

**A REVIEW OF THE PUBLIC HEALTH AND MENTAL HEALTH ROLES IN  
RESPONSE TO COMMUNITY DISASTERS AND THE RATIONALE FOR  
EFFECTIVE INTERDISCIPLINARY COLLABORATIONS**

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Disasters vary in scope, size, and cause. Relevant public health aspects of disasters include community impact and the response of health professionals to alleviate stress and dangerous conditions surrounding the disaster. Public health focuses on the prevention of disease and the promotion of health. Disaster preparedness and response are significant areas in the field of public health. Disasters pose threats to the general public through increases in injury, death, and changes in infrastructure. The public health response to disaster includes assessments of the community impact, surveillance for disease, addressing sanitary health concerns, and providing information to the public. Mental health professionals also have important roles in responding to disaster in the community. In addition to physical aspects, disasters also may pose psychological risks to individuals and to the effected community. These risks may include stress, anxiety, and depression. Mental health workers provide counseling, support, and education to assist people affected by disaster in returning to their pre-disaster level of functioning. Traditionally there has been a separation between the disciplines of public health and mental health. Public health is population-based and mental health has been traditionally regarded being more individually based. During a disastrous event communication and organization among agencies is critical to an effective response. Increased collaborations between public health and mental health are needed to facilitate an appropriate and effective disaster response. Both areas aim to improve

overall health and well being, and therefore are inter-related. Each discipline needs to become more familiar with the nature of each other's work. Overall increases in public and mental health research, planning, training, and education programs are needed to understand and appreciate both the public health and mental health consequences of disaster and to improve community participation and preparedness.

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## **PREFACE**

I would like to thank my father, Alfred Russo for his support in my academic endeavors through the years and for instilling upon me the value of higher education. I would also like to thank Gail Cairns for being my thesis advisor, for the opportunity to have my first practical public health experience, and for being a talented professor that sparked my interest in emergency preparedness. Thank you to John Marx, my academic advisor, for all of the laughs and advice on my professional future. Finally, I would like to thank Edmund Ricci for his time and insights, and for participating in my thesis committee.

## **1.0 PRINCIPLES OF DISASTER**

### **1.1 DEFINING DISASTER**

The word “disaster” comes from the Latin word *astrum*, meaning star. Obviously, natural disasters are not a recent phenomenon. Those living in ancient times believed that earthquakes, volcanic eruptions, and other phenomenon were controlled by the heavens above. Today natural and other types of disasters may be out of our control in many ways, but we can have some degree of control over their effects.

Defining disaster can be problematic due to a lack of consensus among different organizations and disciplines that vary in their perceptions of it. Disaster can be defined in terms of destruction of available resources and overall catastrophic effects. In the United States the Robert T. Stafford Disaster Relief and Emergency Assistance Act provides authority for the federal government to respond to disasters and emergencies to provide assistance to save lives and protect public health, safety, and property. The Stafford act specifically defines a major disaster as “any natural catastrophe (including any hurricane, tornado, storm, high water, wind driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, or drought) or regardless of cause, any fire, flood or explosion, in any part of the United States, which by the determination of the President causes damage of sufficient severity and magnitude to warrant major disaster assistance under this chapter to supplement the efforts

and available resources of states, local governments, and disaster relief organizations in alleviating the damage, loss, hardship, or suffering caused thereby” (Stafford Act, 2000). Landesman (2005) defines disaster as “an emergency of such severity and magnitude that the resultant combination of deaths, injuries, illness, and property damage cannot be effectively managed with routine procedures or resources”. In some cases disasters are defined by what they do to people. Definitions of disaster may be based on the social, ecological, and community-based principles that characterize it. The World Health Organization (WHO) defines it as “a sudden ecologic phenomenon of sufficient magnitude to require external assistance.” The American College of Emergency Physicians classify disaster as “when the destructive effects of natural or man-made forces overwhelm the ability of a given area or community to meet the demand for health care.” Noji (1997) defines disaster as “the result of a vast ecological breakdown in the relationship between humans and their environment, a serious and sudden event (or slow, as in a drought) on such a scale that the stricken community needs extraordinary efforts to cope with it, often with outside help or international aid”.

