

## Disasters and Catastrophes Defined

The United States is a volatile land, with risks at every turn. We face the following risks:

- Floods occur in all 50 states and all U.S. territories (FEMA 2010c).
- Earthquakes have occurred in 43 U.S. states in the past 30 years (USGS 2009a).
- On average, five hurricanes strike the United States every three years (AOML 2010).
- Wildfires occur annually (USGS 2010).
- TORNADOS affect every state (every state has had at least one tornado) (Climate Services Monitoring Division 2010).
- The United States is home to 65 active or potentially active volcanoes (National Academies Press 2000).
- Landslides occur in every state (USGS 2009b).
- Almost 14,000 oil spills are reported each year in the United States (NSTC 2003).
- Each year, fire kills more Americans than all other natural disasters combined (NESEC n.d.).

Concerning earthquakes specifically,

- 39 states in the last 100 years experienced damage from earthquakes (HP and SCORE 2007),
- 90 percent of Americans live in seismically active areas (IINC 2006), and
- only 25 percent of homeowners in California have earthquake insurance (Insure.com 2009).

### High Water

In a recent report for the Organisation for Economic Co-operation and Development (OECD), researchers noted that the first estimate of exposure to coastal flooding and high winds finds about half the worldwide exposure in just ten cities, with only one on the mainland United States—Miami.

## EMERGENCIES, DISASTERS, CATASTROPHES, AND CRISES

With a plethora of different definitions for *disaster*, it is understandable that health-care leaders are unsure of the terminology when it comes to describing an event and often use these terms interchangeably.

One definition of *disaster* stated that it was “a calamitous event, especially one occurring suddenly and causing great loss of life, damage or hardship” (American Heritage Dictionary 2006). A synonym was “catastrophe.” How can a disaster be a catastrophe? Are they one and the same? The business and insurance industries define a catastrophic event differently than an emergency manager does. In fact, the *catastrophe* definition in the business and insurance industries has changed over time. Exhibit 1.1 provides published definitions, but it may be easier to focus on the way academia clarifies these terms.

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### Exhibit 1.1: The Conundrum of Definitions

Definitions (*American Heritage Dictionary* 2006) are confusing and not much help in the delineation or categorization of an event. The two definitions that follow illustrate this conundrum clearly:

- Disaster: an occurrence causing widespread destruction and distress; a catastrophe
- Emergency: a serious situation or occurrence that happens unexpectedly and demands immediate action

**e·mer·gen·cy:** *noun*

1. A sudden urgent, usually unexpected occurrence or occasion requiring immediate action
2. A state, esp. of need for help or relief, created by some unexpected event: a weather emergency, a financial emergency

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*Synonyms:*

Extremity, plight. EMERGENCY, CRISIS, STRAITS refer to dangerous situations. An EMERGENCY is a situation demanding immediate action. A CRISIS is a vital or decisive turning point in a condition or state of affairs, and everything depends on the outcome of it. STRAIT suggests a pressing situation, often one of need or want.

Source: Dictionary.com Unabridged. Based on the *Random House Dictionary*, Random House, Inc., 2010, s.v. "Emergency."

**e·mer·gen·cy**

1. A serious situation or occurrence that happens unexpectedly and demands immediate attention
2. A condition of urgent need for action or assistance; a state of emergency

Source: *The American Heritage Dictionary of the English Language*, 4th ed., s.v. "Emergency."

**e·mer·gen·cy**

1. An unforeseen combination of circumstances or the resulting state that calls for immediate action
2. An urgent need for assistance or relief

Source: *Merriam-Webster's Dictionary of Law*, 1996, Merriam-Webster, Inc., s.v. "Emergency."

**e·mer·gen·cy:** An unforeseen combination of circumstances or the resulting state that calls for immediate action

Source: *Merriam-Webster's Medical Dictionary*, 2002. Merriam-Webster, Inc., s.v. "Emergency."

