Behavioral and organizational responses to terrorism: A model based on 9/11

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ABSTRACT

The author’s 1998 white paper (completed for the US Department of Defense as a result of Presidential Decision Directive 39) applied the research literature on behavioral and organizational response to outline what might occur in the aftermath of a terrorist attack. It argued that it presented the best model available and should be applied when developing mitigation, preparedness, and response plans in anticipation of possible domestic nuclear, biological, and chemical terrorism.

The terrorism events of September 11, 2001, have provided a basis for assessing this argument. The current article reviews the earlier argument by using updated disaster research to describe the behavioral and organizational response challenges a community or nation would likely encounter in a terrorist attack with weapons of mass destruction (WMD). Anecdotal evidence from the events of 9/11 is included to assess the efficacy of the literature as a model.

INTRODUCTION

The author’s 1998 white paper summarized the research literature on behavioral and organizational response challenges commonly faced in disasters—and those that may be likely in possible future biological or chemical terrorism incidents. After the white paper was completed, several biological terrorism drills were held in major US metropolitan areas, including New York City (NYC), with the training and drill activities based to a large extent on the white paper’s findings. The terrorist attacks on the United States on September 11, 2001, have unfortunately provided the opportunity to assess the efficacy of this literature-based model in dealing with terrorism.

The purpose of the current article is to assess the efficacy of the model and includes post-9/11 anecdotal evidence. If the US is going to prepare for a WMD terrorist incident, it should at least base its public policy upon what has been found to be the likely behavioral and organizational challenges, rather than upon assumptions and mistaken beliefs. Anecdotal evidence from September 11 reinforces this argument.

BEHAVIORAL RESPONSE TO A WMD TERRORIST ACT

What did the research literature suggest as the likely behavioral response to WMD being deployed against a US population? What would political decision makers, medical personnel, and emergency organization coordinators need to know about behavioral responses that would enhance mitigation and assist in effectively organizing? The sociological findings describing the behavioral responses to other disaster agents were applied to answer these two questions. First, these sociological findings were reviewed. We then applied them to outline the likely behavioral response to a WMD terrorist act. While the literature had previously focused on biological and chemical terrorism, the argument was made that the literature also applies to other forms of WMD, e.g., airplanes used as flying bombs.

More than 35 years of research into the behavioral and organizational response to disaster has resulted in a rather clear understanding of how victims and survivors, organizations, and the media respond during a natural or technological disaster. If we extrapolate from these sociological research findings, the implications of the likely behavioral response to incidents of domestic terrorism come into
focus. Anecdotal information from previous terrorist acts, e.g., the earlier World Trade Center bombing and the Oklahoma City bombing, suggests the validity of such an application.

**INITIAL INDICATIONS OF AN ATTACK**

If a biological or chemical agent is released without prior warning, the first victims will provide the initial indication that an attack is underway. Of course, without prior warning, the first victims to fall ill will not know they had been exposed to a biological or chemical agent. Disease symptoms appear several days after exposure to the agent.\(^5\) Victims will assume they are “coming down with something” such as the flu. Many will simply take steps to treat themselves, others will contact their family physician, and still others will go to the emergency room of a hospital or medical center. Medical personnel are likely to view the symptoms initially as indicators of a common illness as well. Medical practitioners will suddenly suspect something is amiss when they are inundated with telephone calls and emergency room patients.

The media will become aware of the rash of patients overwhelming the healthcare system long before the outbreak of disease is confirmed as the result of a terrorist attack. Normal programming will be interrupted to report on the sudden outbreak of disease. Not only the impacted area, but also the world, will quickly learn of the existence of a severe medical problem. If the terrorists announce that an attack is about to be or has been unleashed, then the initial confusion over whether the symptoms are a result of natural events, a hazardous materials (Hazmat) accident, or a terrorist attack will be eliminated. Hysteria, i.e., false belief, among many that they have contracted such an illness, may overload the healthcare system even more quickly than if the attack had not been announced.

Other behavioral response patterns would be expected to commence early as well; these will be outlined below. On the other hand, this situation would allow medical practitioners and emergency organizations to initiate their response more quickly, thereby effecting greater mitigation.