## **1.2 TYPES OF DISASTERS**

Disasters are typically designated in the literature as being either natural or human-made. Disasters may be caused by natural or technological forces, or by mass violence. Natural disasters may include hurricanes, floods, earthquakes, and tsunamis. Technological disasters may include, for example, chemical spills or releases, transportation crashes, and industrial explosions. Mass violence is considered “an intentional violent criminal act, for which a formal investigation has been opened by the FBI or other law enforcement agency, that results in

physical, emotional, or psychological injury to a sufficiently large number of people as to significantly increase the burden of victim assistance for the responding jurisdiction” (DHHS, 2004). Mass violence may include terrorism or “disasters that result in widespread injuries, loss of life, and property damage that appear to be associated with especially high risk severe, lasting, and pervasive psychological effects” (Norris 2001). “Terrorism involves the illegal use or threatened use of violence, is intended to coerce societies or governments by inducing fear in their populations, and typically involves ideological and political motives” (Institute of Medicine 2003). To summarize, different types of disasters are presented in Table 1.

**Table 1. Classifications of disasters**

Classifications of Disasters	
I.	<p>Natural disasters</p> <ul style="list-style-type: none"> <li>A. Sudden impact or acute onset (e.g., geological and climatic hazards such as earthquakes, tsunamis, tornados, floods, tropical storms, hurricanes, cyclones, typhoons, volcanic eruptions, landslides, avalanches, wildfires). This category also includes epidemics of water, food, or vector borne diseases and person-to-person transmission of diseases.</li> <li>B. Slow or chronic-onset (e.g., drought, famine, environmental degradation, chronic exposure to toxic substances, desertification, deforestation, pest infestation [e.g., locusts])</li> </ul>
II.	<p>Disasters generated by people (human-generated)</p> <ul style="list-style-type: none"> <li>A. Industrial/technological (e.g., system failures/accidents, chemical/radiation, spillages, pollution, explosions, fires, terrorism)</li> <li>B. Transportation (vehicular)</li> <li>C. Deforestation</li> <li>D. Material shortages</li> <li>E. Complex emergencies (e.g., wars and civil strife, armed aggression, insurgency, and other actions resulting in displaced persons and refugees)</li> </ul>

Noji 1997

### **1.3 PHASES OF DISASTER**

Conceptual models of disaster may also include phases associated with a disaster. Derived from experiences of trained disaster mental health clinicians, The Phases of Disaster model, utilized by The National Center for Post-Traumatic Stress Disorder (NCPTSD) and other mental health responders, identifies four distinct phases in the larger context of disaster to help guide the mental health response to disaster. In disasters, relatively predictable patterns are usually present that occur from disaster onset through 18-36 months. These phases reflect the social complexity of disasters in communities, and highlight common characteristics at each phase. The heroic phase is characterized as the days following a disaster when initial rescue and recovery efforts occur. The community pulls together and outside resources are utilized in the honeymoon phase. During the disillusionment phase the reality of the impact of the event takes place, and finally the restabilization phase is when the community begins to return to the pre-disaster state. The phases of disaster are presented and summarized in Table 2.

**Table 2. Phases of Disaster**

**Phases of Disaster**

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**Heroic**

- Individuals and the community directing inordinate levels of energy into the activities of rescuing, helping, sheltering, emergency repair, and cleaning up
- Increased physiological arousal and behavioral activity
- Lasts from a few hours to a few days

**Honeymoon**

- Community and survivor optimism
- Influx of resources, national or worldwide media attention, and visiting VIPs who reassure them their community will be restored
- By 3<sup>rd</sup> week resources diminish, and media coverage lessens, and complexity of rebuilding becomes apparent
- Increased energy of community survivors diminishes and fatigue sets in

**Disillusionment**

- Fatigue, irritating experiences, and the knowledge of all that is required to restore their lives combine to produce disillusionment
- Complaints about betrayal, abandonment, lack of justice, bureaucratic red tape and incompetence are ubiquitous
- Symptoms related to post-traumatic stress intensify and hope diminishes

**Restabilization**

- Observable changes evident from groundwork of previous months
- Reconstruction phase begins to take place
- Majority of survivors attribute their increased appreciation of relationships and life and their confidence to manage difficult circumstances to the lessons learned from the disaster

