

*Spontaneous volunteer response to disasters:
The benefits and consequences of good intentions*

Lauren S. Fernandez, MS
Joseph A. Barbera, MD
Johan R. van Dorp, DSc

ABSTRACT

During disasters, large numbers of citizens and nonemergency organizations converge at the site wanting to offer assistance. Most are willing to provide their services free of charge. This response brings the potential benefit of valuable assistance to the disaster site, but it is also subject to the risks associated with unmanaged personnel. Historical evidence highlights these issues and emphasizes the importance of an effective and efficient volunteer management system.

Key words: disaster, spontaneous volunteer, volunteer management

INTRODUCTION

During disasters, large numbers of people and groups unaffiliated with traditional emergency response organizations converge at the scene to offer assistance. This mass convergence phenomenon, documented for over 85 years (since the Halifax explosion),¹ was again evident during the responses to recent disasters. The tsunami in Indonesia, Hurricane Katrina in the United States, and the earthquake in Pakistan involved many heroic acts on the parts of volunteers. Spontaneous volunteers can be a significant resource, but they are often ineffectively used and can actually hinder emergency activities by creating health, safety, and security problems and distracting responders from their duties. Incident managers must be prepared to capitalize on the available volunteer resources while still ensuring safety and the responders' ability to effectively perform tasks within the established incident management system. Volunteers must be prepared to contribute skills and

resources to the response and recovery for the disaster without hindering the emergency activities. Volunteer efforts can be formally managed as an incident management system is established, providing an opportunity for optimal effectiveness and safety equivalent to that obtained with paid responders.

This paper describes findings from a systematic literature review on spontaneous volunteer involvement in disasters. From the perspective of an incident manager, it addresses volunteer behavior, the benefits and risks of volunteer involvement, and an analysis of the challenges inherent in managing volunteers. Existing volunteer management systems and plans at all levels of government and the private sector are described, and concluding recommendations for developing a comprehensive model of disaster volunteer management are presented.

SPONTANEOUS VOLUNTEER BEHAVIOR

The definition of a volunteer typically involves two concepts: provision of a service of one's own free will and/or provision of a service without promise, expectation, or receipt of compensation for the service. It is useful to categorize types of volunteers by how and whether they were requested to respond. **Volunteers on an assigned resource** have a specific assignment within the incident command system (ICS) (e.g., a volunteer member of a rescue squad). **Recruited volunteers** are those with skills applicable to the unique needs of the disaster response and are personally requested by the ICS for assistance in the effort (e.g., an owner/operator of rare equipment needed for search and rescue). **Spontaneous volunteers**

are those who are not with an assigned resource and have not been specifically recruited (e.g., an owner of a local restaurant who wishes to help by feeding rescuers). Spontaneous volunteers agree to provide service without additional or specific compensation for the voluntary commitment. This paper focuses on the spontaneous volunteer response, as this type of volunteer is least anticipated by emergency planners and can pose challenges due to the lack of assignment and training.

Volunteer response to major disasters can be significant^{2,3}; however, studies have measured volunteer participation in disasters differently. Many studies classify volunteers as taking "some kind" of volunteer action, which can vary from search and rescue to aiding a neighbor. After the 1985 Mexico City earthquake, approximately 10 percent of the population (over 2 million people) may have assisted in the response.⁴ In 1989, 60 percent of the population of San Francisco and 70 percent of the population in Santa Cruz, California, responded to the Loma Prieta earthquake.⁵ Following September 11, 94 percent of people surveyed in the United States took a behavioral step in response⁶; 15,000 unsolicited volunteers quickly arrived at Ground Zero in New York,⁷ and thousands more followed.⁸

Who volunteers?

A number of studies have tried to identify the sociodemographic differences between the volunteer and the nonvolunteer; however, research has produced conflicting results.⁹ There is no consistent evidence that variables such as gender, ethnicity, wealth, or community involvement can be used to predict disaster volunteerism.¹⁰ There are two possible exceptions to this finding: age and personal experience. The elderly were less likely to provide assistance to anyone beyond themselves and immediate family, perhaps due to physical limitations.^{2,5,11} Conversely, people who were personally affected by the disaster (e.g., damage to their homes) were more likely to help others.^{5,11} One study indicated that people who experienced damage in a previous disaster were more likely to help.¹¹ A study of a massive 1972 flood in Wilkes-Barre, Pennsylvania, found that there

were "volunteer families," in that 4.5 percent of volunteering households accounted for 20 percent of the volunteers.¹²

Why they volunteer

Because many people who converge upon the disaster site are there to help, it is useful to first consider the factors that induce or moderate this urge for personal convergence. Both dissemination of information and the lack of specific information appear to affect convergence. In other words, broad and constant media attention can apparently drive people to take action.^{13,14} If appeals to the general public lack specific details regarding what is needed, a large number of people will converge at the disaster site.¹⁵

People who respond wishing to help often do so because of personal identification with the victims.¹⁶ Some speculated that many personal connections were felt with the victims of the World Trade Center because of strong emotions associated with the event¹³ and the numerous social groups affected at local, national, and international levels.¹⁴ Proximity to the affected area can contribute to the likelihood of an individual's responding.¹⁶

Some sociologists believe that collective behavior is a result of a sense of uncertainty combined with a need to act.² Crisis situations are ideal settings for collective behavior because they can call for a consensus of opinion about what needs to be done.⁵ In the immediate aftermath of a disaster, there can be a "vacuum of authority" as emergency responders are organizing the incident management even while they themselves are impacted by the event.¹⁷ Disaster volunteers perceive needs and step up to provide immediate action when they see perceived poor coordination, lapses in authority, and/or that response organizations are focused upon confronting only the largest demands in an incident.¹⁸