**IMMEDIATE POST-IMPACT PERIOD**

**Initial behavioral response.** The media will focus initially on reporting hard news related to the dramatic convergence of the ill on healthcare facilities in the impacted metropolitan area. In the absence of more details, as well as during media attempts to get at the story, rumor will be increasingly reported as fact. Media personnel, concerned relatives, and the curious will converge on the area. Many of those already there will converge on the medical centers. Telephone and electronic communications will be set up in the area, overwhelming the communications system. If the biological or chemical agent is still viable, more potential victims run the risk of being exposed. If the disease developed by those previously exposed is communicable, more potential victims will be affected. Political decision makers will be scrambling for answers. Confusion will be a common experience for citizens, medical practitioners, media personnel, political leaders, and emergency organizations alike. Massive death rates can be expected. Political decision makers and emergency personnel will struggle to determine the appropriate organizational response to an event they do not yet fully understand. Is it a massive Hazmat accident of some kind? Is it a terrorist attack? What is the exact causal agent? Their mitigation and response efforts are tied to the answers generated by these questions. Of course, the initial answers may or may not be correct; hence, the initial mitigation and response decisions may or may not be effective ones.

**Evacuation behavior.** If an evacuation is deemed appropriate to mitigate against further exposure, how will those who are apparently healthy respond? Families will not want to leave individually, and they will seek to determine where each family member is located (adding to the already overloaded local communications system) and to arrange a meeting time and place. They will not want to leave until they can leave together. Unfortunately, many (perhaps most) healthy citizens will not be aware of the evacuation order at first. Some will be asleep, and others will simply not be accessing media outlets when the order is given. In fact, many will not even
know the emergency exists. Many will refuse to evacuate, fearing that they may actually become exposed to the agent by doing so. Many will refuse to leave for fear their property may be looted. They will need to be convinced that their property will be safe or at least be convinced that their lives are more important than any property. For all these reasons, a large percentage of the population will not evacuate when told to do so. The percentage that does evacuate (perhaps one-third to one-half of the affected population) will be larger than when a natural disaster event is pending (which is normally only 10 percent of the affected population), but many will remain in the metropolitan area.

Some of those who do evacuate will follow the instructions provided, e.g., use of designated roads; many, however, will not. There would be, of course, the expected gridlock as traffic converges along the exit routes. Those who decide to evacuate will not leave immediately, but they will tend to straggle out over a period of hours. Those who are able to relocate to homes of relatives or friends will do so. Those without other options will go to a designated evacuation center. While panic will be the outcome most feared and assumed by citizens, media personnel, and officials, there will be far less of it than the stereotyped image suggests. What will be mistakenly characterized as panic will be the hurried, but purposeful, exit by those leaving. Indeed, if the perception among those in the process of evacuating is that their opportunity for survival is diminishing rapidly, a panic response may then ensue. But only under such a circumstance would that response be likely to occur. Decision makers may pay too much attention to the fear of a panic response. In fact, decision makers may indeed make poor response decisions due to their exaggerated fear of panic. They may hesitate to order an evacuation for fear of causing panic. They may question whether they should even try to evacuate in fear of creating panic—not only an unethical and cynical response, but one not justified by previous disaster research findings.\(^5\) Failing to call for an evacuation, if one is justified, would likely result in greater victimization rather than mitigation against further exposure. The greatest challenge actually will be how to convince the healthy population to evacuate and to do so in a timely manner. Repeated efforts will be necessary to increase the percentage of those who do.

Those with critically ill family members will not want to leave. They will want to stay to provide aid and comfort. The challenge of getting these people to evacuate will be even more difficult. The convergence of an increasing number of telephone calls from outside and within the area will strain the communications system, as relatives seek to determine the whereabouts and safety of their loved ones. Emergency responders and healthcare providers will seek to determine that their families are safe. Most will stay on the job but will be distracted until they know their loved ones are safe.

**Quarantine behavior.** If quarantine is determined to be the appropriate mitigation step, several challenges will be presented. First, many of the exposed may work in the city but live in the suburbs. By the time symptoms appear, they may already be outside of the city. Second, some will spontaneously evacuate before decision makers announce the quarantine. Third, some will successfully avoid attempts to keep them within the quarantined area. Most will probably cooperate without incident. Most will accept their fate with resignation, but there will be those who will feel and openly express resentment at such treatment.