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Adapted from NCPTSD 2006

## **1.4 FACTORS CONTRIBUTING TO INCREASES IN DISASTERS**

In the 1990's The Federal Emergency Management Agency (FEMA) declared 460 major disasters due to severe weather events and natural phenomenon. About \$1 billion is spent on disasters every week in the United States. Although the unpredictability of natural disasters may

be inevitable, the literature suggests other possible contributing factors. Myers & Wee (2005) attribute several factors that include: current climate cycles of increased weather extremes, increases in population and urbanization with more people living in high-risk areas, economic growth and technological advances, and increases in terrorist threats. A variety of other factors may contribute to increases in disaster trends. Noji (1997) identified major factors that contribute to disaster and severity that include: human vulnerability resulting from poverty and social inequality, environmental degradation resulting from poor land use, and rapid population growth, especially among the poor. “The increasingly sophisticated and technical physical infrastructure of human culture is similarly more vulnerable to destruction than were systems of habituation and culture built in past generations. The result is that today the damage from natural and technological disasters tends to be more and more extensive if proper precautions are not taken” (Noji, 1997).

## **1.5 CHARACTERISTICS OF DISASTER RESPONSE**

An effective public health disaster response requires an enormous amount of organizational communication and coordination among various agencies. Although each disaster may vary greatly in magnitude, common activities are likely to be present. Landesman (2005) discussed some common characteristics of a public health disaster response and some tasks that are likely to occur. A summary of these characteristics are represented in Table 3.

**Table 3. Common Characteristics of Disaster Response**

<b>COMMON CHARACTERISTICS OF DISASTER RESPONSE:</b>
<ul style="list-style-type: none"><li>• Inter-organizational coordination is critical</li><li>• Sharing information</li><li>• Resource management</li><li>• Warning and evacuation from danger</li><li>• Search and rescue</li><li>• Utilization of the mass media</li><li>• Triage for assigning priorities for treatment and transport of the injured</li><li>• Patient tracking</li><li>• Management of volunteers and donations</li><li>• Organized plan in response to disruption and unexpected problems</li></ul> <p>Derived from Landesman 2005</p>



## **2.0 PUBLIC HEALTH OBJECTIVES**

### **2.1 WHAT IS PUBLIC HEALTH**

The public health discipline is a broad field that concentrates on delivering community-based health. A strong emphasis is placed on prevention of disease and the promotion of health. Assuring the health and safety of the population as a whole is the main premise, and daunting task of public health. This vast and enormous task encompasses everything from assuring the safety of drinking water, reducing air pollution, promoting proper diet and exercise, surveillance and monitoring of disease outbreaks, and building coalitions and facilitating community based interventions. Often the public is unaware of what public health is or does except when there is a situation such as a disaster or epidemic in which the public is searching for information.

The purpose of public health according to The American Public Health Association (APHA, 2006) is “to prevent epidemics and the spread of disease, protect against environmental hazards, prevent injuries, promote and encourage health behaviors and mental health, respond to disasters and assist communities in recovery, and to assure the quality and accessibility of health services”. The mission of public health from The Association of Schools of Public Health (ASPH) is “to fulfill society’s interest in assuring conditions in which people can be healthy” (ASPH, 2006). The core functions of public health are: assessment and monitoring of the health of communities and populations at risk to identify health problems and priorities; formulating

public polices, in collaboration with community and government leaders, designed to solve identified local and national health problems and priorities; and assuring that all populations have access to appropriate and cost-effective care, including health promotion and disease prevention services, and evaluation of effectiveness of that care. (ASPH, 2006)

## **2.2 PUBLIC HEALTH DISCIPLINES**

The public health disciplinary divisions traditionally include epidemiology, biostatistics, environmental and occupational health, infectious disease and microbiology, health policy management, and behavioral and community health sciences. Epidemiology is critical in studying the etiology and causes of diseases through their distribution in the population. Biostatistics focuses on gathering, analyzing, and interpreting public health quantitative data through use of various mathematical methodologies and techniques. Environmental and occupational health is centered on identifying chemical, physical, and biological agents that affect health related to environmental and occupational exposure. Infectious disease and microbiology studies the control of infectious disease at cellular and molecular levels to develop an understanding of prevention and treatment of disease. Health policy management centers on knowledge and practice of health care policies and the organization and management of health care systems. Behavioral and community health sciences focus on aspects of public health that may include assessing community health needs, and the development and implementation of health programs and initiatives. Theory based health education and promotion programs are essential in the community. These areas may be different in focus and scope, but ultimately are

based on similar goals of promoting health and preventing disease. The ten essential public health services are presented in Table 4.