**dis·as·ter:** *noun*

1. A calamitous event, especially one occurring suddenly and causing great loss of life, damage, or hardship, as a flood, airplane crash, or business failure

*Synonyms:*

DISASTER, CALAMITY, CATASTROPHE, CATAclysm refer to adverse happenings often occurring suddenly and unexpectedly. A DISASTER may be caused by carelessness, negligence, bad judgment, or the like, or by natural forces as a hurricane or flood. CALAMITY suggests great affliction, either personal or general; the emphasis is on the grief or sorrow caused. CATASTROPHE refers esp. to the tragic outcome of a personal or public situation; the emphasis is on the destruction or irreplaceable loss: the catastrophe of a defeat in battle. CATAclysm, physically an earth-shaking change, refers to a personal or public upheaval of unparalleled violence.

Source: Dictionary.com Unabridged. Based on the *Random House Dictionary*, Random House, Inc., 2010, s.v. "Disaster."

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**Exhibit 1.1: The Conundrum of Definitions** (continued)

**dis-as-ter (from the French “désastre”; the Italian “disastro”)**

1. An occurrence causing widespread destruction and distress; a catastrophe
2. A grave misfortune

Source: *The American Heritage Dictionary of the English Language*, 4th ed., s.v. “Disaster.”

**dis-as-ter**

1580, from M.Fr. *désastre* (1564), from It. *disastro* “ill-starred,” from dis- “away, without” + *astro* “star, planet,” from L. *astrum*, from Gk. *astron*. The sense is astrological, of a calamity blamed on an unfavorable position of a planet.

Source: Online Etymology Dictionary, s.v. “Disaster.”

**ca-tas-tro-phe: noun**

1. A sudden and widespread disaster; any misfortune, mishap or failure

Source: Dictionary.com Unabridged. Based on the *Random House Dictionary*, Random House, Inc., 2010 s.v. “Catastrophe.”

**ca-tas-tro-phe**

- A great, often sudden calamity
- A sudden violent change in the earth’s surface, a cataclysm
- From the Greek *catástrophē*, an overturning, ruin, conclusion

Source: *The American Heritage Dictionary of the English Language*, 4th ed., 2006. Houghton Mifflin Harcourt, s.v. “Catastrophe.”

**ca-tas-tro-phe**

From 1540, “reversal of what is expected” from Gk. *katástrephein* “to overturn,” from *kata* “down” + *strephein* “turn.” Extension to “sudden disaster” is first recorded in 1748. Catastrophism as a geological or biological theory is from 1869.

Source: Online Etymology Dictionary, s.v. “Catastrophe.”

**ca-tas-tro-phe**

- Death (as from an inexplicable cause) before, during, or after an operation

Source: *Merriam-Webster’s Medical Dictionary*, s.v. “Catastrophe.”

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Considering a number of variables makes it much easier to see the differences in these terms, guiding us to use them more appropriately. For the purpose of this book, the terms *emergency*, *disaster*, and *catástrophē* are defined as Exhibit 1.2 shows.

An emergency is a common event. An example of an emergency might be an accident resulting in a broken bone, heart attack, or stroke. Although the event

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**Exhibit 1.2 How Bad Is It?**

	<i>Routineness/ Severity</i>	<i>Impact/ Resources</i>	<i>Social Order/ Psyche</i>
<b><i>Emergency</i></b>	Routine, adverse events	None outside the affected individual or family	No disruption or long-term effect
<b><i>Disaster</i></b>	Nonroutine, severe	Community-wide impact; may require resource assistance	Disrupts social order or psyche of area or region
<b><i>Catastrophe</i></b>	Unusually extreme, rare events	Affects an entire nation and/or parts of the world; requires extensive resource assistance	Long-term disruption to the social order, security, or psyche of a nation or its peoples

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may have a severe effect on the patient or immediate family members, it is routinely handled well by the local emergency medical services system. An emergency causes no disruption to the social order or psyche of the community or population.

A disaster is a severe event such as a massive flood, destructive tornado or hurricane, or human-caused or terrorist attack. The community may be affected, and resource need may overwhelm the local area, requiring outside assistance from the state or even federal government (as occurs with a presidential disaster declaration). These events disrupt the social order, psyche, and sense of security of those living in the region, and memories of such events may persist for generations.

A catastrophe is an unusually extreme, rare event that affects an entire nation or part of the world. Recent catastrophic events have included the events of September 11, 2001 in the United States, the Banda Aceh earthquake and resulting tsunami, the recent massive earthquakes in Haiti and Chile, and extensive, severe flooding in Pakistan and other areas of the world. These events require extensive resource assistance from outside the region and a global response. The damage to the social order, psyche, and security of the country or countries affected may be profound and prolonged.