Dynes¹² found that many people take on a greater citizenship role in the wake of a disaster, seeking to do "anything to help the community." Starting shortly after the September 11 World Trade Center collapse and extending to the recovery period, altruism was evident.¹⁹ As a World Trade Center volunteer stated, "I don't need to be asked to come. There is work for

everyone here.”²⁰ Another September 11 volunteer proclaimed, “I’ll do anything they need. I just have to help.”²¹ This behavior was glorified in the press with statements such as this one from the *Washington Times*: “[T]he hero that emerged from Tuesday’s terrorism that shook the United States is humanity.”²¹

It should be recognized that although altruism is a strong motivator, disaster volunteers may have other motivations, and they often volunteer for more than one reason.²² Fritz and Matthewson¹⁶ categorized five types of people who converge on a disaster scene: returnees, the anxious, helpers, the curious, and exploiters. Kendra and Wachtendorf¹⁴ suggested an additional category made up of supporters or fans who cheer on emergency workers. Volunteering can be a way to satisfy curiosity or may be used as a vehicle of power.²³ There are also limits to altruism on the part of nonvictims, especially when a disaster is remote, involves people of other racial and/or ethnic backgrounds, or involves victims who are blamed for their condition.²⁴

In addition to helping others, some proponents believe that participation in volunteer service is helpful to the victims themselves. It has been suggested that it can reduce stress,²⁵ provide an outlet for rage,²⁶ facilitate the healing process,²⁷ and empower victims.^{26,28} Victim participation in disaster assistance is encouraged by the International Federation of Red Cross and Red Crescent Societies because they feel it enhances the effectiveness of recovery for all involved.²⁹

How they volunteer

Volunteer assistance is often important because it can be readily available. People living or working close to damaged areas can provide immediate assistance. Volunteers on an assigned resource integrate with the response because their participation is expected. Likewise, incident managers have recognized the need for recruited volunteers, and the manner in which they will be integrated is readily apparent. Spontaneous volunteers can join organizations that are already a part of the disaster response (i.e., become a volunteer on an assigned resource). Spontaneous volunteers will also self-organize to address perceived needs, and this method is termed

“emergence.” Drabek and McEntire³⁰ state that emergence “includes the appearance of inter-organizational networks after disaster which attempt to fulfill important societal functions made evident by an extreme event.” These groups are self-initiated and have common goals and values.³¹

Emergent groups can solve problems that are not adequately addressed by formal response activities.³² Stallings and Quarantelli¹⁸ determined that there are three major activities of emergent groups during response: damage assessment, operations, and coordination. After Hurricane Andrew, the most common types of emergent group involved themselves in operational activities related to civil defense/law enforcement, religious units, and medical care.³² The following are some examples of emergent groups:

- After the World Trade Center collapse, a group of telecommunications employees and companies joined together to create the Wireless Emergency Response Team. This team created a system and process to identify the location of missing persons’ mobile phones.³³
- During the response to the Mexico City earthquake, citizens developed an ad hoc system for transporting commodities.³⁴
- During the recovery from a tornado in central Florida, volunteer agencies combined to create a common disaster relief center. A local bus route was created to transport victims from the tornado site to the center.³⁵

This ability to improvise can be valuable since not all disaster contingencies can be anticipated, and emergent groups have the ability to apply new strategies, tools, and technologies.⁶

Quarantelli³⁶ has identified several factors that are required for emergence to take place. These include a supportive social climate; relevant social relationships before a crisis; and the necessary resources of people, materials, and knowledge.

Emergent phenomena are more likely to occur when formal response organizations do not meet the disaster victims' needs.^{30,35}

A significant downside to the emergence phenomenon is that it can be poorly coordinated, and ad hoc efforts may not lead to concerted action.¹⁸ Simply anticipating the phenomenon can assist emergency managers. Quarantelli³⁶ advocates that prior planning can prevent or reduce dysfunctional or unnecessary emergence. Stallings and Quarantelli¹⁸ have suggested a policy of "trying to link emergent citizen groups into the network of emergency management organizations."

Will volunteers respond differently depending on the nature of the disaster?

The majority of the available literature describes volunteer responses to natural disasters that involved a sudden impact. More difficult questions to answer are whether volunteers respond differently to technical (human-induced) disasters and how volunteers will respond if there is a concern for their health and safety. The persistence of volunteerism in the United States through the 1947 smallpox response, war zone efforts, and other major health emergencies suggests that volunteers will offer their assistance during a biological event.⁸ However, biological disasters are a special concern because there could be anxiety about personal health risks. Noji³⁷ suggests that this may be alleviated with proper education and preventative measures. Clizbe⁸ states that special efforts are needed to recruit, select, train, provide for the safety and protection of, and continuously engage volunteers for such an event. He has found that "the reliability of volunteers usually correlates with the degree to which managers are able to meet the needs and interests of individual volunteers."

Kasperson and Pijawka²⁵ assert that technological hazards (also known as man-made or human-caused hazards) pose different and often more challenging management issues. Technological hazards tend to elicit a different pattern of public response because there is a perception that a specific party is to blame. The therapeutic altruism that is common in many natural disasters may be less likely in this case

because rebuilding may not occur (residents may wish or need to move), there is a conflict between victims and nonvictims, and/or there has been a delayed response by government authorities. There are, however, historical incidents in which volunteers responded to technological disasters even when their health and safety could have been at risk. During the Tokyo sarin attack, bystanders entered the subways to assist victims.² After the collapse of the World Trade Center, it was speculated that additional terrorist activity might occur, yet people flocked to New York City.

DISASTER VOLUNTEER BENEFITS AND RISKS

Benefits

The affected community, emergency responders, and volunteers themselves benefit from disaster volunteerism. Volunteers are a significant source of timely manpower, and their actions can save lives. Noji³⁷ found that the majority of victims pulled from the rubble of collapsed buildings in various disasters were rescued by bystanders.