Many will expect deviant behavior to emerge, e.g., looting or price gouging, even though such fears are not justified. Many will also fear that victims and their loved ones will become emotionally incapacitated and unable to cope. This behavior, however, is also unlikely to occur. During the first days of the crisis, citizens will be very altruistic. They will help one another. They will rise to the occasion emotionally as well. As the crisis continues over time, it will become increasingly difficult for victims, survivors, and caregivers to meet all the challenges they face. If it becomes difficult to meet basic human needs during the crisis, citizens will take whatever action they deem appropriate to address those needs. For example, those in need of food and medical supplies may decide to take what they need from available sources. This will not be an incident of looting, but rather the operation of
the collective will to meet basic needs by procuring necessities from available resources. Individuals will generally not go hungry while perishable food lies rotting in the grocery store. Emergent norms will develop to guide behavior that helps the healthy and critically ill survive in their new circumstance.

If residents are able to obtain food through the normal distribution process, the food supplies in these stores will rapidly be depleted, primarily due to a mass convergence of shoppers who fear additional supplies will not be available for some time to come (especially milk, bread, and other staples). Telephone calls into, out of, and within the area will continue to exceed the capacity of the communications system. Similarly, gasoline stations are likely to experience a convergence of customers. And the healthcare system will continue to be overwhelmed.

Media response. An audience rivaling any preceding it will turn to the print and broadcast media for information. The various talking heads will present conflicting views of what is occurring and what is to be done. It is imperative that political decision makers and emergency organizations seek to distribute information through a highly trained spokesperson. Information and instructions should be given repeatedly and clearly, specifying precisely what is being suggested to the audience. There will be a tendency to distrust political decision makers as rumor is reported as fact.

Local broadcasters will tend to relay information on evacuation or quarantine plans, medical distribution centers, and other helpful news for the victims and survivors. National broadcasters will tend to focus on broader issues of what happened, who did it, how people are responding (or are believed to be responding, as the network reporting will be heavily laden with myth). Local and national news organizations will look to decision makers as the primary source of information. Failure to provide a steady diet of information will result in a feeding frenzy turning on decision makers, consuming them in the process.

Print and broadcast news personnel will converge from throughout the country and the world. The local Emergency Operations Center (EOC), the site command post, and the perimeter of the affected area will be the locations most targeted by the media. Again, the role of the press demands a steady diet of information. Information and answers must be provided; the alternative will be to find them turned loose to find their own story, which will undoubtedly not be helpful to the community or to the decision makers trying to cope with the crisis. The press tends to function as a pack, seeking to avoid being scooped rather than seeking a scoop. One need only look to the reports about O.J. Simpson, Princess Diana, and Monica Lewinsky for illustrations.

Altruism and acting to help the victims will gradually give rise to the inevitable blame-fixing. Voices increasingly will ask why more had not been done to prevent the attack. Some will charge that those responsible for mitigation against further exposure to the biological agent and responding with aid were slow to meet their responsibilities. A desire for vengeance will emerge as attention turns to wanting to capture, prosecute, or retaliate against those believed responsible for unleashing the attack. Domestic ethnic populations who share a heritage with the perceived perpetrators will be in danger of citizen (or even official) retaliation akin to that experienced by Japanese-Americans after the bombing of Pearl Harbor.