Based on the United Nations definition, natural catastrophes are classified as *great* if a region's ability to help itself is distinctly overtaxed, making supraregional or international

assistance necessary. As a rule, this is the case when there are thousands of fatalities, hundreds of thousands are left homeless, and/or overall losses are of exceptional proportions given the economic circumstances of the country concerned. In terms of our great natural catastrophe statistics, this means specifically:

- ◆ Number of fatalities exceeds 2,000 and/or
- ◆ number of homeless exceeds 200,000 and/or
- ◆ overall losses exceed 5 percent of that country's per capita GDP and/or
- ◆ the country is dependent on international aid.

Since 1950, 285 catastrophes have fulfilled these criteria, with approximately 30 percent meeting all criteria.

A natural catastrophe can only come about if a society is not sufficiently prepared for an extreme natural event. Global changes have meant increased vulnerability nearly everywhere (Wirtz 2010, used with permission).

## DISASTERS ARE INCREASING IN FREQUENCY AND SEVERITY

Globally, disasters have increased in frequency and severity. Between 1994 and 2003 (the last decade for which we have statistics), more than 2.5 billion people were affected by natural disasters—a 60 percent increase over the two previous decades. And in the United States alone, where we average about 400 disasters with damage a year, the numbers from 1994 to 2003 were 25 percent higher than the average for the previous decade. Exhibit 1.3 lists the U.S. states with the most federal disaster declarations since 1953 (CRED 2008).

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**Exhibit 1.3 States with Most Disasters**

<i>State</i>	<i>Disaster Declarations</i>
Texas	83
California	74
Florida	61
Oklahoma	61
New York	57
Louisiana	55

*Source:* FEMA (2010a).

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The 2005 Atlantic hurricane season remains the busiest in recorded history. Exhibit 1.4 shows the records that were surpassed that year.

Publications overflow with statistics of the negative effects of disasters worldwide.

- ◆ The death toll from disasters over the last 50 years exceeds 12 million persons, with billions affected. Economic costs are estimated as high as \$4 trillion (Sundnes and Birnbaum 2003).
- ◆ On average, one disaster per week requires international assistance (Veenema 2003).
- ◆ During the past 20 years, natural disasters have killed at least 3 million people and have affected 800 million more (Bruntland 2003).
- ◆ The Spanish Flu outbreak of 1918–19 was the worst pandemic in modern times. An estimated 17 million people died in India—about 5 percent of India’s population at the time. Almost 22 percent of troops in the Indian Army died, and it is estimated that between 2 and 5 percent of the global population at the time died.

The Federal Emergency Management Agency (FEMA) has recorded 1,826 disasters since 1953, an average of 32 federally declared disasters per year (FEMA 2010a). Yet, the United States has suffered few civilian disasters on a massive scale. Fewer than ten civilian disasters in the United States have had fatality rates exceeding 1,000, and “only about 10–15 disasters per year have resulted in more than 40 injuries” (Wright 1976).

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**Exhibit 1.4 Records: Hurricanes and Tropical Storms**

<i>Record Title</i>	<i>Previous Record</i>	<i>2005 Record</i>	<i>New Record</i>
Most named tropical storms	21 (1993)	28	Unchanged
Number of hurricanes	12 (1969)	15	Unchanged
Major hurricanes hitting the United States	3 (2004)	4	Unchanged (3 in 2008)
Category 5 intensity (> 155 mph)	2 (1960 and 1961)	4	Unchanged
Costliest	\$26.5 billion (1992 dollars), Hurricane Andrew	\$80 billion (2005 dollars), Hurricane Katrina	

*Source:* Data from NOAA (2006; 2010).

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However, most U.S. disasters are not of extraordinary magnitude, and many of the logistics problems faced in disasters are caused not by shortages of medical resources, but by failures to coordinate their distribution. The United States possesses an abundance of resources. Except in poor, rural areas, the United States experienced supply shortages in only 6 percent of hospitals involved in disasters and personnel shortages in 2 percent of them (Wright 1976).