In Southern Italy in 1980, 90 percent of the survivors of an earthquake were extricated by untrained, uninjured survivors who used their bare hands and simple tools such as shovels and axes. Following the 1976 Tangshan earthquake, about 200,000 to 300,000 entrapped people crawled out of the debris on their own and went on to rescue others. They became the backbone of the rescue teams, and it was to their credit that more than 80 percent of those buried under the debris were rescued. Thus, life-saving efforts in a stricken community rely heavily on the capabilities of relatively uninjured survivors, including untrained volunteers, as well as those of local firefighters and other relevant professionals.

After the 1985 Mexico City earthquake, the majority of the 500 survivors pulled from the rubble were rescued by spontaneous volunteers.³⁸ In the 1976 Tangshan earthquake, 58 percent of trapped

Table 1. Risks associated with spontaneous disaster volunteer response

Source	Risk
Failure to effectively utilize volunteers	<ul style="list-style-type: none">• Morbidity/mortality of disaster victims• Damage to property• Reduced ability to cope for volunteers• Poor public perception of emergency responders
Actions of untrained, uncoordinated volunteers	<ul style="list-style-type: none">• Disruption of organized response (decreased response effectiveness, decreased/limited resources available to victims)• Morbidity/mortality of volunteers, disaster victims, and emergency responders

victims were rescued by residents and troops who lived in the local community.³⁹

Volunteer service can also be used to augment emergency staff. Using volunteers with basic skills to address common tasks allows responders to focus upon specialized work.¹⁷ For example, volunteers providing food services can free firefighters to perform rescue work. At the same time, volunteers can bring skills that do not exist in sufficient quantities or provide significant economic savings. In a federally declared disaster, the value of volunteer work can be credited toward the cost-share of the affected state.⁴⁰ Florida emergency management, which often uses volunteers for hurricane clean-up, stated that the economic advantages alone are substantial enough to warrant using volunteers as an integral part of emergency plans.⁴¹ The International Federation of Red Cross and Red Crescent Societies cited research that suggests volunteer investments can provide up to eight times the return in community services.⁴²

Risks

There are two major categories of risk associated with disaster volunteer response: the failure to effectively utilize volunteers and the actions of untrained and uncoordinated volunteers. In the first category, the failure of emergency managers to effectively utilize volunteers may create a poor public perception of the disaster response. The costs of lost opportunities, such as the inability to save some victims or property or the inability for victims to benefit psychologically by volunteering, may be publicly evident. In the second

category, the actions of untrained and uncoordinated volunteers can harm disaster victims, emergency responders, and the volunteers themselves.

While volunteers do not require monetary compensation, they do stress other resources. Volunteers may arrive unequipped and require significant logistical support such as food and shelter.^{4,43} Well-meaning individuals can endanger themselves and others in hazardous environments. It is not surprising that response organizations perceive volunteers to be, as Green⁴³ states, "more effort on the part of a strained system than they contribute to the resolution of the problem." Historically documented issues associated with volunteer response to disasters are elaborated upon in the following section.

CHALLENGES ASSOCIATED WITH SPONTANEOUS VOLUNTEER MANAGEMENT

Matching volunteers to needs

Organizations with a formal response role often turn away spontaneous volunteers because they are not prepared for them and have not considered how to integrate this valuable resource. Often it is simply the large number of volunteers that causes problems and overwhelms the capacity of organizations to effectively engage them.^{30,44} Response personnel are diverted from their duties in order to decide how spontaneous volunteers will be used, create and delegate tasks, manage logistics, and supervise actions in an ad hoc manner.^{3,14} Failure to anticipate volunteers can have a disruptive impact on the response, especially when there are more volunteers than there are

defined tasks for them to perform.^{3,45} Tom Weidemeyer,⁴⁶ chief operating officer of United Parcel Service and president of UPS Airlines, aptly stated, "It is a paradox—people's willingness to volunteer versus the system's capacity to use them effectively."

Researchers have found that "successful" volunteers had skills that were compatible to the disaster's needs, and this match was obvious to the emergency managers in positions to use them. These volunteers required minimal supervision by official emergency responders, or the benefits they provided outweighed the effort required by the officials.¹⁴ Matching volunteers to needs is simplified when the disaster requires low-skill rather than specialty tasks. Many natural disasters require a large amount of low-skill tasks. For example, the threat of flooding can require massive sandbagging, and earthquake events create the need for considerable debris removal. Researchers have found that many volunteers after the Loma Prieta earthquake in San Francisco and Santa Cruz largely participated in unskilled tasks.⁵

In the September 11 World Trade Center disaster, however, the disaster site was limited to several very hazardous city blocks. The lack of need for unskilled labor limited the participation of volunteers, as they lacked the training and experience required for more advanced tasks.¹⁴ Traditional emergency response organizations often require special skills to work with relatively complex technologies (e.g., surgery/labs) and/or involve authority structures with no role for spontaneous volunteers (e.g., police and fire departments).⁴⁷ It can be challenging to integrate volunteers with little to no experience and unknown mental and physical abilities into a response cadre of highly trained professionals. For safety and response efficiency, a method to screen volunteers is necessary to determine their abilities and limitations.⁴¹ In addition to not having relevant skill sets, there were other barriers to volunteering such as long lines, uncoordinated leadership, and unclear and disorganized information.¹⁷

Volunteer coordination requires a "common view" of the incident

Spontaneous volunteers who respond to a disaster typically try to address problems that are immediately

visible to them. Self-assignment can lead to problems of misdistribution or misconcentration of aid¹⁵ and duplication of resources. Barriers to interorganizational coordination include differences in terminology, operating structures, and procedures.⁴⁸ To reduce duplication and foster coordination, researchers have found it is important to have a single overarching management system,⁴⁹ defined agency roles,^{46,50,51} proper task management, and division of labor.⁵² The system must be able to assign not only individual volunteers but also groups of volunteers and voluntary organizations. Assistant Arlington County Fire Chief James Schwartz, incident commander for the Pentagon on September 11, noted:

You've got to look beyond the traditional emergency-response community with regard to who needs information and an understanding of the [incident command system] . . . We found we had an awful lot of other organizations participating—people who brought valuable assets, but as the incident was so large, they needed a deeper understanding of where they plugged in.⁵³

Schwartz stated that organizations need a common understanding of the incident management system to be used and the skills and resources of the responding organizations.⁵³ If organizations are unaware of other response groups, coordination can not occur.³⁰

Disaster response needs are dynamic

As incident problems are addressed and new situations evolve, the response needs change, and this affects both donations and volunteer needs. A method is needed to conduct information dissemination related to this. For example, after Hurricane Andrew supplies of bottled water were needed. Many groups collected water throughout the nation, and it was difficult to stop the donations.⁵⁴ Shortly after September 11, people donated over 475,000 units of blood; less than 1 percent was needed for the victims, and 17 percent was discarded within 42 days because it was no

longer usable.⁵⁵ Appeals for volunteer skills also proved difficult to manage. An organizer of Canadian trade volunteers called New York City police to determine if their services could be used. At that time, the city was requesting people with their skills (electricians, steamfitters, ironworkers, plumbers, and carpenters). After a 10-hour bus ride, the volunteers arrived in New York to learn that their skills were no longer needed because local response had satisfied the need. This experience was not unique.⁵⁶

While immediate needs may be quickly met via volunteer service, mobilization of volunteers should be an ongoing process rather than a one-time event.⁴⁷ Volunteers have limits⁴² and may need to be relieved by others wishing to assist. The system should address not only immediate but also anticipated needs for volunteer services. Additionally, voluntary organizations are often in a position to identify and address issues outside the focus of the incident management objectives. For example, they can provide support to individuals who are not eligible for governmental financial assistance, who fear seeking assistance (e.g., undocumented immigrants fearing deportation), or who have needs that are not adequately provided for by incident management.⁵⁷

Volunteer health and safety issues

Too many volunteers at a disaster site can cause confusion, compromise the efficiency of the response,⁵⁸ and create complications for scene safety.⁵⁹ Volunteers at a disaster site are exposed to the same hazards as traditional emergency responders, but they often have less training and equipment to protect them. Health and safety concerns include communicable agents, environmental contamination, hazardous working environments, and psychological effects. At the World Trade Center, personnel on the debris pile required protective eyewear glasses and filter masks.²¹ A follow-up volunteer medical screening program to address short- and long-term health effects among responders was established,⁶⁰ but the inclusiveness and effectiveness of these ad hoc efforts is unclear.

The liability and workman's compensation coverage varies for disaster volunteers. Legal guidance in

these areas is commonly based upon employment law, which can be difficult to apply in emergency circumstances.⁶¹ Some emergency managers require volunteers to sign a liability release. New Jersey worked to pass a bill that would provide coverage to emergency responders who had volunteered at the World Trade Center.⁶² Illinois has passed state laws that cover volunteers as state employees, but the state also encourages additional steps toward developing written procedures and plans for volunteer liability, management of unruly or undesired volunteers, security, and incident credentialing.^{63,64}

Volunteer response will occur whether requested or not

For people who do not have a formal role in the response, the urge to "do something" can be overwhelming.⁴³ Florida's guide on unaffiliated volunteers advises that volunteers will come regardless of the planning efforts of emergency managers.⁴¹ California's guide on post-disaster volunteers is aptly titled *They Will Come*.⁶⁵ As noted in the section on spontaneous volunteer behavior, people will respond if they perceive a need, even if they were not requested. As the magnitude and complexity of a disaster grows, communications break down, and volunteers respond because they are unable to confirm what is happening or whether a need actually exists. Individuals feel justified in their response due to the magnitude of the disaster.⁴³

Convergence at a disaster site can lead to congestion, impacting disaster site access and security and hindering operations.^{1,6} Access to disaster sites can be a particularly sensitive issue. After the Mexico City earthquake, volunteers were barred from certain areas. Conflicts occurred between volunteers who desired to perform rescue activities and responder moves to clear debris.⁴

The lack of a strong volunteer management system does not simply result in underutilized resources; in the absence of formal guidance, people seek to perform services outside the control of the response system. "Freelancing," or acting independently without being a part of or authorized by a response organization, poses safety problems for the freelancer, other emergency responders, and victims. Behavior such as

medical freelancing and food dissemination without proper temperature and sanitation control can have particularly significant adverse impacts.¹⁴ Disaster sites can be inherently hazardous environments, exacerbating the risks of unmanaged volunteer activity. After the Oklahoma City bombing, effective accountability of volunteer responders was achieved only after a bomb scare forced evacuation of the site.⁴³ Unfortunately, a nurse volunteer assisting in a search without proper personal protection had already been struck on the head by falling debris. She died from her injuries.⁶⁶

Individuals filling response roles early in the incident may become unwilling to later recognize and take direction from official response leaders, which can create safety issues. These individuals are referred to as "rogue volunteers."⁶⁷ Freelancing and scene security were problems at the Pentagon and the World Trade Center.⁵³ Various screening and credentialing methods are being developed to address security and liability concerns.⁶⁸

Perception of volunteer response

Kendra and Wachtendorf¹⁴ speculate that public officials feel that the presence of disaster volunteers suggests inadequacy of official response efforts. Law enforcement officials, responsible for the security of the scene, can further view volunteers as simply a crowd control problem. Conversely, Florida's guide on unaffiliated volunteers finds opportunity in managed involvement of volunteers. It states that well-managed volunteers can contribute to a positive public perception of the effort, and volunteers often have time to assist victims more personally, while emergency managers must concentrate on the larger picture.⁴¹

CURRENT SYSTEMS

Emergency managers need a volunteer management system that will capitalize on the available volunteer resources while ensuring safety and promoting the responders' ability to effectively perform tasks within the ICS managing the response. Volunteers need a system that will enable them to contribute skills and resources to the response and recovery from the disaster that affected their lives.

