Jr.

Sheriff, Arapahoe County, CO

Mr. Ralph Timperi

Assistant Commissioner, Massachusetts Department of
Public Health and Director, Massachusetts Department of
Public Health State Laboratory

Chief Alan D. Vickery

Deputy Chief, Special Operations,
Seattle Fire Department, WA

Dr. Frances Winslow

Director, Office of Emergency Services, San Jose, CA

Executive Session Staff

Arnold M. Howitt
Director

Juliette Kayyem
Executive Director

Rebecca Storo
Assistant Director

Robyn Pangj
Research Associate

Patricia Chang
Research Assistant

Rebecca Horne
Project Assistant