The expanding U.S. population “has migrated to hazard-prone areas, and the way America builds too often invites disasters,” and “we’re building our communities in ways that aren’t compatible with the natural perils we have” (Miletti 1999).

Yet, Glantz and Qian Ye (2010) state that “most people don’t choose to live in hazardous places at high risk of climate, water, or weather extremes; usually, they do not have the financial means to avoid such conditions” (37) and that “at risk areas will likely increase in number as warming of the global atmosphere continues to go relatively unchecked” (45).

In the United States, our vulnerability is increasing.

- ◆ Domestically, “25–50 million people live in floodplains that have been developed as living and working environments; and by 2010, 60 percent of the U.S. population may be living within 50 miles of either the East or West coasts” (Landeman 2005).
- ◆ Thirty-nine U.S. states are seismically active, and at least 70 million people face significant risk of death or injury from earthquakes (Landeman 2005). In fact, from 1974 to 2003, 42 states had at least one earthquake with a magnitude of 3.5 or greater (USGS 2009).

The following socioeconomic factors can turn natural events into devastating catastrophes (Wirtz 2010, 35):

- ◆ Population growth
  - Our current population is 6.8 billion. According to UN forecasts, the population will climb to more than 9 billion by 2050.
- ◆ Settlement and industrialization of highly exposed regions
  - One-third of the world’s population live within 50 kilometers of the nearest coast.
- ◆ Concentration of population and values
  - The number of cities worldwide with more than 1 million inhabitants has risen from around 80 in 1950 to about 400 today, and more than 50 percent of the world’s population lives in cities. By 2030, it will be over 60 percent.
- ◆ Vulnerability of modern societies



- ◆ Rising insurance density and global networking
  - Climate change has led to a rise in extreme weather events.

## BUSINESS LOSS: A WAKE-UP CALL FOR HEALTHCARE

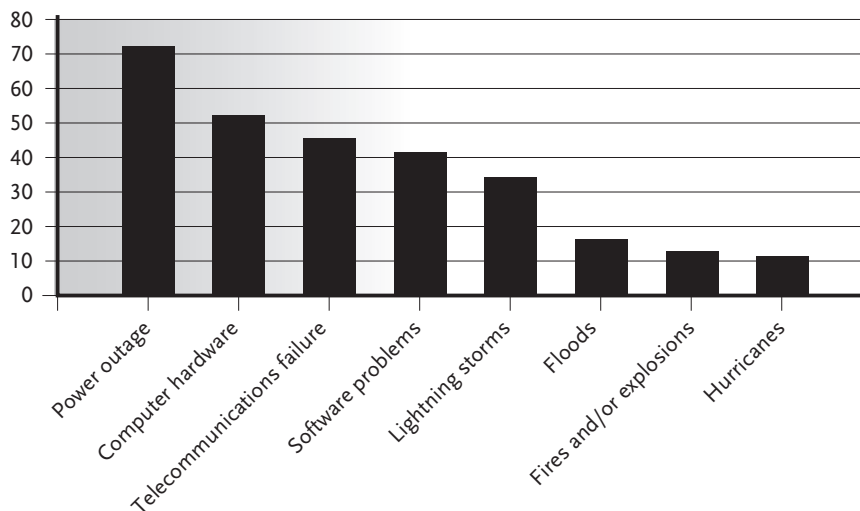
The insured share of total economic losses from weather-related catastrophes has increased from a negligible fraction in the 1950s to 24 percent in the last decade. The ratio has climbed more quickly in the United States, where more than 40 percent of the total disaster losses in the 1990s were insured. Disasters affecting healthcare and clinical practice come in all forms, and any disaster poses a risk to a community’s healthcare services.

Exhibit 1.5 illustrates the percentage of U.S. organizations that have experienced a significant business interruption as a result of a natural or man-made disaster; it also shows that man-made disasters are far more common than natural disasters. Exhibit 1.6 shows the global toll of natural disasters that occurred between 1980 and 2004.

The Insurance Services Office (ISO) defines a catastrophe as an event that causes \$24 million or more in insured property losses and affects a significant number of property/casualty policyholders and insurers. Catastrophe losses surged in 2008, reaching \$25.2 billion, the highest since the record \$62.5 billion reached in 2005,

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**Exhibit 1.5 Percentage of Businesses That Have Experienced Interruption**



Source: Adapted from Baum and McDaniel (2008). Data from Zinkewicz (2005).

