Engaging People of the Mountains and Hollows: A Role for the Community and Public Health Preparedness Workforce

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Abstract

Two basic assumptions are made by national disaster planners and policy makers: public health workers are prepared to render public health care and population-based health care services during any natural or man-made disaster, and individuals and their families are aware of and engaged in personal preparedness and response planning (Chertoff, 2008). This study had two principal goals: (1) to analyze the results of a rural health survey that sought to identify perceived vulnerability and preparedness for natural or man-made disasters among local residents in Hawkins County, Tennessee, which lies in the heart of rural southern Appalachia, and (2) to consider the results in the broader context of rural health preparedness and suggest mechanisms for improving public awareness and preparedness for all-hazards disaster situations in rural settings. A major limitation of the study was the study sample, which was a convenience sample of attendees at an all-hazards preparedness health fair. The study responses demonstrated a lack of perceived vulnerability, which may reflect the fact that living memory does not recall major local disasters affecting the community. The authors suggest that local poverty among county residents may also play a role in local preparedness and response. Despite the readiness or availability of public health professionals, rural areas may be especially vulnerable to natural or man-made disasters due to a lack of public awareness and understanding of recommended preparedness plans and responses. The authors suggest that Community Health Educators (CHEs) and Community/Public Health Nurses (CPHNs) in the public health workforce can formally and informally be valuable sources of emergency preparedness and response planning, training, and education in rural communities.

Keywords: Rural, Appalachia, Community Health Educators, Public Health Preparedness Workforce, Community/Public Health Nurses

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1.0 Introduction

Two basic assumptions are made by national disaster planners and policy makers: public health workers are prepared to render public health care and population-based health care services during any natural or man-made disaster, and individuals and their families are aware of and engaged in personal preparedness and response planning (Chertoff, 2008). In response to this need, both public health and nursing, along with health care providers and first responders, have acted to ensure preparedness and response competence among workers in the health fields. The 2006 Pandemic and All-Hazards Preparedness Act, the Association of Schools of Public Health (ASPH), in cooperation with the Centers for Disease Control and Prevention (CDC), has developed a preliminary model of core competencies for the public health preparedness and response workforce (Association of Schools of Public Health (ASPH), 2010). Additionally, the Association of Community Health Nursing Educators (ACHNE) developed criteria for disaster preparedness that need to be included in all health education and nursing curricula to address the need for knowledgeable providers during disasters. These criteria address issues involving standards of practice, professional ethics, organizational and leadership skills, multi-sector approaches, community service, and competency (Kuntz, Frable, Qureshi, & Strong, 2008).

This paper has two principle goals. The first goal is to analyze the results of a rural health survey that sought to identify perceived vulnerability and preparedness for natural or man-made disasters among local residents in a rural Appalachian county. The second goal of the project is to consider survey results in the broader context of rural health preparedness and suggest mechanisms for improving public awareness and preparedness for all-hazards disaster situations in rural areas.

1.1 The Study Setting

The study took place in Hawkins County, Tennessee, which covers approximately 487 square miles in northeast Tennessee. As noted by Gatz, Rowles, and Tyas (2004), Appalachia has distinguishable individual and community level risk factors. As in much of Appalachia, the county is characterized by a series of high ridges and long, continuous valleys and hollows (hollers) that run from the southwest to northeast (Amick, 1934). The landscape in Hawkins County ranges from relatively flat valleys with pastureland and farms to high mountain ridges. The Holston River divides Hawkins County nearly in half from northeast to southwest, as does the major transportation arteries, i.e., a four-lane U.S. Highway 11W and commercial rail service lines. Hawkins County connects with regional and national markets by a statewide network of railroads (Hawkins County Industrial Development Board, 2010a). It is served by CSX and Norfolk-Southern rail systems with piggyback service available from Morristown and Kingsport (Hawkins County Industrial Development Board, 2010b). The importance of the topography is that the ridges and hollows create natural boundaries, which serve as natural barriers for transportation and communication. Thus, many small communities and families can be easily isolated from larger population centers and are isolated from many community services.