There are generally three levels at which spontaneous volunteer management systems exist today. Many systems are created by individual organizations so that they can directly incorporate volunteers. A small number of states and local areas have created systems to coordinate multiple voluntary agencies and receive and direct volunteers to one of several organizations. At a federal level, the National Response Plan (NRP) recognizes state and local governments as having the primary responsibility for spontaneous volunteer management and identifies supporting roles and functions of the federal government.⁶⁹

Federal volunteer management planning

The federal government provides incident response and recovery assets according to the NRP. The NRP is the framework "to align Federal coordination structures, capabilities, and resources into a unified, all-discipline, and all-hazards approach to domestic incident management."⁶⁹ The NRP includes the Volunteer and Donations Management Support Annex, which describes how federal support will be provided in a disaster. The Annex assigns primary responsibility for spontaneous volunteer and donations management planning to state, local, and tribal governments in coordination with Voluntary Organizations Active in Disaster (VOAD). The actual receipt and management of volunteers during an incident is often delegated to voluntary organizations "with established volunteer and donations management structures." The NRP states that a cooperative effort is needed among government bodies, voluntary agencies, faith-based organizations, the private sector, and the media.⁶⁹

The NRP includes a list of functions and resources in the concept of operations, including a volunteer and donations coordinator, a phone bank, a media-relations effort, a liaison with other emergency support functions, and a facilities management plan. The Federal Emergency Management Agency can provide volunteer and donations management staff to the National Response Coordination Center, Regional Response Coordination Center, and/or Joint Field Office.⁶⁹

State and local volunteer management planning

States often have volunteer management plans in the form of guidances to their jurisdictions. Some have delegated responsibility for spontaneous volunteer management to a specific organization. Example plans include those of California,⁶⁵ Florida,⁴¹ and Ohio.⁷⁰ The National Emergency Management Association's Web site lists 58 state and territorial donations management plans; only 30 of these address volunteer management.⁷¹

Federal agencies, states, and localities are now required to adopt the National Incident Management System (NIMS).^{72,73} NIMS is intended to enable government and private sector organizations to work together throughout the phases of a disaster. It includes concepts, principles, and terminology for incident and resource management so that the involved organizations can interoperate effectively and efficiently.⁷⁴

A central component of NIMS is the ICS, which defines the management structure, components, and operating characteristics. The basic functional structure of an ICS includes command, operations, planning, logistics, and finance/administration. On-scene incident operations must work within this structure.⁷⁴ Response organizations fill assignments within this structure; however, there is no defined mechanism for individual spontaneous volunteers to become part of the response. The role of volunteers is briefly discussed in NIMS as a part of resource management. The Arlington County Public Health Volunteer Management System is an example of a new effort to design a NIMS-consistent model for the processing and management of volunteers.⁷⁵

Voluntary agency volunteer management planning

Voluntary organizations that frequently take part in disaster service often have plans to incorporate spontaneous volunteers who wish to become members of the organization during an incident. The American Red Cross has published plans for this purpose.⁷⁶

Many areas have a VOAD association that is composed of voluntary groups within a geographical area. The member organizations provide skills throughout

disaster phases. Depending on its structure and mission, a VOAD association can range from a loose affiliation of organizations intended to foster understanding among members to a more formal organization with disaster response procedures for its members.⁷⁷ There are currently 60 state VOADs within the United States and its territories.⁷⁸

WEAKNESSES IN CURRENT SYSTEMS

Practical experience and sociological research have led to the development of systems that contain excellent concepts and functions. In particular, the American Red Cross has been a leader in creating, exercising, and implementing spontaneous volunteer management systems. Systems created by voluntary organizations are limited, however, in that they primarily support only the objectives of their own organizations. For example, the Red Cross can integrate volunteers to support mass care operations, but it may not be able to leverage citizens skilled in pet rescue.

Separate, organization-based systems can also pose a hindrance for potential volunteers, as the volunteer must search across multiple organizations to find an entity that can use and manage his or her particular skills. To fill needs, incident managers must likewise interface with multiple voluntary organizations, and they do not have the benefit of easily reaching individuals with unique skills or resources.

In our preliminary observations, we found that many of the published volunteer management systems are limited in scale, scope, and operational detail. Conceptual ambiguity is common in the following critical areas:

- How does the volunteer system integrate with the incident management system?
- How do different voluntary organizations coordinate to avoid redundancy?
- How are unique volunteer resources identified and incorporated by the incident management team?

- How are converging volunteers channeled (physically or through information) in order to avoid unsafe conditions and be processed for formal assignment?
- How are volunteers with recognized response organizations managed differently (and/or similarly) from spontaneous volunteers?
- How are response needs and skills prioritized to move volunteers quickly through the system?
- What kind/amount of staffing is needed to screen, assign, and manage volunteers?
- As volunteer commitment/interest changes, how does the system react?
- What procedures are important in demobilizing and out-processing volunteers?
- How is demobilization and transition to recovery related to volunteers addressed?
- How is postincident volunteer health surveillance performed?
- What postincident volunteer follow-up is indicated?

CONCLUSION

The footprint of volunteer response to disasters is significant. The presence of volunteers brings both the benefits of needed aid and the risks associated with unmanaged, independent personnel. Historical evidence highlights the importance of an effective and efficient volunteer management system.

Systems that exist to date are largely organization-based, and many are not applicable to large-scale disasters. To date, disaster volunteer management is not a robust part of many local, state, and national plans.