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**Exhibit 1.6 Disaster Toll, 1980 to 2004**

Number of events	14,216
Deaths	1,049,006
Total property losses	\$1,825 billion
Insured property losses	\$374 billion

Source: Data from Munich Re (2010a).

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**Exhibit 1.7 Costliest Catastrophes in History**

<i>Month/Year</i>	<i>Peril</i>	<i>Insured Loss (in billions of dollars)</i>	<i>2007 Dollars Loss (in billions of dollars)</i>
August 2005	Hurricane Katrina	\$41.1*	\$43.6
August 1992	Hurricane Andrew	\$15.5	\$22.9
September 2001	World Trade Center and Pentagon attacks	\$18.8 (property claims only)	\$22.0
January 1994	Earthquake in Northridge, California	\$12.5	\$17.5
October 2005	Hurricane Wilma	\$10.3	\$10.9
August 2004	Hurricane Charley	\$7.5	\$8.2
September 2004	Hurricane Ivan	\$7.1	\$7.8
September 1989	Hurricane Hugo	\$4.2	\$7.0
September 2005	Hurricane Rita	\$5.6	\$6.0
September 2004	Hurricane Frances	\$4.6	\$5.0

\*The National Flood Insurance Program paid \$15.6 billion in Katrina claims, in addition to the \$40.6 billion paid by private insurers.

Source: ISO (2010).

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the year of hurricanes Katrina and Rita and the fourth costliest year in a decade. There were 37 catastrophes in 2008, the highest number of catastrophic events in a year since 1998 (ISO 2010).

The catastrophe definition continually changes. ISO's (2010) Property Claim Services (PCS) revealed that from 1949 to 1982, a catastrophe was an event with a \$1 million impact. From 1983 to 1996, the financial impact that defined an event as a catastrophe was \$5 million. PCS now defines catastrophes as events that cause \$25

million or more in direct insured losses to property and that affect a significant number of policyholders and insurers. And this number will most likely continue to increase. Exhibit 1.7 lists the costliest catastrophes that have occurred in the United States.

With 860 loss events due to natural hazards, the number of catastrophes documented in 2009 exceeded the previous year's 750 and the ten-year average of 770. The overall loss amounted to \$50 billion, with 17 events exceeding the \$1 billion threshold. The insurance industry incurred losses of \$22 billion.

Of all natural catastrophes worldwide in 2009, 93 percent were caused by atmospheric conditions and 7 percent by earthquakes and volcanic eruptions. The breakdown by continent shows that most of the events occurred in the Americas and Asia (300 events and 290 events, respectively) compared with just under 130 in Europe and roughly 70 each in Australia and Africa (Munich Re 2010b).

## **HOSPITAL AWARENESS OF INCREASING DISASTERS**

Although disasters are increasing in frequency and severity, the leading healthcare organizations in the United States often fail to treat this as a critical issue. The *2009 American Hospital Association Environmental Scan* “provides insight and information about market forces that have a high probability of affecting the health care field”; however, it does not mention emergencies, disasters, catastrophes, or any of the associated issues that have devastated hospitals and health delivery systems over the past decade. The most closely related item that made its list was advances in “vaccines for many infections that will be more effective and have fewer side effects.” Widely acknowledged or not, preparedness for disaster response has increasingly become a priority for hospital leaders (Center for Biosecurity of UPMC 2009).

### **Vulnerability to Disasters**

The trend toward increasing population densities and the progressive movement of these populations to disaster-prone flood plains, coastal regions at risk for hurricanes, areas with high seismic activity, and to communities constructed in areas vulnerable to wildland fires, means our potential for catastrophic disasters is increasing. (Auf der Heide 1996, 454)

Events since the 1980s and continuing threats have led to concerns about domestic terrorism. We have become more vulnerable to the risks posed by the manufacture, storage, and transportation of hazardous chemicals. Some of the largest civilian disasters in North America have been hazardous materials accidents.

Domestic civilian disasters are also characterized by a predominance of relatively low-severity injuries. “In a study of 29 U.S. major mass casualty incidents (MCIs), the Disaster Research Center found that less than 10 percent of the casualties had conditions that under ordinary circumstances would require overnight hospital admission. In actuality, about twice this number were admitted. For about half, it was more that they were involved in the disaster than because of the severity of their conditions” (Auf der Heide 1996, 455).