Cultural traditions and family histories extend back 300 or more years for many families in the county. Most of the people who live there claim a heritage rooted in a

Scots-Irish tradition, frequently with a mixture of Cherokee and English. In 2005, the population of Hawkins County was estimated to be 56,534 (U.S. Census Bureau, n.d.). Approximately 97% of the population is white; 1.6% is Black; and approximately 1% Hispanic. The median age of the population was 40.0 years; 77.4% were 18 years and over; and 17.7% were 65 years and over (both higher than U.S. rates). U.S. Census analysis attributes 38.5% of the total population to urban areas (U.S. Census Bureau, N.d.). Kingsport is the largest metropolitan area followed by the cities of Churchill, and Mt. Carmel, in the northeast part of the county. Rogersville, the county seat and next largest urban area, has a population under 5,000. Most (61.5%) of Hawkins County residents live in rural parts of the county and are sparsely dispersed on the ridges, gaps and hollows throughout the county. Overall population density in 2000 was estimated to be approximately 110 persons per square mile, but this is considerably lower in rural areas of the county (Tennessee Advisory Commission on Intergovernmental Relations (TACIR), N.d.).

Many of the residents of Hawkins County self-identify with a specific geographic area of the county. For example, people from "down here" or the southern part of the county generally identify with the county's longest established families who have had a strong political influence in county government. In addition, those involved in county politics and leadership roles tend to identify with the county seat of Rogersville, which is also viewed as the cultural hub of the county. People from "up there" include a greater number of individuals who have been attracted to Hawkins County from outside the area. Also, Churchill and Mt. Carmel tend to associate more with Kingsport political and economic endeavors than those in the rest of the county. People from these communities have extremely strong and forceful city governments that challenge Rogersville on many issues. A third category are people "o'er the mountain" – meaning those who live west of the mountains that abut Highway 11W from just south of Mt. Carmel.

Poverty, in Hawkins County, is an all too common problem. The median value of owner-occupied homes in Hawkins County averaged for the three years 2005-2007 was $91,900 compared to the national median of $181,000 (U.S. Census Bureau, 2009). Median household income (2005) was $32,456, well below the national average of greater than $50,000. For all ages, 18.8% fell at or below the poverty level for 2005, but the number was significantly higher for individuals below age 18 years (27.2%) (U.S. Census Bureau, 2009). For children ages 5-17 living in families, the poverty rate in 2005 was 24.8%. Anecdotal stories abound about school children who get the only food they receive at school during the week because there is no money to buy food at home. This cultural concept is supported by a high number of students participating in the Free/Reduced Lunch Program. According to data provided by the Tennessee Commission on Children and Youth, 41.8% of children in Hawkins County participated in the Free/Reduced Lunch Program in 2006, down from 46.4% in 2005 (Annie E. Casey Foundation, 2009). In 2007, 16.7% of households and 16.3% of individuals were Food Stamp Recipients (Tennessee Advisory Commission on Intergovernmental Relations (TACIR), N.d.).

Hawkins County qualifies as Medically Underserved Area (MUA) and a primary care, mental health, and dental Health Professional Shortage Area (HPSA) even with its close proximity to the Kingsport-Bristol-Johnson City (Tri-Cities) metropolitan area (HRSA, 2009). Measures of access to healthcare include the number of medical doctors per 1,000 population (Hawkins County = 0.3; TN = 1.8); hospital beds per 1,000 population (Hawkins County = 0.9; TN = 4.2); and nursing home beds per

1,000 population (Hawkins County = 10.7; TN = 49.2) (HRSA, 2009). Another indicator is the percent of charity care (as a percent of all hospital care). Hawkins County had 14.9% charity care compared to the state average of 8.5% charity care (Tennessee Advisory Commission on Intergovernmental Relations (TACIR), n.d.). Interestingly, the 2005 health insurance coverage for Hawkins County residents under age 65 years = 87.2% (U.S. Census Bureau, 2009) suggests that lack of insurance does not limit most residents from seeking needed healthcare. In addition to TennCare (Medicaid), "Cover Tennessee" was developed to create affordable and portable health insurance options for the state's uninsured (Cover Tennessee, 2009), which is a further indicator that standard measures of access to healthcare do not apply to this population.