A comprehensive model of a disaster volunteer

management system that goes beyond the scope of individual organizations is needed to enable volunteers to participate while ensuring a safe, effective, and efficient response. The systematic review of benefits, risks, and challenges associated with previous spontaneous volunteer response can be used to build such a model.

Lauren S. Fernandez, MS, The George Washington University, Washington, DC, LSFernandez@gmail.com.

Joseph A. Barbera, MD, The George Washington University, Washington, DC.

Johan R. van Dorp, DSc, The George Washington University, Washington, DC.

REFERENCES

1. Scanlon J: *Working Paper 75: Convergence Revisited: A New Perspective on a Little Studied Topic*. Boulder: Natural Hazards Research and Applications Information Center, University of Colorado, 1992.
2. Tierney K: *Collective Behavior in Times of Crisis*. Paper prepared for the National Research Council Roundtable on Social and Behavioral Sciences and Terrorism, Meeting 4, "Risk Communication for Terrorism." Washington, DC, January 30, 2004.
3. Quarantelli EL: *Major Criteria for Judging Disaster Planning and Managing and their Applicability in Developing Societies*. Newark: Disaster Research Center, University of Delaware, 1998.
4. Dynes R, Quarantelli EL, Wenger D: *Individual and Organizational Response to the 1985 Earthquake in Mexico City, Mexico*. Newark: Disaster Research Center, University of Delaware, 1990.
5. O'Brien P, Mileti D: Citizen participation in emergency response following the Loma Prieta earthquake. *Int J Mass Emerg Disasters*. 1992; 10(1): 71-89.
6. Demuth JL: *Countering Terrorism: Lessons Learned from Natural and Technological Disasters*. Washington, DC: National Academy of Sciences, 2002.
7. Kim S: Volunteers present challenge. Disaster News Network Web site, August 27, 2002. Available at www.disasternews.net/news/news.php?articleid=1536. Accessed October 23, 2005.
8. Clizbe JA: Challenges in managing volunteers during bioterrorism response. *Biosecure Bioterror*. 2004; 2(4): 294-300.
9. Wenger D: *Emergent and Volunteer Behavior During Disaster: Research Findings and Planning Implications*. College Station, Texas: Hazard Reduction Recovery Center Publications, 1991.
10. Tierney KJ, Lindell MK, Perry RW: *Facing the Unexpected: Disaster Preparedness and Response in the United States*. Washington, DC: Joseph Henry Press, 2001.
11. Mileti DS, O'Brien PW: *Public Response to the Loma Prieta Earthquake Emergency and Aftershock Warnings: Findings and Lessons*. Fort Collins: Hazards Assessment Laboratory and Department of Sociology, Colorado State University, 1991.
12. Dynes R, Quarantelli EL: Helping behavior in large scale disasters. In Smith DH, Macaulay J (eds.): *Participation in Social and Political Activities, 1st ed.* San Francisco: Jossey-Bass, 1980, pp. 339-354.
13. Wachtendorf T: *A Changing Risk Environment: Lessons*

Learned from the 9/11 World Trade Center Disaster. Presented at the 2002 Sociological Perspectives on Disasters workshop. Available at www.udel.edu/DRC/tricia/AEM%20Presentation%20July%202002%20DRC.pdf. Accessed March 5, 2005.

14. Kendra JM, Wachtendorf T: *Rebel Food . . . Renegade Supplies: Convergence after the World Trade Center Attack*. Preliminary Paper 316. Newark: Disaster Research Center, University of Delaware, 2002.

15. Siegel GB: Human resource development for emergency management. *Public Adm Rev*. 1985; 45(Special Issue: Emergency Management: A Challenge for Public Administration): 107-117.

16. Fritz CE, Matthewson JH: *Convergence Behavior in Disasters*. Disaster Study #9. Washington, DC: National Academy of Sciences, National Research Council, 1957.

17. Lowe S, Fothergill A: A need to help: Emergent volunteer behavior after September 11th. In Natural Hazards Research and Applications Information Center PERI, Institute for Civil Infrastructure Systems (eds.): *Beyond September 11th: An Account of Post-Disaster Research*. Special Publication #39. Boulder: Natural Hazards Research and Applications Information Center, University of Colorado, 2003, pp. 293-314.

18. Stallings RA, Quarantelli EL: Emergent citizen groups and emergency management. *Public Adm Rev*. 1985; 45(Special Issue: Emergency Management: A Challenge for Public Administration): 93-100.

19. Fischer HW: Behavioral and organizational responses to terrorism: A model based on 9/11. *Journal of Emergency Management*. 2003; 1(3): 42-48.

20. Connelly S: Volunteers pitching in to help: Aid arrives from all over. *New York Daily News*. September 13, 2001, p. 42.

21. Miller S: I have to do something: New Yorkers line up to volunteer. *The Washington Times*. September 13, 2001; Part A: A1.

22. Britton N, Moran C, Correy B: Stress coping and emergency disaster volunteers: A discussion of some relevant factors. In Dynes RR, Tierney KJ (eds.): *Disasters, Collective Behavior, and Social Organization*. Newark: University of Delaware Press, 1994.

23. Wolensky RP: Toward a broader conceptualization of volunteerism in disaster. *Nonprofit and Voluntary Sector Quarterly*. 1979; 8(3-4): 33-43.

24. Barton AH: *Communities in Disaster: A Sociological Analysis of Collective Stress Situations*, 1st ed. Garden City, NY: Doubleday, 1969.

25. Kasperson RE, Pijawka KD: Societal response to hazards and major hazard events: Comparing natural and technological hazards. *Public Adm Rev*. 1985; 45(Special Issue: Emergency Management: A Challenge for Public Administration): 7-18.

26. Ellis SJ: *A Volunteerism Perspective on the Days after the 11th of September*. Energize Inc. Web site. Available at www.energizeinc.com/hot/01oct.html. Accessed April 8, 2004.