## Preparedness

The better prepared we are, the less likely we are to be traumatized when things go wrong and the quicker we can get back up on our feet and resume a normal life. (Flynn 2007)

Awareness of the risk of disasters is crucial, and preparing your organization and staff to function in these potential events is imperative.

Drs. Joe Barbera and Anthony MacIntyre are disaster experts and recognized leaders in this field. They write, “It is clear that hospital readiness remains uneven across the United States.” Without significant disaster experience, many hospitals remain unprepared for natural disasters. They may be even less ready to accept the care for patient surge from chemical or biological attacks, conventional or nuclear explosive detonations, unusual natural disasters, or novel infectious disease outbreaks. The researchers report that the following factors promote hospital preparedness (Barbera, Yeatts, and MacIntyre 2009):

- ◆ Funding
- ◆ Federal government focus and guidance
- ◆ Standards and regulations
- ◆ Experience with and examples of adverse outcomes from inadequate preparation
- ◆ Community standards for involving and supporting local hospitals (increasing recognition of the importance of hospitals as critical infrastructure and emergency response assets)

Other factors are obstacles to adequate preparedness. Medical economics limits hospital motivation for funding preparedness. Most businesses in general fail to perceive the disaster risk, and the federal focus on preparing for unexpected events is foreign to them. The business and legal risks of preparedness are also an issue. Developing a common hazard vulnerability analysis (HVA) may be seen as perilous in that it divulges information related to operational strengths and vulnerabilities

or other sensitive or proprietary information to rival organizations. Few legal precedents exist to establish clear answers to the many questions that arise. Finally, planning assumptions are based on conventional wisdom rather than on evidence or experience-based research. Hospitals expect an orderly distribution of casualties. They expect those casualties to be safe (noncontaminated) and to be transported by ambulance. And they expect prompt and comprehensive community service if the hospital is not compromised in any way, which is one of the most dangerous assumptions. However, in a disaster event, none of these assumptions is safe.

## Cost Versus Benefit

Since their evolution from a social services model to a business model, hospitals are expected to operate using modern business efficiencies and cost justification. Despite this evolution, the public and policymakers expect that hospitals will be fully prepared for any hazard and provide needed medical services in the case of a disaster. Although many hospitals are private sector assets, they are expected during disasters to serve an essentially public sector function. They are also expected to function as key facilities and to maintain services in spite of direct hazard impact on their facilities.

The financial and personnel time cost associated with emergency preparedness can be a major disincentive. Hospital executives may feel that focusing on preparedness produces few tangible benefits. Many prefer to use insurance as protection, rather than emergency preparedness, especially for low-likelihood hazards. “Experienced executives recognize that poor response to disasters can create enterprise-level risk that is not covered by insurance [and] ethical dilemmas and permit compromise of professional reputations” (Barbera, Yeatts, and MacIntrye 2009).

### The Hospital Preparedness Program (HPP)

In *Hospitals Rising to the Challenge: The First Five Years of the U.S. Hospital Preparedness Program and Priorities Going Forward* (Center for Biosecurity UPMC 2009), the assistant secretary for Preparedness and Response reports the following key findings:

- Disaster preparedness of individual hospitals has improved significantly throughout the country since the start of the Hospital Preparedness Program (HPP).
- The emergence of healthcare coalitions is creating a foundation of U.S. healthcare preparedness.

(continued)

- Healthcare planning for catastrophic emergencies is in its early stages; progress will require additional assistance and direction at the national level.
- Surge capacity and capability goals, assessment of training, and analysis of performance during actual events and realistic exercises are the most useful indicators for measuring preparedness.

Conclusions included the following:

- The HPP has improved the resilience of U.S. hospitals and communities and increased their capacity to respond to common medical disasters.
- The HPP should focus on building, strengthening, and linking healthcare coalitions to lay the foundation for a national disaster health and medical response system.
- Administrative adjustments to the HPP could improve the program's effectiveness and efficiency.
- To prepare the nation to respond to catastrophic emergencies, U.S. Department of Health and Human Services should provide continued leadership to states in their efforts to address the procedural, ethical, legal, and practical problems posed by a shift to disaster standards and alternate care facilities that is required when demand for care overwhelms available resources.
- Catastrophic emergency preparedness is a national security issue and requires the continued funding of the HPP.

