



Field Notes: **Extreme Weather and Community Resilience**

“YOU DON’T WANT TO MEET SOMEONE FOR THE FIRST TIME WHILE YOU’RE STANDING AROUND IN THE RUBBLE.”

Steven Steinhour November 20, 2014

THIS [COMMENT](#) by Jarrad Bernstein, spokesperson for the New York Office of Emergency Management shortly after 9/11, captures a dilemma that goes to the heart of community resilience in a disaster. If you are being overwhelmed by a tidal wave of crises—literally or figuratively—every helping hand may make the difference in saving lives and providing food, water and shelter for survivors. But at a time when multiple things are going wrong, you don’t want to be guessing about the capabilities and competence of other first-to-the-scene responders.

The spontaneous urge to help in a disaster is probably as old as humans. Indeed it may be one of those traits that define us. But in today’s world, it may come with a learning curve that exposes both victims and untrained responders to situations that carry potentially serious consequences.

From time to time the news is filled with videos of earthquakes in the mountains of China, typhoons sweeping ashore in the Philippines, or flood or tornado disasters in the U.S. If you look closely, nearly all of them capture men and women searching the rubble for trapped survivors, treating the injured or carefully removing the deceased. Although they are not identified, family members and neighbors are most frequently the first to respond, sometimes within minutes, because they are already at the scene. The trained professional responders arrive later, often deploying from more-distant stations and perhaps working down a priority list of search locations.



Earthquake volunteers in Dujiangyan, China
Credit: content.time.com



Professionals searching earthquake debris, China
Credit: Kunc.org

Those men and women combing the rubble for loved ones and neighbors are termed “spontaneous” or “emergent” volunteers by professionals who often find them to be a mixed blessing. While the volunteers can provide valuable assistance in an overwhelming event, they may often lack the training and basic equipment needed to avoid potential hazards. And

yet, they show up every time, looking for ways to help; just as humans have done for thousands of years.

The rise of professional responders in the U.S.

The precursors of today's professional responders, both police and firefighters, had their beginnings in Europe and arrived in this country with European immigrants. Both George Washington and Benjamin Franklin were involved with volunteer fire companies in the early days of this nation. Professional fire departments evolved from volunteer fire companies during the 19th century. Yet, even today, a significant number of smaller communities still rely on volunteers to fight fires. In more-recent years, emergency medical technicians (EMTs) have emerged as critical fire department responders. In disasters, fire department EMTs are now often supplemented by organized medical-profession volunteers, such as doctors, nurses and technicians.

The training of disaster responders, specifically, began to evolve during the early Cold-War years as governments from federal to local levels adopted the familiar WWII military model of a hierarchical, top-down structure for disaster response. At the time, there was concern that civilians would panic in a disaster, whether nuclear or natural; and top-down control was deemed essential. The smaller scale of government response plans in those days and the use of existing police and firemen helped ensure that the responders were trained in advance and frequently knew the other individuals with whom they would be working in an emergency. Following 9/11, this disaster response system was standardized as the [National Incident Management System](#) (NIMS). NIMS-compliant procedures are now routinely used by agencies across the U.S. Concurrently, the range of events has expanded, the scale of potential damages has increased, and the varieties of response and recovery services have become much more inclusive.

Today's greater complexity of urban infrastructure—from high-rises to subways, from numerous hazardous material storage sites to highly-dangerous and complex energy systems—increases the threat of specialized risks of injury or death for both civilians and emergency responders. Formal disaster services now extend to caring for a diversity of special needs, culturally diverse communities and possible evacuation and care for huge numbers of people. All of these factors drive the need for more intensive training, specialized skills, and better coordination among responders.

As natural disaster challenges, such as extreme weather, become more varied, spontaneous volunteers have an increasingly valuable role in first response that can include first aid, feeding and sheltering of survivors. Recognizing that disaster risks are becoming more challenging, potential disaster volunteers in the U.S. are securing formal disaster-response training. They are learning how to work effectively with ever-more skilled professional responders.

Volunteers who are residents of the community may be crucial in the first 24 to 48 hours of the disaster event.

A 2009 [report](#) by CARRI—the Community and Regional Resilience Institute now known as “ResilientUS”—focused on community resilience to disaster, and reported that:

Studies show not only that community members become involved in disaster response in large numbers but also that their efforts can in many cases be more efficient and effective than those of entities that are more far removed from everyday community life...because residents knew how many people lived in different households, who was accounted for and who was not, and locations at which their neighbors were active during different times of the day—information that greatly facilitated search and rescue...