27. Rosse WL: Volunteers and post-disaster recovery: A call for community self-sufficiency. In Allen RD (ed.): *Handbook of Post Disaster Interventions, Volume 8*. Corte Madera, California: Select Press, 1993, pp. 261-266.

28. Lowe S: *Community Response in a Terrorist Disaster*. Quick Response Research Report #144. Boulder: Natural Hazards Research and Applications Information Center, University of Colorado, 2002.

29. Twigg J, Bhatt M, Eyre A, et al.: *Guidance Notes on Participation and Accountability*. Available at www.benfieldhrc.org/activities/misc_papers/PA%20text.pdf#search=%22Guidance%20Notes%20on%20Participation%20and%20Accountability%22. Accessed March 6, 2005.

30. Drabek T, McEntire D: Emergent phenomena and multiorganizational coordination in disasters: Lessons from the research

literature. *Int J Mass Emerg Disasters*. 2002; 20(2): 197-224.

31. Comfort LK, Cahill AG: Increasing problem-solving capacity between organizations: The role of information in managing the May 31, 1985, tornado disaster in Western Pennsylvania. In Comfort L (ed.): *Managing Disaster: Strategies and Policy Perspectives*. Durham, NC: Duke University Press, 1988.

32. Carley K, Harrald JR: *Organizing for Response: Comparing Practice, Plan and Theory*. Quick Response Grant Report 23-92. Boulder: Natural Hazards Research and Applications Center, University of Colorado, 1993.

33. Wireless Emergency Response Team: *Final Report for the September 11, 2001 New York City World Trade Center Terrorist Attack*. Available at www.bell-labs.com/tech/wireless/wert/Final_Report.pdf. Accessed March 5, 2005.

34. Aguirre BE: *Planning, Warning, Evacuation, and Search and Rescue: A Review of the Social Science Research Literature*. Available at www.udel.edu/DRC/Aguirre/publications/ag47.pdf. Accessed March 5, 2005.

35. Wilson J, Oyola-Yemaiel A: *Emergent Coordinative Groups and Women's Response Roles in the Central Florida Tornado Disaster, February 23, 1998*. Quick Response Report #110. Boulder: Natural Hazards Center Research and Applications Center, University of Colorado, 1998.

36. Quarantelli EL: Emergent behaviors and groups in the crisis time of disasters. In Kwan KM (ed.): *Individuality and Social Control: Essays in Honor of Tamotsu Shibutani*. Greenwich, CT: JAI Press, 1996, pp. 47-68.

37. Noji EK: Earthquakes. In Noji EK (ed.): *The Public Health Consequences of Disasters*. New York: Oxford University Press, 1997, pp. 135-178.

38. Olson R, Olson R: Urban heavy rescue. *Earthquake Spectra*. 1987; 3(4): 645-658.

39. Ye Y, Okada N: *Integrated Relief and Reconstruction Management Following a Natural Disaster*. Paper presented at the Second Annual IIASA-DPRI Meeting, Integrated Disaster Risk Management: Megacity Vulnerability and Resilience. IIASA, July 29-31, 2002.

40. Federal Emergency Management Agency: *Labor Costs—Emergency Work*. Policy 9525.7. Federal Emergency Management Agency Web site. Available at www.fema.gov/government/grant/pa/9525_7.shtm. Accessed September 17, 2005.

41. Volunteer Florida: *Unaffiliated Volunteers in Response and Recovery*. Available at test.volunteerflorida.org/publications/New%20ESF-15/unaffiliatedvolunteersinresponseandrecovery.pdf. Accessed February 27, 2005.

42. International Federation of Red Cross and Red Crescent Societies: Challenging and informative, the *World Disasters Report 2001* focuses on recovery. International Federation of Red Cross and Red Crescent Societies Web site. Available at www.ifrc.org/publicat/wdr2001/index.asp. Accessed October 11, 2004.

43. Green WG: *Freelance Response to the Site—Medical Staff Option of Choice?* Available at www.aameda.org/MemberServices/Exec/Articles/spg03/freelance-%20Green.pdf. Accessed March 5, 2005.

44. National Leadership Forum on Disaster Volunteerism, Vol. 2004: Meeting summary. Washington, DC, 2002.

45. Quarantelli EL: *How Individuals and Groups React During Disasters: Planning and Managing Implications for EMS Delivery*. Preliminary Paper #138. Newark: University of Delaware Disaster Research Center, 1989.

46. Points of Light Foundation: *Preventing a Disaster Within the Disaster: The Effective Use and Management of Unaffiliated*