The U.S. healthcare system is not currently capable of effectively responding to a sudden surge in demand for medical care that would occur during catastrophic events, such as those described in the Department of Homeland Security's (DHS) National Planning Scenarios. Emergencies of this magnitude would overwhelm the medical capabilities of communities, regions, or the entire country and require drastic departures from customary healthcare practices. Such a "phase shift" in the provision of care to disaster standards would be unlike anything that has ever been done in the U.S. (Center for Biosecurity UPMC 2009)

Prior to 2002, most hospitals did not have adequate plans to handle common medical disasters, much less catastrophic emergencies comparable to the National Planning Scenarios. Over the course of six years, the HPP has catalyzed significant improvements in hospital preparedness for common medical disasters. Hospitals have implemented communications systems, incident command system concepts, stockpiles of medicines and supplies, situational awareness tools, and memoranda of understanding (MOU) for sharing assets and staff during disasters. (Center for Biosecurity UPMC 2009)

Risk perception may be negatively affected by the traditional hazard vulnerability analysis (HVA). The Joint Commission requires all hospitals and

healthcare organizations to conduct an HVA, which ranks hazards in their order of priority, rather than developing an understanding of vulnerability elements that are much more amenable to achieving risk reduction. Preparing only for Armageddon-level threats may result in a sense of futility or complete apathy. (Barbera, Yeatts, and MacIntyre 2009)

## INCIDENT VERSUS EVENT

Are you preparing for an “incident” or an “event”? For the Oklahoma State Department of Health, these are two very different things (Ames 2009).

- ◆ An “incident” is any unplanned occurrence.
- ◆ An “event” is a planned occurrence.

Further confusing the terminology, the Department of Homeland Security (2008) states that an “incident”

- ◆ is an occurrence or event, natural or manmade, that requires a response to protect life or property
- ◆ and can include major disasters, emergencies, terrorist attacks, terrorist threats, civil unrest, wildland and urban fires, floods, hazardous materials spills, nuclear accidents, aircraft accidents, earthquakes, hurricanes, tornadoes, tropical storms, tsunamis, war-related disasters, public health and medical emergencies, and other occurrences requiring an emergency response.

## Public Health Terminology

The public health profession uses terminology in a different manner. Again, using Oklahoma as an example, a “catastrophic health emergency” is an occurrence of imminent threat of an illness or health condition that (Oklahoma Legislature 2003)

- ◆ is believed to be caused by any of the following:
  - a nuclear attack
  - bioterrorism
  - a chemical attack, or
  - appearance of a novel or previously controlled or eradicated infectious agent or biological toxin; and

- ◆ poses a high probability of any of the following harms:
  - a large number of deaths in the affected population,
  - a large number of serious or long-term disabilities in the affected population, or
  - widespread exposure to an infectious or toxic agent that poses a significant risk of substantial future harm to a large number of people in the affected population.

An executive order of the governor will declare a “state of catastrophic health emergency,” which activates disaster response and recovery aspects of the state, local, and interjurisdictional disaster emergency plans. During a state of emergency, the governor of Oklahoma may (Oklahoma Legislature 2003)

- ◆ suspend provisions of any regulatory statute prescribing procedures for conducting state business, orders, and rules of any state agency;
- ◆ use all available resources of state government and its political subdivisions;
- ◆ transfer direction, personnel, or functions of state departments and agencies to perform or facilitate response and recovery programs;
- ◆ mobilize all or part of the National Guard into services of the state;
- ◆ provide aid to and seek aid from other states (re interstate compact); and
- ◆ seek aid from the federal government.

Public health has primary jurisdiction over, responsibility for, and authority for

- ◆ planning and executing the catastrophic health emergency assessment, mitigation, preparedness, response, and recovery for the state;
- ◆ coordinating the catastrophic health emergency response between state and local authorities;
- ◆ collaborating with relevant federal government authorities, elected officials of other states, private organizations, or companies;
- ◆ coordinating recovery operations and mitigation initiatives; and
- ◆ organizing public information activities.