**Table 4. Ten Essential Public Health Services**

The Ten Essential Public Health Services
<ul style="list-style-type: none"><li>• Monitor health status to identify community health problems</li><li>• Diagnose and investigate health problems and health hazards in the community</li><li>• Inform, educate, and empower people about health issues</li><li>• Mobilize community partnerships to identify and solve health problems</li><li>• Develop policies and plans that support individual and community health efforts</li><li>• Enforce laws and regulations that protect health and ensure safety</li><li>• Link people to needed personal health services and assure the provision of health care when otherwise unavailable</li><li>• Assure a competent public health and personal health care workforce</li><li>• Evaluate effectiveness, accessibility, and quality of personal and population-based health services</li><li>• Research for new insights and innovative solutions to health problems</li></ul>
ASPH 1994

### **3.0 MENTAL HEALTH OBJECTIVES**

#### **3.1 DEFINITIONS AND GOALS OF PSYCHOLOGY**

Psychology is defined as “the scientific study of the behavior of individuals and their mental processes”. The ultimate goals of psychology are to describe, explain, predict, and control behavior. (Zimbardo & Gerrig, 1996) Psychologists seek to answer fundamental questions about human nature by studying internal processes of individuals and external forces in the physical and social environment.

The American Psychological Association (APA) is a scientific and professional organization that represents psychology in the United States and the largest association of psychologists worldwide. Psychology is the study of the mind and behavior. The discipline embraces all aspects of the human experience — from the functions of the brain to the actions of nations, from child development to care for the aged. In every conceivable setting from scientific research centers to mental health care services, "the understanding of behavior" is the enterprise of psychologists (APA, 2006). The mission statement from the APA is presented in Table 5.

### **Table 5. APA Objectives**

The Objectives of the American Psychological Association shall be to advance psychology as a science and profession and as a means of promoting health, education, and human welfare by:

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- the encouragement of psychology in all its branches in the broadest and most liberal manner
- the promotion of research in psychology and the improvement of research methods and conditions
- the improvement of the qualifications and usefulness of psychologists through high standards of ethics, conduct, education, and achievement
- the establishment and maintenance of the highest standards of professional ethics and conduct of the members of the association
- the increase and diffusion of psychological knowledge through meetings, professional contacts, reports, papers, discussions, and publications

thereby to advance scientific interests and inquiry, and the application of research findings to the promotion of health, education, and the public welfare.

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APA 2006

## **3.2 DIVISIONS OF PSYCHOLOGY**

In modern psychology, six approaches to the study that have a different view of human nature, determinants of behavior, focus of study, and research approaches include: biological, psychodynamic, behavioristic, humanistic, cognitive, and evolutionary. (Zimbardo & Gerrig, 1996) The biological approach focuses on the relationship between behavior and mechanisms in the brain. Psychodynamic principles study behavior in terms of instinctive forces, inner conflicts, and motivational factors that are conscious and unconscious. A behaviorist perspective views behavior as a determinant of external stimulus conditions. The humanistic view emphasizes individual capacity to make rational choices. Cognitive approaches focus on mental processes between stimulus input and initiation of a response. Evolutionary perspectives view behavior as an adaptation of survival in different environments.

Some major fields in psychology include: abnormal, clinical, developmental, social, and community. Abnormal psychology studies behavioral disorders in individuals. Clinical psychology focuses on diagnosis and treatment of mental disorders and conditions. Developmental psychology studies emotional, intellectual, and social changes that occur in human life spans. Social psychology studies the effect of social variables on individual behavior, attitudes, perceptions, and motives in groups and inter-group phenomena. Community psychology is concerned with person-environment interactions and the ways society impacts upon individual and community functioning by focusing on social issues, social institutions, and other settings that influence individuals, groups, and organizations.

## **4.0 THE PUBLIC HEALTH ROLE IN DISASTERS**

### **4.1 PUBLIC HEALTH DISCIPLINES IN DISASTER**

Specific roles for public health professionals in the event of a disaster can be demonstrated through its core disciplinary areas including epidemiology, environmental and occupational health, biostatistics, infectious disease and microbiology, behavioral and community health sciences, and health policy management. Public health professionals play vital roles in disaster response. Disasters cause increases in illness, injury, or death, changes in the healthcare infrastructure, and displacement of populations. Assessments are needed in order to evaluate the impacts of the disaster in the community, assure sanitary conditions including water and food safety, track disease, injury, and death, coordinate information between various groups and agencies, and disseminate information to the public. A summary of the rationale for a public health response to disaster is presented in Table 6.