Volunteers provide the bulk of Emergency Medical Services (EMS) in Hawkins County. For example, the city of Rogersville owns and operates two fire stations, with six fire trucks, and employs four full-time firefighters. The remaining 18 firefighters are volunteers. Similarly, the county has 12 fire stations that employ 40 firefighters, but depend on >150 volunteers to ensure services (State of Tennessee, 2006). The Hawkins County Rescue Squad was chartered in 1958 with 19 volunteer members. As of 2009, all members are volunteers who must pay for some training and personal gear because it is not supplied for them. As of 2006, Hawkins County Rescue Squad has an impressive array of apparatus in their inventory for rescuing people in all types of emergencies, e.g., auto accident, lost in woods, fall from cliff, trapped in a cave or buried in a trench/building collapse, and boating/drowning accidents. They do not have a hazardous material (HazMat) trailer and must coordinate this service with surrounding EMS services (Hawkins County Rescue Squad Inc., 2009).

The Hawkins County Health Department employs several RNs who manage and work in collaboration with county schools, county agencies, and health care providers to implement an array of services including prenatal and children's special services, epidemiology, health education, dental, immunization, WIC, and primary care. Many of these programs are funded by state and/or federal programs that provide annual financial support. In light of current federal and state budget, funding for health department programs is always precarious at best (Hawkins County Tennessee, 2009).

2.0 Methods

The All-Disasters Preparedness and Response Health Fair format was chosen as a community based participatory project within the context of a faculty-led interdisciplinary student service-learning project sponsored by the Community Partnerships for Health Professions Education Program at East Tennessee State University (ETSU). For an in-depth description of the Community Partnerships program, see, for example, Florence, Goodrow, Wachs, Grover, and Olive (2007) and Goodrow et al. (2001). An article announcing the health fair was published in the local paper and flyers were posted at various businesses in an attempt to attract participants from the community. In a joint effort, community partners, project staff, and students chose topics, set up exhibits, developed informational pamphlets, and participated in planning and implementation of the health fair. Community partners represented law enforcement, local providers, the local hospital, Rescue Squad, the Red Cross, community rural health clinics, the fire department, the county school district, and the local health department. The study

staff and students set up booths that featured specific hazard flyers and information. Booth topics included winter storms, tornadoes, lightning storms, floods, and chemical spills. The selection of topics was chosen based on a preliminary environmental assessment of the county conducted by students in a previous semester's class project.

The all-disasters preparedness health fair took place in the parking lot, hallway, and cafeteria of a local elementary school in the county seat. The health fair included on-site demonstrations and a variety of learning and informational booths. The site was chosen by fair organizers because of its visibility on the town's main street and because it provided sufficient space for disaster response vehicles to be present. Emergency response vehicles included a medical evacuation helicopter, fire trucks, canine patrol, and hazardous materials (HazMat) truck. Community emergency response volunteers staffed each of the vehicles and demonstrated their use to visitors. Food was served, and prizes, including a grammar school poster contest, were awarded to participants.

A survey instrument was developed and tested within the context of a community-based experiential learning class. A convenience sample of 110 attendees at the rural all-hazards preparedness health fair was used to obtain information about disaster preparedness among the general population. Surveys were distributed to adults as they entered the health fair venue and each was asked to fill out the survey and return it as they left the health fair site. Each survey contained nine questions to determine level of preparedness and the relevance of information presented to health fair attendees.