Studies on post-disaster search and rescue activities indicate that early search and rescue efforts—that is those most likely to result in live rescues—are almost always dominated by local community residents, rather than official search and rescue teams.

A 2012 [report](#) on flood response, funded by the government of The Netherlands, stated:

In sudden on-set (natural) disasters such as earthquakes or flash floods, the response time to save lives is measured in hours. However, the vast majority of possible life-saving rescues (90%) occurs within the first 24 hours after a disaster and is mostly accomplished by local personnel.

Those rescues represent a range of response services including light search and rescue, first aid, evacuation of victims to safer areas, and the provision of food, water, and shelter for survivors. While these largely-volunteer efforts may not always be as skilled as professional responders, they are effective, available and able to swing into operation immediately when hours and even minutes count. The effectiveness of volunteer response relies on the inherent common sense, life skills, training and emotional resilience of community residents. Resident volunteers represent an extraordinary resource for community resilience; and that resilience can be made more robust by community-provided training.

Just as no two disasters are the same, so it is with volunteers. Those from the local community may be more immediately useful than later-arriving outside volunteers.

In disasters, community residents swiftly use their local knowledge to save lives, care for the wounded and provide shelter, food and water to survivors. Hours or days later, in addition to the influx of professional responders, eager spontaneous volunteers converge on the devastated area from the surrounding region. In extreme events such as Hurricane Katrina, volunteers arrive from all over the U.S.

From a community benefit perspective, training greater numbers of local potential volunteers will yield more-robust disaster resilience than will relying on out-of-area volunteers.

After Hurricane Katrina ravaged New Orleans, the numbers of well-intentioned, often out-of-state volunteers ranged from the tens-to-hundreds of thousands, depending on location. The professionals and organizations who had to manage this diversity of volunteers encountered the same generic challenges that crop up in nearly every disaster.

Frequently, large numbers of spontaneous volunteers who are not affiliated with relief organizations often “self-dispatch” and arrive with no prior disaster or medical training. They often have no familiarity with NIMS working protocols or are unwilling to work within NIMS

constraints. Quite often they have made no provision for food, water, shelter, or even for their own safety and medical care.

Under the NIMS protocols, all volunteers are screened by professional responders as to their capabilities, resources and placement in the response network. This screening is not trivial. Even trained medical personnel may experience difficulty in verifying their certifications, if they are from out-of-state and not affiliated with an in-state governmental agency or a recognized relief organization such as the Red Cross. The victims of the disaster have the highest priority claim on food and water, medical and shelter resources, and relief workers' time. Thus, professional responders must frequently turn back or delay unprepared or uncertified volunteers who might otherwise divert critical resources or time from those survivors.

The complexity and scale of the volunteer response to 2005 Hurricane Katrina in New Orleans was challenging.



Local volunteers evacuating flooded residents in New Orleans after Hurricane Katrina
Credit: Scholastic.com



Red Cross volunteers setting up shelter in New Orleans Superdome after Hurricane Katrina
Credit: En.wikipedia.org

MANAGING THE SHEER NUMBER AND VARIETY OF RESPONDERS CAN BE A CHALLENGE

The Dutch flood [report](#) cited above noted the following statistics about the sheer scale and institutional complexity of the official Katrina response:

The response system consisted of 535 organizations: 305 public organizations; 84 non-profit organizations; 143 private organizations and 3 special interests. The public organizations consisted of 146 organizations from the sub-regional level (i.e. city, parish, municipal level), 78 state organizations, 1 regional organization, 69 organizations on the national and 11 on the international level.

The total number of American volunteers assisting on the Gulf Coast in the response to Hurricane Katrina, both on-site and off, has been [estimated](#) at over 575,500 individuals.

PLANNING FOR ORGANIZED AGENCY RESPONSES BROKE DOWN

The breakdown in governmental plans and professional response to Katrina in New Orleans will, for years, be the cautionary tale. There were plans in abundance; but disasters have their own unexpected dynamics. CARRI [Report](#) 3 on the Katrina disaster stated:

...most plans did not adequately anticipate widespread and massive levee failure...plans failed as there was no anticipation of disrupted landlines and emergency communications...With power off, emergency vehicles could not be refueled, and some emergency responders redirected their efforts to evacuating and caring for their own families. The possibility that the Red Cross would not be able to enter the city was not anticipated, nor the desperation...that followed the exhaustion of meager food and water stockpiles while the officials blockaded entry of additional emergency supplies.