### **Table 6. Disasters and Public Health**

Reasons Why Disasters are of Concern to Public Health:

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- They may cause an unexpected number of deaths, injuries, or illnesses in the affected community, exceeding the therapeutic capacities of the local health services and requiring external assistance.
  - Disasters may destroy local health infrastructure such as hospitals, which will therefore not be able to respond to the emergency.
  - Some disasters may have adverse effects on the environment and the population, increasing the potential risk for communicable diseases that will increase morbidity, premature death, and diminished quality of life in the future.
  - Disasters may affect the psychological and social behavior of the stricken community.
  - Some disasters may cause a shortage of food with severe nutritional consequences such as starvation or specific micronutrient deficiencies.
  - Disasters may cause large, spontaneous or organized population movements, often to areas where health services cannot cope with the new situation, thus leading an increase in morbidity and mortality.
- 

Noji 1997

Epidemiology detects patterns of occurrences in populations. Common patterns of morbidity and mortality may be apparent in the event of a disaster. Epidemiologists focus on predictable patterns and clusters of diseases and injury. “The overall objective of epidemiological investigations in disasters are to assess the needs of disaster-affected populations, match available resources to needs, prevent further adverse health effects, implement disease control strategies for well-defined problems, evaluate program effectiveness of disaster relief programs, permit better and contingency planning for various types of future disasters” (Noji, 1997; 2005). Knowledge of the causes of death, and types of injuries and illnesses that may be present is essential in the practical sense of making decisions about what types of relief supplies, equipment, and organizational personnel are needed. (Noji, 2005). (Landesman, 2005) also concludes that, “disaster epidemiology includes rapid needs assessment, disease control strategies, assessment of the availability and use of health services, surveillance



systems for both descriptive and analytic investigations of disease and injury, and research on risk factors contributing to disease, injury, or death”.

Critical public health interventions focus on environmental health issues concerning water, sanitation, hygiene, and vector management, and important environmental interventions are likely to be needed. (Noji, 2005). “Overcrowding and resulting poor water supplies and inadequate hygiene and sanitation are well known factors that are known to increase the incidence of diarrhea, respiratory infections, and other communicable diseases” (Noji, 2005) Vector control includes controlling mosquitoes, rats, flies, and fleas to protect the affected community. When water and sanitation services are disrupted and populations are rendered homeless, the long-term health risks can encompass a spectrum of illnesses. Among conditions known to be affected are chronic disorders such as diabetes, heart disease, and hypertension, nutritional deficiencies, communicable diseases, environmentally related illnesses (e.g., injuries and toxic exposures), and mental health disorders. (Noji, 1994) Environmental changes are of concern due to increases in disease vectors that may be present due to the environmental changes. Damaged or disrupted public water supplies, sewage systems, and power supplies should also be of concern to public health officials.

## **4.2 COMMUNITY NEEDS AND PUBLIC HEALTH**

Community needs assessment is an essential practice of public health professionals to evaluate and monitor the affected community. “Needs assessment must be tailored to the timing, size, and

impact of a specific disaster” (Landesman, 2005). The public health roles in needs assessment are presented in Table 7.

**Table 7. Public Health Risk and Needs Assessment in Disaster**

<b>Public Health Risk and Needs Assessment in Disaster:</b>
<ul style="list-style-type: none"><li>• Identify disaster-related hazards and associated vulnerability in a community</li><li>• Determine risk of public health needs likely to be created should such disasters occur</li><li>• Prioritize health needs based on information from community needs assessment</li><li>• Provide decision makers with objective information to guide prevention, mitigation, and response to disease</li><li>• Preventing or removal of hazard (i.e., closing down an aging industrial facility that cannot implement safety regulations)</li><li>• Moving those at risk away from the hazard (i.e., evacuating populations prior to impact of a hurricane, resettling communities away from flood-prone areas)</li><li>• Providing public information and education (i.e., providing information concerning measures that the public can take to protect themselves during a tornado)</li><li>• Establishing early warning systems (i.e., using satellite data about an approaching hurricane for public service announcements)</li><li>• Reducing the impact of the disaster (i.e., enforcing strict building regulations in an earthquake prone zone)</li><li>• Increasing local capacity to respond (i.e., coordinating a plan utilizing the resources of the entire health community, including health departments, hospitals, and home care agencies)</li></ul> <p>Taken from Landesman 2005</p>

Public health workers are also concerned with issues such as continuity of health care services, monitoring of environmental infrastructure, assessing needs of special populations, initiating injury prevention programs and surveillance, ensuring that the essential public health sector facilities are functional, and allocation of resources, while coordinating efforts with emergency management, local hospitals, and other health care providers. (Landesman, 2005) “The activities typically included in the realm of public health and health sector preparedness are response planning, personnel training, procurement of equipment and stockpiling of supplies with the requisite training, surge capacity enhancement, back-up systems for supplies and power, and the development of resilient and effective communication modalities”(Bissell et al, 2004).