Decision makers and emergency organizations. A number of challenges face political decision makers and emergency organizations. If the attack was not suspected or announced in advance, they will not know it has occurred until mass symptoms and deaths become apparent. Even then, they will not know if it is a local Hazmat accident, an act of terrorism, or something else. It will take time to determine the location and type of agent that victims were exposed to and how to best respond, i.e., evacuate, quarantine, or do something else. There will not be enough medical supplies and medical personnel to meet the need (as in the Hiroshima and Nagasaki experiences). The community will be unable to tend to its dead in any kind of normal fashion. The crisis will place demands on all organizations, e.g., healthcare facilities, law enforcement agencies, and political decision-making groups, that far exceed their ability to respond effectively. An
incidence of biological terrorism obviously will not be a normal emergency. Federal support, such as military transport and dissemination of needed medical and subsistence supplies, will take longer than the public would imagine for reasons obvious to most planners. A high percentage of the exposed will likely be dead before the occurrence is totally understood and long before additional personnel and supplies can be brought onsite. Expectations will always be unrealistic, and blame-fixing will begin early in the post-impact period. Training and stockpiling of relevant supplies within metropolitan areas is, of course, very important. It is also important to educate the public to the reality of the challenges facing victims and survivors, emergency organizations, and governments. Citizens need to be armed with accurate, factual information to enhance their chance of effectively responding at the individual and family level, thereby enhancing mitigation. Without an honest dialogue with the public, potential victims will have unrealistic expectations of their local, state, and federal officials. More deaths and injuries are likely to occur. Decision makers and emergency personnel need to use their expertise to act in partnership with the less knowledgeable public. We must put aside the fear of scaring the public. Such a fear insults those who should be served, increases the likelihood of harm to potential victims, and casts such officials in the role of the all-knowing, yet ineffective, Big Brother.

**Slow citizen response.** During an emergency event, citizens respond slowly to information and instructions. Instructions for obtaining medical assistance and subsistence supplies, as well as instructions for an evacuation or quarantine, are more likely to be responded to if they are frequently repeated, clearly articulated, and specific. All too often, emergency personnel assume that because the information was disseminated, the intended recipients have received it, understood it, and responded to it in the desired fashion. Nothing could be further from the truth. Many will not receive the information the first time, or even the second or third time that it is provided. Many of those who do receive it will not clearly understand what is being communicated and will fail to respond. Many will interact with others to determine what is to be done. Rumor and fact will blur in the process. Even when the information is clearly understood, the recipient still may not follow the instructions for any number of reasons (e.g., disbelief, distrust, or refusal to leave home at least while awaiting other family members). As with natural disaster agents, the best time to begin educating citizens on how to respond to a biological or chemical terrorist attack is during normal times. Individuals will be in a much better position to respond effectively if they have had prior training. Decision makers may hesitate to engage the public in such a dialogue prior to an actual terrorist event for fear of upsetting the public or contributing to a panic. Anecdotal evidence consistently supports the argument that the public can be trusted far more than decision makers think it can. Such decision makers should perhaps be reminded that they are, after all, public servants; it is their role to provide such information to the public so citizens can then be armed to be better able to act on their own behalf.

**CONCLUSIONS**

What can we conclude about the likely behavioral and organizational response to biological or chemical terrorism? Victims and survivors are likely to act in ways that many in the media and emergency organizations will not expect. Individual citizens are likely to be altruistic, initiate search and rescue activities, offer whatever medical assistance they can, and generally behave very rationally. They will not behave in ways many of the untrained believe would be typical. For example, almost no one will panic, almost no one will steal from another (though they may appropriate property collectively defined as necessary for response to the event), and they will not become emotionally incapable of responding. Many will hesitate or even fail to evacuate even after being told to do so. Some will resist attempts to enforce quarantine.

The media will be both a help and a hindrance. Local media will assist in disseminating needed information to the public to facilitate an effective response to the attack. National media will be less helpful in that their self-perceived role will be to describe the
unfolding story, which will often be largely fiction. Their reporting will be governed by their belief in the disaster mythology. They will actually increase concern for panic, looting, price gouging, and incapacitating emotional shock. Rather than covering the story in a way that downplays concern about these behavioral myths, they will facilitate their spread. Both the local and national media will converge on the area. Curious nonresidents will also converge on the area, creating traffic control problems over the lifecycle of the event.

Officials will also fear panic, believing in the likelihood of the largely mythical deviant behavior. As a result, many will hesitate to announce that an attack is underway. The greater concern should be with finding ways to accurately, clearly, and convincingly inform the public about what is happening, what they need to do, how to do it, and when. For example, when, how, and where should people evacuate? When and where should they seek medical assistance? Chaos will be the most typical initial organizational response. The lack of good information will drive the confusion. Medical and emergency organizations will find themselves outpaced by the scope of the event. The best hope for achieving an effective mitigation response lies in doing the following:

- educate the public about the scope of the likely medical outcome and response problems;
- educate the public about how to prepare themselves for such an event;
- inoculate citizens when appropriate and possible to do so;
- stockpile equipment and medical supplies in a manner that will lead to their effective use during the pre-impact and immediate post-impact time periods; and
- train decision makers and emergency personnel in the actual rather than mythical behavioral and organizational response problems.