- Volunteers. Washington, DC: Points of Light Foundation, 2002.
47. Stallings RA: Volunteerism inside complex organizations: Off-duty hospital personnel in a disaster. *Nonprofit and Voluntary Sector Quarterly*. 1989; 18(2): 133-145.
 48. Paton D, Johnston D, Houghton BF: Organisational response to a volcanic eruption. *Disaster Prevention and Management*. 1998; 7(1): 5.
 49. Harrald JR, Barbera J, Renda-Tanali I, et al.: *Observing and Documenting the Inter-Organizational Response to the September 11th Attack on the Pentagon*. NSF Report. Washington, DC: The George Washington University Institute for Crisis, Disaster, and Risk Management, 2002.
 50. National Voluntary Organizations Active in Disaster: *Organizing Protocols for Community Disaster Recovery Mechanisms*. NVOAD Web site. Available at www.nvoad.org/articles/recovery.php. Accessed January 13, 2004.
 51. National Leadership Forum on Disaster Volunteerism: *Exhibit Two: Envisioning the future of disaster volunteerism*. NVOAD Web site. Available at www.nvoad.org/articles/vision_chart.pdf. Accessed March 5, 2005.
 52. Quarantelli EL: *Research Based Criteria for Evaluating Disaster Planning and Managing*. Preliminary Paper 246. Newark: Disaster Research Center, University of Delaware, 1997.
 53. Erick J: Arlington's 9/11 lesson: Get to know your neighbors. *Emergency Medical Services*. 2002; 31(9): 87.
 54. Sahlin M: *Paradigm Shift*. NVOAD Web site. Available at www.nvoad.org/articles/paradigm.php. Accessed January 7, 2004.
 55. Standley J: "Waste" of 11 September blood donations. *BBC News*. February 21, 2002. Available at news.bbc.co.uk/1/hi/world/americas/1833276.stm. Accessed October 18, 2005.
 56. Lueck TJ: A nation challenged: The volunteers; good intentions lead to a bad ending. *The New York Times*. October 18, 2001, B11.
 57. Bolin RC, Stanford L: *The Northridge Earthquake: Vulnerability and Disaster*. London: Routledge, 1998.
 58. Ettenger K: FEMA coordination with NVOAD during the September 11th disaster. *The George Washington University Crisis and Emergency Management Newsletter*. 2002; 2(1). Available at www.seas.gwu.edu/~emse232/emse232febno. Accessed September 11, 2006.
 59. Kendra J, Wachtendorf T: Creativity in emergency response to the World Trade Center disaster. In Natural Hazards Research and Applications Information Center PERI, Institute for Civil Infrastructure Systems (eds.): *Beyond September 11th: An Account of Post-Disaster Research*. Special Publication #39. Boulder: Natural Hazards Research and Applications Information Center, University of Colorado, 2003, pp. 121-146.
 60. National Institute for Occupational Safety & Health: *The World Trade Center Medical Monitoring Program*. Available at www.wtcexams.org/. Accessed March 8, 2005.
 61. Stills ML: Volunteers "a la carte." Charity Channel Web site. Available at charitychannel.com/publish/templates/?a=187&z=0. Accessed March 7, 2005.
 62. Cohen RB: Lawyers contemplate changes to Workers' Compensation Act. *The Legal Intelligencer*. 2001; October 11: 1.
 63. Illinois Terrorism Task Force Committee on Volunteers and Donations: *Community Guidelines for Developing a Spontaneous Volunteer Plan*. Illinois Homeland Security Web site. Available at www.illinois.gov/security/preparedness/volunteer.htm. Accessed February 27, 2005.
 64. Elliot T: ICS Talkin' 'bout an evolution. *Homeland First Response*. 2003; 1(4): 26-29.
 65. California Governor's Office of Emergency Services: *They Will Come: Post-Disaster Volunteers and Local Governments*. California: Governor's Office of Emergency Services, 2001. Available at [www.oes.ca.gov/Operational/OESHome.nsf/PDF/They%20Will%20Come%20Post-Disaster%20Volunteers%20and%20Local%20Government/\\$file/TheyWillCome.pdf](http://www.oes.ca.gov/Operational/OESHome.nsf/PDF/They%20Will%20Come%20Post-Disaster%20Volunteers%20and%20Local%20Government/$file/TheyWillCome.pdf). Accessed February 27, 2005.
 66. US Department of Justice: *Responding to Terrorism Victims: Oklahoma City and Beyond*. Department of Justice Office of Justice Programs Web site. Available at www.ojp.usdoj.gov/ovc/pdf/txt/NCJ183949.pdf. Accessed October 12, 2005.
 67. Unknown author: When volunteers turn rogue: Disaster conference. *National Post*. 2003; June 25: A16.
 68. Federal Emergency Management Agency: *Fact Sheet: National Emergency Responder Credentialing System*. FEMA Web site. Available at www.fema.gov/pdf/nims/credentialing.pdf. Accessed January 28, 2006.
 69. Department of Homeland Security: *National Response Plan*. DHS Web site. Available at www.dhs.gov/interweb/assetlibrary/NRP_FullText.pdf. Accessed September 11, 2006.
 70. Ohio Citizen Corps: *Volunteer Reception Center: A Process to Incorporate Unaffiliated Volunteers in Disaster Response and Recovery*. Available at www.serveohio.org/CitizenCorps/2005-VRC-Manual.pdf. Accessed May 11, 2005.
 71. National Emergency Management Agency: *State Donations Management Plans*. NEMA Web site. Available at www.nemaweb.org/donations_management/index.html. Accessed March 5, 2005.
 72. Department of Homeland Security: *Minimum NIMS Compliance Activities to be Achieved during FY 2005*. FEMA Web site. Available at www.fema.gov/txt/nims/nims_compliance_fy2005.txt. Accessed October 17, 2005.
 73. Office of the President of the United States: *Homeland Security Presidential Directive/HSPD-5*. White House Web site. Available at www.whitehouse.gov/news/releases/2003/02/20030228-9.html. Accessed March 5, 2005.
 74. Department of Homeland Security: *National Incident Management System*. Available at www.dhs.gov/interweb/assetlibrary/NIMS-90-web.pdf. Accessed September 11, 2006.
 75. Westerman L, Seefried V, Barbera J, et al.: *Arlington County Public Health Volunteer Management System*. Institute for Crisis, Disaster and Risk Management Web site. Available at www.gwu.edu/~icdrm/projects/VMS/index.htm. Accessed January 28, 2006.
 76. American Red Cross: *Annex F—Disaster Services Spontaneous Volunteer Management*. Available at www.tallytown.com/redecross/dsp/form302OF.pdf. Accessed January 9, 2005.
 77. National Voluntary Organizations Active in Disaster: *State and Local VOADs*. NVOAD Web site. Available at www.nvoad.org/articles/orgman14.php. Accessed March 7, 2005.
 78. National Voluntary Organizations Active in Disaster: *NVOAD State Members*. NVOAD Web site. Available at www.nvoad.org/membersdb.php?members=State. Accessed October 19, 2005.