### 4.3 PUBLIC HEALTH DISASTER INTERVENTIONS

The Centers for Disease Control and Prevention (CDC) is the lead agency in health surveillance to monitor the general population during disaster. A national system of centers for public health preparedness was implemented by the CDC in 1997. The basis for this system was to ensure the quality, effectiveness, and competency of public health workers to respond to current and emerging health threats. “Public health agencies must be concerned about the universal risk for disaster, the increase in natural disasters across the United States, the negative impact of disasters on public health, and the likely increase of actual and potential effects of manmade disasters” (Landesman, 2005). Public health interventions in disaster are listed in Table 8.

**Table 8. Public Health Interventions in Disaster**

Public Health Interventions in Disaster:
<ul style="list-style-type: none"><li>• Conduct needs assessment for affected communities, including a review of public health infrastructure</li><li>• Establish active and passive surveillance systems for deaths, illness, and injuries</li><li>• Educate the public about maintaining safe and adequate supplies of food and water</li><li>• Establish environmental controls</li><li>• Monitor infectious disease and make determinations about needed immunizations</li><li>• Institute multifaceted injury control programs</li><li>• Establish protective measures against potential disease vectors</li><li>• Monitor potential release of hazardous materials</li><li>• Assure evacuation plans for people with special needs in nursing homes, hospitals, and homecare</li><li>• Work with local communities to improve building codes</li></ul>
Taken from Landesman 2005

Disaster response is the responsibility of local governmental authorities. If needed additional resources may be requested. If local resources cannot manage the situation support

can be provided from surrounding jurisdictions, the state, and the federal government. In many cases the mayor or county executive alert the governor. The governor's office can deploy state health, public safety, and social services resources and make requests for a presidential disaster declaration. Many local areas have an emergency operation center (EOC) that organizes community responses to emergencies. Local departments of health and mental health are responsible for identifying and utilizing resources available in the community.

Communications represents an essential component of a public health disaster response. Public health workers communicate with a wide variety of agencies in the event of a disaster. "Public health officials should regularly communicate with elected officials about the likely impact of potential disasters for which the community is at risk and help develop policies and regulations that can prevent or reduce morbidity and mortality following disaster" (Landesman, 2005). This may include hospitals, community providers, social service agencies, first responders (fire, police, and Emergency Medical Services), local and federal officials, and dissemination of information to the general public. "To respond appropriately and effectively to the challenges and threats that disasters and their consequences pose to public health, everyone involved in the relief efforts-polymakers, disaster managers, resource coordinators, field workers, and the victims themselves-require timely and accurate information" (Noji, 1997). It is the task of the public health and emergency professionals in disaster to conduct environmental analysis, educating and motivating the public to prepare themselves, and communicate preparedness measures to the public before, during, and after an event (Institute of Medicine & National Research Counsel, 2005) "During crises, the public looks to politicians, public safety officials, and medical and public health professionals to provide assurance that all possible

actions are being taken to alleviate the effects of the disaster, and to recommend actions for individuals to take to ensure their safety” (Institute of Medicine & National Research Council, 2005).

The September 11<sup>th</sup> terrorist attacks killed 2801 people and exposed millions to psychological trauma and dangerous environmental pollution exposure. Klitzman and Freudenberg (2003) assessed the strengths and weaknesses of the public health, healthcare, and social services response to the event. The New York City Department of Health (DOH) focused on surveillance, maintenance of routine functions, and communications. Rapid assessments of attack related injuries, hospital needs, reporting system among rescue workers, and monitoring of symptoms associated with biological agents were conducted by the DOH. “One of the most striking lessons from the WTC attack was the extent to which it demanded routine health functions: safeguarding air quality, protecting workers, ensuring food safety, controlling pests, funding and providing the physical and mental health services that relieve acute distress, and offering creditable health information”(Klitzman & Freudenberg 2003).