An estimated 250 adults and numerous children attended the health fair. Of that number, 110 (44%) adult respondents returned completed surveys. Respondents included 63% (n=69) females and 37% (n= 41) males (no age or racial cohort data were collected). The Institutional Review Board (IRB) for the protection of humans at East Tennessee State University approved the study protocol.

A limitation of the study is that only adults who attended the health fair were given a survey form; thus, they represented a convenience sample of the community. It could be argued that these individuals already had some interest in the subject. Conversely, it could also be argued that some of the attendees had no interest in the health fair, but simply saw the medical evacuation helicopter, fire trucks, and other emergency vehicles in the parking lot and attended as a function of curiosity. There is nothing to substantiate either of these observations. Second, less than half of the attendees actually completed the surveys. Both of these features may limit the generalizability of the research results.

3.0 Results

As shown in Table 1, less than half of the respondents indicated that they had a disaster preparedness plan for themselves or their family. Additionally, less than one-third had a disaster preparedness kit for their home. Even so, almost all respondents (95%) believed that it was important to plan for a disaster ahead of time. Most (92%) believed that they learned "something new about disaster planning" at the health fair and felt more prepared for a disaster than before. In addition, 86% of respondents stated they would make a personal plan and disaster preparedness kit after attending the health fair. Only two-thirds of the respondents answered the questions regarding the helpfulness of health education booths and

handouts (see Table 2). Of those who responded, the American Red Cross information booth provided the most helpful information.

Table 1. *Survey questions*

Question	Yes	No	No Answer	Maybe
Do you feel more prepared for a disaster after coming to the Disaster Preparedness Health Fair?	n= 101 92%	n= 2 2%	n= 7 6%	NA
Do you have a Disaster Preparedness Plan?	n= 48 44%	n= 56 51%	n= 6 5%	NA
Do you have a Disaster Preparedness Kit?	n= 30 28%	n= 74 67%	n= 6 5%	NA
Did you learn something new today?	n= 101 92%	n= 2 2%	n= 7 6%	NA
Do you feel preparing for a disaster ahead of time is important?	n= 56 95%	n= 0 0%	n= 6 5%	NA
After today, will you make a disaster preparedness plan?	n= 95 86%	n= 1 1%	n= 13 12%	n= 1 1%
After today, will you prepare a disaster preparedness kit?	n= 95 86%	n= 3 3%	n= 12 11%	n= 0 0%

Table 2. *Informational Booths and Handouts: Which was most helpful?*

Topic	Booth	Handout
Winter Storm	3%	8%
Tornado	8%	5%
Lightening	4%	3%
Flood	5%	5%
Chemical Spill	5%	9%
Red Cross	27%	15%
Methamphetamine	5%	5%
Other	5%	15%
Flu Shot	5%	NA
No answer	33%	35%

3.1 Discussion: The Rural Paradox

We are prepared for "normal" emergencies.

Results of the survey demonstrate three preparedness issues. First, most participants did not have a disaster plan nor a family disaster kit in place at the time of the survey. This demonstrates that disaster planning education had not reached the community level or that individuals did not perceive there to be a great risk for a major disaster in the county. Second, most people surveyed, felt that planning for a disaster before it happens is useful and stated that they learned something new from the health fair informational booths. Third, respondents also indicated that they would develop a preparedness plan and kit after leaving the health fair. It was not possible to validate whether the respondents, in fact, did follow through with a disaster plan and kit because all survey data were anonymous. Responses demonstrate interest in, rather than complacency for, preparedness among the respondents. It is interesting to note that the most helpful booth was that presented by the American Red Cross. Although the Red Cross booth did provide some flyers for people to read, it also demonstrated a preparedness kit so that participants could get a hands-on experience examining kit contents. As of 2007, a new Emergency Management Agency Director was appointed to facilitate coordination with state and federal agencies and to facilitate preparedness planning for local citizens (Hawkins County Emergency Management Agency, 2010).