CARRI Report 3 summarized findings of the 2006 U.S. Congressional report, *A Failure of Initiative, Report 109-377*:

Despite plans and exercises to prepare for events of this sort, the extreme conditions overwhelmed institutional responses at all levels....Despite confusion among some government organizations, many private sector and public organizations responded quickly.

One of the widely-reported local volunteer actions was the “Cajun navy”, a spontaneous response by local fishermen and boat owners who immediately began evacuating trapped residents from window sills and roofs even as the flood waters were rising. Carri Report 3, above, stated that “...local law enforcement turned some [volunteer boat owners] back in the early hours as part of the disorganized use of volunteers.” Organized state and federal professional resources did not arrive in any volume until several days after Katrina hit.

Disaster “first response” has shifted from federal and state levels to local communities.

Over recent decades, federal, state and community agencies have recognized they cannot protect residents against every disaster and may not even be able to respond quickly after a severe one. The delays mount with the severity of the disaster. Despite much advance planning for mutual aid between agencies, it still takes time for outside agencies to organize and deliver that aid.

Today, even communities that have trained first-responders—firefighters, police, emergency medical technicians, and organized medical volunteers—are recognizing that their resources may be overwhelmed in a severe disaster. The first response priorities may be to events such as mass casualties, uncontrolled fires or floodwaters or hazardous or toxic chemical releases. Concurrently, officials will be working with other organizations and companies to restore the operation of damaged infrastructure such as hospitals, access roads, water, power and communications.

Eventually, professional responders will be able to reach all neighborhoods; but they may arrive later due to the number of emergencies. Community officials across the nation therefore advise residents they may have to be self-sufficient for 3 to 7 days, or more. Under these circumstances, residents trained in disaster response can prove invaluable as local, skilled volunteers. Few volunteers will be as equipped or as proficient as highly-trained professionals who practice constantly. But in professionally-designed training courses volunteers do learn vital skills that can save lives and help provide first aid, food, water, shelter and sanitation for survivors.



Thousands of U.S. communities already rely on volunteer firefighters.

As the historic and continuing reliance on volunteer firefighters shows, the idea of relying on trained volunteers is not new. Today, across the nation, there are about 30,100 [fire departments](#). Every day they provide both the fire and medical response upon which we all rely. Approximately 27,400 of these fire departments are entirely or partially staffed by volunteers. That figure represents a national total of over 783,000 volunteer firefighters. According to the National Fire Protection Association's 2014 [report](#), "The total cost of fire in the United States", "...the monetary value of donated time from volunteer firefighters [was estimated at] \$139.8 billion". These huge numbers of volunteers and the resulting extraordinary savings to communities are a testament to the success of trained volunteers in providing reliable critical fire and emergency medical services.

Trained resident volunteers are the newest resource for communities seeking greater resilience to disasters.

Over the last two-plus decades, communities have begun building on the distinguished model of volunteer firefighters by training resident volunteers specifically in disaster-response skills.

Community resilience is not a static, wholly-achievable goal. Rather it is a process of identifying hazards and developing flexible plans to diminish them. The priorities of hazards continually evolve as conditions—technological, demographic, economic and extreme weather—change. Communities are forced to develop flexible responses that can be adapted to those changing conditions. Trained resident volunteers can be effective, low-cost team members in flexible response plans.

A strong lesson we can draw from repeated natural disasters in the U.S. is that prior training of resident volunteers can provide more skilled responders who will be in-place and ready when that flood, tornado, earthquake or storm hits. Training residents to minimize their personal and family risks of damage or injury is inexpensive insurance. Much of what trained resident volunteers can do in a disaster prevents a bad situation from becoming worse. They solve problems and buy time until the professionals arrive.

Proactive low-cost disaster training for residents has an additional benefit-premium because they may be pivotal in saving lives. Experience has shown, over and over, that resident volunteers will be on-site, known, familiar with the community, and able to respond as the waters rise or when the shaking stops. They may be crucial in saving lives because they will be searching for and giving first aid to victims during those critical first 24 to 48 hours. If they are also disaster-trained, they will be just that much more effective. Outside volunteers won't arrive as quickly and, even then, they will be unfamiliar with the community.

"Citizen Emergency Response Teams" (CERT) is a FEMA-coordinated training program used by communities across the nation to train residents in disaster response.

In 1985 teams from the City of Los Angeles, CA travelled to Japan and Mexico to study response to earthquakes that had occurred that year. Based on lessons learned from those disasters, the [Los Angeles Fire Department](#) then created a program to train residents in disaster response. The first class graduated in 1986. By 1993 the Federal Emergency

Management Agency (FEMA) made the training program available nationally as the Community Emergency Response Teams program ([CERT](#)).