## **5.0 THE MENTAL HEALTH ROLE IN DISASTERS**

### **5.1 GOALS OF DISASTER PSYCHIATRY**

In addition to the public health response to disaster, important psychological effects of a disaster are also relevant. “Disasters pose a variety of health risks, including physical injury, premature death, increased risk of communicable diseases, and psychological effects such as anxiety, neuroses, and depression” ( Institute of Medicine & National Research Counsel, 2005). “The goal of disaster mental health services is to mitigate disaster-related stress reactions and to assist persons and communities impacted by disaster to return as soon as possible to their pre-disaster level of functioning” (Myers & Wee, 2005). “Disaster Psychiatry consists of the professional application of mental health knowledge and expertise to the unique setting of disasters” (Garakani et al, 2004). Mental health professionals educate the public about common reactions to stress, coping mechanisms and strategies, and available resources. The goals of disaster psychiatry are presented in Table 9.

**Table 9. Goals of Disaster Psychiatry**

The goals of disaster psychiatry:

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1. To minimize the immediate emotional and psychological impact of disasters by means of education, support, and treatment (so-called psychological first aid)
  2. To assist people in returning to their pre-disaster level of functioning
  3. To view all people touched by disaster as potential beneficiaries of the gently applied expertise of mental health professionals, whether they are survivors, families, community leaders, disaster workers, or even other psychotherapists or psychiatrists
  4. To help identify people at risk for long-term mental health consequences of disaster
  5. To be available to treat these long-term mental health problems related to the disaster until the pre-disaster mental health system may establish resources to meet these needs
  6. To provide consultation on disasters and trauma to this system and, in cases where no such system existed before the event, assist in the development of one appropriate to local needs and resources
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Adapted from A. Garakeni et al. (2004)

## **5.2 MENTAL HEALTH RESPONDERS**

The prevalence of mild and moderate common mental health disorders in the general population is estimated to be 10%, and this could increase to 20% after a disaster. Severe mental health problems such as psychosis affect 2-3% of any given population and can increase 3-4% after a disaster. (WHO, 2005) “Mental health interventions in post-traumatic responses of victims following a disaster is designed to assist the victims in maximizing their coping and adaptation skills to effectively deal with multiple problems arising in the post-disaster situation” (DHHS, 1987). “The goals of psychiatric intervention are to minimize exposure to traumatic stressors; educate about the normal responses to trauma and disasters; provide consultations to other health care professionals and community leaders; advise people on when to seek professional treatment; assist in the resolution of acute symptomatology; reduce secondary morbidity; and identify those

who are at higher risk for the development of psychiatric disorders and to treat those who develop them”(Norwood et al, 2000).

In the event of a disaster many people do not seek appropriate assistance because of stigmatization of having a mental illness. “Disaster mental health services are primarily directed toward ‘normal’ people responding normally to an abnormal situation and to identify persons who are at risk for severe psychological or social impairment due to the shock of the disaster”(NCPTSD, 2006). Many people may be defensive and not seek help and it is the role of mental health professionals that are trained in appropriate interviewing and counseling techniques to reach those in need and respond appropriately. For this reason many mental health workers in an emergency setting are referred to as “human service workers” or “crisis counselors”. Disaster mental health workers must be proactive in their practice; they must go to the victims because they will not usually come to them. “The high psychological cost associated with stigma can discourage individuals from making internal attributions about the cause of their problems until dysfunctioning becomes extreme. Conveying an internal attribution about the distress while keeping the stigma attached to seeking help low is a difficult balance that outreach efforts must manage with care” (Yates et al, 1989) The majority of the work of mental health workers does not take place in a clinical setting and may occur at places such as shelters, schools, and community centers. Such settings may be loud and chaotic compared to traditional mental health settings. Recommendations of best practices in disastrous situations include not using terms that imply emotional disturbances such as therapy, counseling, psychological, and psychiatry. Terms that are encouraged include assisting, support, and talking. In cases of increased severity of a psychological response including severe depression and anxiety or



exacerbations of a previously diagnosed condition would be referred to appropriate professionals.