The information booths and handouts about the most likely hazards (as determined by a previous student led county assessment) did not appear to be particularly helpful to the health fair participants. The reasons are not clear from this research. One-third of survey respondents did not answer this question and among those who did, the one booth that aroused the most attention had hands-on demonstration kits for individuals to use. It is suggested, therefore, that utilizing informational flyers for health education purposes among this group may not be the most effective means of conveying information. A more interactive, adult learning approach may yield greater results.

These authors maintain that the way current Federal policy (Chertoff, 2008) impacts community disaster planning is to dictate local action to prepare without considering local needs and existing capabilities. A question might be raised as to the appropriateness of the current federal disaster protocol. Current federal disaster protocol lacks sensibility and appears to view rural areas as simply 'mini' urban areas. Furthermore, the policy is an all-hazards plan designed to maximize response, recovery, and mitigation efficiency necessary for major national disasters. Unfortunately, a scenario emerges all too often that is characterized by a well-functioning local system that appears belligerent or deemed complacent to cultural outsiders (AHRQ, 2005). In fact, local residents may (1) perceive their circumstances ignored in mandated requirements; (2) fail to culturally identify with national concerns, and (3) may not visualize a nationally declared disaster as a probable event in their area.

In order to be successful, community level preparedness must coordinate and integrate their efforts in both a vertical and horizontal fashion. This means that communities must organize preparedness plans, response, recovery, and mitigation efforts within the formal, legal structure of preparedness with the Department of Homeland Security (DHS), the Federal Emergency Management Agency (FEMA), and in this case, the Tennessee Emergency Management Agency (TEMA). In this

effort, EMS resources must develop, exercise, and maintain the capability to integrate with the federal level in order to have a seamless response to any major disaster, i.e., vertical coordination. Simultaneously, community efforts must function effectively to engage community resources when and where needed, i.e., horizontal coordination. Last, but not least, community residents, those individuals who may not be "part" of the disaster preparedness network, must be informed and self-prepared for emergencies.

According to the Office of Rural Health Policy (2002), although state offices of rural health have recently been incorporated into the planning of state emergency preparedness plans in efforts to address the special needs of these communities, program planning deficiencies remain. In any given community, community and public health workers could make a significant contribution at the horizontal level. Knowing and being able to access community resources in a time of disaster would play a crucial role in planning for and responding to a community disaster.

Certainly, compliance may be more difficult in rural communities, such as Hawkins County, where fiscal and personnel resources are scarce. However, the difficulties are not just financial, logistical or technological. Local power brokers, stakeholders, and providers may find the federal directives intrusive and insensitive. There is a common perception that the makers of federal policies and directives are generally cultural outsiders who do not know and understand small local communities.

Appalachia shares a distinguishable culture where "place" is prominent. "Appalachians traditionally do not seek attention, and they try to manage their own problems" (Behringer & Friedell, 2006, p. 3). Data from the surveys support this conclusion. This philosophy is quite evident in preparedness efforts. The concept of "Place" extends well past individual lifestyles and knowledge into the public administration arena. Place becomes "community." People self-identify with place and community and are known by that identifier. You either "belong" or you do not – it is not negotiable. It is at this juncture that tensions may occur between outsiders (i.e. local community members and outside disaster planners). Similarly, subgroups among Appalachians demonstrate tension between and among long-standing group interests. Patterns of handling emergencies have developed with few publically financed resources and with a sense of self-determination on the part of community. Many communities may respond to local floods or tornados by neighbors and church members banding together to help families in need – to help with rebuilding homes and roads. Despite this, the sense of community is geographically bound in that the upper part of Hawkins County remains distinct from the lower part of the county, though official county business is still conducted at the county seat. The broadest distinction is between the southern part of the county, i.e., "oldest" families and traditional county political power brokers, and the newer (though wealthier) population that has grown around industry associated with Kingsport, Mt. Carmel, and Churchill, i.e., the northern part of the county. Community Public Health educators and workers who work in the area are aware of the distinction. They can and do play a major role in attempting to bridge the divide that exists through their "county-wide" programs and services.