After doing our best, we can still expect to experience a large number of casualties; the likelihood of this outcome does not preclude the necessity for planning and acting in a manner likely to reduce that number.

Appropriate national political and economic policies remain key ingredients in preventing a terrorist attack. The US will reduce its chances of being attacked by reducing terrorist motivation to launch a biological or chemical attack on an American city—or on several American cities simultaneously. Public policy aimed at reducing the recruiting of “undeterrables”12 is the key to long-term domestic security.

Does analysis of the events of 9/11 indicate there was panic or rational behavior? Altruism or selfish behavior? What was the media response? What about local officials? Did emergency personnel stay on the job? What was the nature of the behavioral response to the terrorism events on that day in NYC? Anecdotal evidence suggests that the disaster research literature indeed predicted the response to this WMD terrorism event. The following is offered in support of this argument.

Panic. Even though the word was often used by media personnel and lay people to describe the escape of many running from the twin towers as they collapsed, a careful examination of the survivors’ behavior indicates they were rationally moving away from the obvious danger. Did they experience grave fear? Undoubtedly. Were they in a state of panic? No. Furthermore, conversations (while not a random sample) with survivors who descended the stairways in the twin towers prior to their collapse indicate unanimously that these individuals behaved in a very orderly fashion. They helped one another down the steps, and they proceeded according to previous evacuation plans. They were calm and followed directions. Did they feel fear? Undoubtedly. Did they panic? No.

Altruism. The Fire Department of New York (FDNY) lost many brave members when the towers collapsed. Responding to the call, these firefighters ascended the stairwells in the towers and died doing their job. Others kept coming. Fire departments from around the country sent personnel too numerous to even be used at “ground zero,” demonstrating convergence behavior of an altruistic nature. The FDNY
members did not want to leave the impact area and resisted relief shifts. They stayed on the job—often to their own detriment.

Individual citizens throughout the United States donated financial resources to help the victims. Citizens from varied backgrounds e.g., medical personnel, counselors, and therapists, converged to offer their help, seeking to help in any way they could. Altruism was extremely evident in the immediate post-impact period and the recovery period.

**Media.** The major network news reporters based in NYC, e.g., personnel on the *Today* show and the evening news personnel, functioned very much as local media generally do—suspending normal programming and focusing on providing information on local people and organizations for local citizens and organizations. Accuracy was greater than the norm as long as this focus continued in place. Later, the media generally tended to focus on seeking to report on behavioral issues that they were anticipating (disaster mythology), e.g., asking about panic, looting.

**Local decision makers.** Local decision makers, i.e., the mayor’s office, sought to establish a command center (they had to recreate their EOC, as the original one was in the collapsed Trade Center), designate a spokesperson to interact with the media, and update the community and nation at regular intervals. Perhaps benefiting from prior training sessions and drills, the mayor’s office in particular mastered the ideal model of providing regular briefings to the press (feeding them), during which they delineated what they currently knew and did not know. It would appear that the mayor became a role model for future decision makers in his information gathering and disseminating of information.

**Estimates of damage, injury, and death.** The usual pattern of overestimating the death toll was observed in the NYC twin tower collapse. Final tabulations of death and injuries were, fortunately, half of the original estimates.

**ADDITIONAL CONCLUSIONS**

The current anecdotal information attests to the efficacy of the disaster research literature in predicting behavioral response to terrorist-created disasters. Not a single divergent element was observed. While we will have to await the data analysis of ongoing research by field teams working in NYC, preliminary findings from these teams indicate no real surprises. The anecdotal information will reflect the whole. Those seeking to enhance domestic preparedness would serve their populations well by focusing on these findings.

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**NOTE**

Portions of this article were included in “Terrorism and 11 September 2001: Does the ‘behavioral response to disaster’ model fit?” Disaster Prevention and Management. 2002; 11(2): 123-127. Reprinted with permission.

**REFERENCES**