CERT training is typically provided by local fire departments and offices of emergency services. The standardized training focuses on basic disaster response skills and an understanding of NIMS procedures for disaster response management. In the event of a disaster, CERT volunteers may work in their neighborhoods or register with municipal officials for assignments to supplement an agency or other organization that has requested volunteer assistance. Currently there are slightly more than 2,400 community CERT programs operating in the U.S.



CERT volunteers train for triage and first aid
Credit: daily-tribune.com



CERT volunteers train for extracting person from collapsed structure
Credit: connectionnewspapers.com

“Communities of Oakland Respond to Emergencies” (CORE) is an Oakland, CA program that trains neighborhood residents to respond to multiple types of hazards.

Following the 1989 Loma Prieta earthquake, Oakland’s Fire Department developed the [CORE](#) disaster-response training program that initially focused on earthquake response. Following the 1991 Oakland-Berkeley Hills Firestorm, CORE training was expanded into the multi-hazard training program that is notably successful today. Although the CORE program preceded the CERT program, the disaster-response training is very similar in both.

The CORE program focuses exclusively on training teams of neighborhood residents to operate in their neighborhoods until professional emergency responders can provide services.

CORE neighborhood command posts are organized under NIMS concepts. They work independently within their neighborhood to perform damage assessment, light search and rescue, hazard abatement, first aid and other services. They also communicate neighborhood damage and injury information to the Oakland Emergency Management Services Division. In the CORE program, volunteers train, under multiple-hazard scenarios, to serve as skilled neighborhood organizers and on-site leaders of neighborhood disaster response teams. They also learn to be on-the-spot instructors for the untrained spontaneous volunteers who will emerge in every neighborhood and want to help. And, yes, the neighbors will step forward; just as they do every time.

During and immediately after an event, CORE-trained volunteers may also assist neighbors in securing food, water, shelter, child care, and sanitation. If necessary, they can coordinate neighborhood evacuation.

Volunteers practice these skills both in neighborhood exercises and in the city-wide disaster exercise once each year. In addition to the standard CORE training, volunteers can take advanced training classes and participate in educational events around the city. Trained volunteers also serve as training instructors for new volunteers. Over the last two decades, CORE has trained somewhat over 18,000 residents as volunteer neighborhood first-responders.

Professional responders train constantly. The challenge facing volunteers is finding opportunities to train. They too need to hone their skills and improve their ability to work effectively with professionals.

Federal, state and local professional responders use frequent training exercises, site visits, workshops and conferences to increase the face-to-face contact among individuals in different agencies. Personal contact, discussion of differing protocols among agencies, email and telephone all help transform strangers into recognized co-workers. CERT and CORE-trained volunteers also need these same types of training.

Volunteers need opportunities to learn from professional first responders both to upgrade skills and to develop familiarity with local agency operational protocols and individuals they may encounter during a disaster. Volunteers will benefit from understanding what professionals can and are likely to do. They also need to know both when and how they may be helpful to professionals; and the point at which they should stand down in the transition from volunteer to professional control of an event. In many communities, professionals have little contact with volunteers. Not surprisingly, they may not be familiar with the scope of volunteer training; and consequently have no understanding of those areas where volunteer training and skills could usefully supplement professional efforts.

Similarly, most communities have disaster working-relationships with Red Cross, churches, non-profits and other organizations with which trained volunteers may interact. It would be helpful to the volunteers to understand the capabilities of such entities and whether they can interact with them directly or must go through an agency clearinghouse. Workshops, where these groups can discuss issues prior to an incident, would further reduce the uncertainties of working with strangers in time of stress. Finally, trained volunteers would benefit from participating, as appropriate, in professional exercises (e.g., city-wide, at airports, etc.) to improve their skills and to become more reliable and better-understood participants in disaster resilience.

Survival and recovery in the face of disaster: Community resilience is more robust when trained resident volunteers and professional responders work together.

Communities are stronger when professional responders and disaster-trained resident volunteers understand what the other does and how to work together. Should they find themselves standing in rubble, when conditions change (e.g., a severe earthquake aftershock)

and as the needs and tasks evolve, trained volunteers and professionals will be better able to reorganize their efforts in the field quickly, effectively and appropriately.

Editorial thanks to Nancy Graalman and Robert Archibald

How to Get Involved

RRI would like to hear from you. If you have questions, comments, or concerns, please contact us at:

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