For Hawkins County, there are acknowledged pitfalls in rural emergency preparedness that include geographic isolation, seasonal weather variations, lack of transportation, and pervasive, poor economic conditions. As with other small, rural areas throughout the country there is a lack of coordination, communication, training, resources and funding. According to Akins and colleagues (2005), such

areas are typically not adequately equipped to handle hazardous materials, provide emergency responses, vector control, decontamination, isolation, quarantine, and telecommunication. However, Hawkins County does have an effective EMS system thanks to a strong community spirit in all sections of the county with traditions of giving and volunteer work, though it still lacks a seamless communication system. Almost all active firefighters are volunteers, minimally certified in Firefighter One training.

There is little doubt that emergency preparedness in rural areas depends on the interaction of numerous stakeholders, e.g., public health departments, hospitals, and emergency medical service providers and local community/public health workers. A high degree of communication failure on the part of community level practitioners and public health officials is typically seen during disaster response (Office of Rural Health Policy, 2002). Seamless communication and procedural transparency remain issues in Hawkins County. Communication remains a major issue in the mountains where cell phones and some radios frequently do not work away from town limits or major highways. Likewise, as with much of rural Appalachia, there are no emergency sirens located either in the county seat or in the rural areas of the county to signal impending weather disasters like tornados or floods. Telephones and cell phones function as a principle communication technique employed throughout the county; however, cell phones do not work in much of the county.

Another factor that affects communication is a paternalistic approach between local government and the public. It is the lack of what Thomas (1995, p. 83) refers to as the "coproduction" of public services. *"Don't worry your little head about it, nothin's gonna happen here and if it does, we'll take care of it."* (Anonymous, 2006). Increased transparency in the planning process would improve vertical and horizontal communication within Hawkins County.

4.0 Conclusions

As Tierney, Lindell, and Perry (2001) point out, familiarity with different disaster agents can stimulate preparedness and response efforts or can engender complacency or fatalism. Behringer et al. (2006, p. 3) remark that *"…mountains shape people's lives, both literally and figuratively."* We argue that rather than complacency, the seeming lack of individual interest in disaster preparedness in the study area is due to lack of financial resources (cannot afford a disaster kit at home), perceived lack of community and personal vulnerability, and the role living memory, tradition, and word of mouth, i.e., Appalachian cultural values that include "…independence, self-reliance, strong attachment to home and family, emphasis on interpersonal rather than instrumental relationships, and mistrust of 'out-siders' …mistrust of outsiders, independence,…"(Rowles, 1991, as cited in Gatz et al. 2004).

It has been suggested that the fact that disasters "appear" to be fewer in rural areas leads to the perception that rural areas are "safer"; thus, a relative level of safety and complacency regarding relative risk can easily become the norm, and particularly complacent when acts of terrorism are considered (Office of Rural Health Policy, 2002). Perceived safety can be viewed as the inverse of perceived risk, risk being defined as a "function of threat, vulnerability, and consequence" (Chertoff, 2007, p.43). Politically, vulnerability must engage local stakeholders, sustain their involvement, and create durable coalitions to be effective (Clarke & Chenoweth, 2006). According to Morrow (1999), disaster vulnerability "arises out of social and economic circumstances of everyday living" (p. 1); that is, it is

socially constructed. Although urban areas are generally perceived to be higher target areas for terrorist attacks due to their population densities and potential sensationalism, rural areas are subject to substantial risk for intentional or unintentional nuclear/biological/chemical disasters (Office of Rural Health Policy, 2002). This is because of all the U.S. Air Force missiles launch facilities; many nuclear power facilities; many uranium and plutonium storage facilities; many chemical facilities with consequent transit of hazardous materials through their areas; and porous international borders that could potentially facilitate nuclear/biological/chemical security risks are located in rural localities. Paradoxically, rural areas are least prepared to respond to a terrorist attack due to limited health infrastructure, scarcity of health personnel, and voluntary emergency medical systems, but in some regards are subject to higher risks. The following high risk entities are located in or within 90-100 miles of Hawkins County:

- John Sevier Fossil Energy Plant (Tennessee Valley Authority or TVA)
- Holston Army Ammunition Plant; Eastman Chemical Company;
- Oak Ridge National Laboratory; Nuclear Fuel Services, Incorporated; and
- miles of railroad tracks that routinely transport hazardous chemicals.

Several living memory details regarding natural disasters essentially describe the survey results. In living memory discussions, the last tornado that struck the county and caused major damage hit Yellow Store, in the north central part of the county in 1978. (Anonymous, 2006). In actuality, small tornadoes do touch-down in the county not infrequently, but because they do not cause significant damage, these storms were generally ignored in living memory discussions. Winter storms are not common, but are also not rare; the last big one was the blizzard of 1993 that shut down roads for a few days and resulted in power outages. Many homes have fireplaces and burn wood for heat or have individual propane tanks or both; thus, many homes do not depend on outside services except for electricity, which may be needed to run central heating systems. Additionally, in rural areas, water frequently comes from individual wells; therefore, individuals rarely appear to be concerned about access to water. Floods happen; but, it appears to be common knowledge in which areas flood are likely to occur.

When asked about natural or terrorist disasters that impacted Hawkins County, most of the Emergency Management System (EMS) workers stated there was no problem. In speaking with a local EMS representative, there is a belief that most calls for service are for chest pain or vehicular accidents on the many two lane, winding highways throughout the county as well as on the four lane (no controlled access) U.S. Highway 11W that runs the length of the county (Anonymous, 2006). There were no data to substantiate exact numbers of incidences, so these beliefs are based on recollection and perception. Perhaps one of the first interventions could be aimed at EMS providers in the county.

In summary, for the study area, it appears that lack of preparedness (either individually or as a community) in Hawkins County may be due to lack of financial resources as well as notions of perceived community vulnerability. The authors see the role of the community/public health educator and worker as an untapped resource that could be used not only to increase awareness of the importance of disaster planning, but to initiate county-wide efforts that include both man-made and natural disasters.

Although disaster training is essential for all health care professionals, it is important to note that the need for and role of responders may differ dramatically in level and duration of response depending on the nature of the disaster. For example, rebuilding of New Orleans following Hurricane Katrina in 2005 has progressed differently than reconstruction of the site of the terrorist attack on the World Trade Centers in New York in 2001. Conversely when a pandemic or "a worldwide epidemic of a disease" (Centers for Disease Control and Prevention, 2010, para. 1) strikes, such as the recent 2009 outbreak of H1N1 influenza, a different type and complexity of response must be put in place during the period of the pandemic (World Health Organization, 2010).

Public Health Emergency Preparedness (PHEP) is necessary to respond to public health emergencies or those situations where health consequences may potentially overwhelm routine community capabilities (Nelson, Lurie, Wasserman, & Zakowski, 2007). Community Health Educators (CHEs) and Community/Public Health Nurses (CPHNs) play an important and vital role in emergency preparedness and disaster planning (Gebbie & Qureshi, 2002; Gebbie & Turnock, 2006; Katz, Staiti, & McKenzie, 2006; Rowney & Barton, 2005). In fact, many community and public health workers are in positions to engage local public health and health care systems, communities, and individuals to prevent, intervene, and recover from public health emergencies and disasters. However, despite the readiness of CHEs and CPHNs, rural communities may be especially vulnerable to natural or manmade disasters. This is because rural communities may experience a shortage of prepared healthcare workers, or may not have a well-developed community infrastructure that can support a community crisis, and/or individuals may lack general public awareness of what to do if a natural or man-made disaster strikes a community.

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