Mental health workers may provide assistance with the most basic needs following a disaster including food, shelter, clothing, medical assistance, and the location of loved ones. They also may make referrals to various resources such as loan assistance, employment, and permits. “Mental health professionals may assist with problem-solving and decision making. They can help them to identify specific concerns, set priorities, explore alternatives, seek out resources, and choose a plan of action” (Myers & Wee, 2005). Mental health workers also may provide more practical assistance after a disaster than in traditional psychological counseling generally, and may eventually assist with decisions and problem solving. “In a major disaster, effective mental health response requires the delivery of both clinical and administrative services in ways that differ from services typically offered by mental health professionals. The primary objective of disaster relief efforts is to restore community equilibrium. Disaster mental health services in particular, work toward restoring psychological and social functioning of individuals and the community, and limiting the occurrence and severity of adverse impacts of disaster-related mental health problems”( NCPTSD, 2006). Interventions require rapid assessment and triage compared to traditional mental health work. On average in a disaster setting, psychologists may spend about 10 minutes with a crisis victim. “Psychologists can be very helpful in a short amount of time by reaching out to the person, making themselves available in a very informal and casual manner, and simply talking with the person” (Aguilera & Planchon 1995). There is a shift in focus from disease to health in principles of disaster psychiatry. “Disaster mental health work requires a broad clinical background and specific knowledge of stress reactions, post-

traumatic stress disorder, crisis interventions, the nature of emergency work, stress management, and other intervention protocols appropriate to the disaster environment”(NCPTSD, 2006). Mobile crisis teams that may include psychiatrists, psychiatric nurses, and social workers provide short-term services during a critical incident. The mental health worker’s response is summarized in Table 10.

**Table 10. Mental Health Responder Goals**

<p>Mental Health Responder Goals</p> <ol style="list-style-type: none"><li>1) Promoting Safety and Security</li><li>2) Identify current priority needs, problems, and possible solutions</li><li>3) Assess functioning and coping</li><li>4) provide reassurance, normalization, psycho-education, and practical assistance</li></ol> <p>DHHS 2004</p>
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### **5.3 MENTAL HEALTH COLLABORATING AGENCIES**

Disaster mental health workers operate both at the community and individual level through collaborating with various agencies. Failure to collaborate with relevant agencies and their leadership may beget the second disaster of well-intentioned volunteers who in their enthusiasm and good will show up at a disaster scene and create more chaos than good (McQuiston & Katz,2002).

At the federal level, mental health services are organized by the Substance Abuse and Mental Health Services Administration (SAMHSA). SAMHSA, part of the Department of Health and Human Services (DHHS) assists in the assessment of mental health needs, provides training materials for disaster workers, and is a liaison with federal, state, and local mental health authorities. Part of SAMHSA, the Center for Mental Health Services (CMHS) and the Federal Emergency Management Agency FEMA developed the Crisis Counseling Assistance and Training Program (CCP) that provides states supplemental funding to states for short-term crisis counseling services. Services provided most frequently by the CCP include individual crisis counseling services, group crisis counseling services, education services, and referrals to other long term health services. (SAMSHA 2000) The National Institute of Mental Health (NIMH) focuses mainly on mental health support and research efforts after disasters. The American Psychiatric Association (APA) established The Task Force on Psychiatric Dimensions of Disaster in 1990 and The Disaster Psychiatry Committee in 1993. Their focus is to develop resources for those that have been exposed to disaster. Goals include patient advocacy, support, education, and career development in disaster psychiatry and to increase scientific awareness of psychiatric care form disaster victims (APA, 2006). APA was the first national mental health organization to sign a statement of understanding with the American Red Cross to provide health services to disaster victims and relief workers. The National Alliance for the Mentally Ill (NAMI) is the nation's largest grassroots mental health organization dedicated to improving the lives of persons living with serious mental illness and their families. They provide information, support, and referrals to those that are exposed to disaster (NAMI, 2006). The American Group Psychotherapy Association (AGPA) is dedicated to quality and standards of care through group therapy interventions after disasters. The International Society for Traumatic Stress Studies

(ISTSS) is an international multidisciplinary, professional membership organization that promotes advancement and exchange of knowledge about severe stress and trauma. This knowledge includes understanding the scope and consequences of traumatic exposure, preventing traumatic events and ameliorating their consequences, and advocating for the field of traumatic stress. Members include psychiatrists, psychologists, social workers, nurses, counselors, and researchers. (ISTSS, 2006). Another professional mental health organization is The International Critical Incident Stress Foundation. They are a nonprofit organization that provides support, education, and training based on the Critical Incident Stress Management (CISM) response. (ICISF, 2006). These interventions are applied to individuals, small and large groups, families, communities, and organizations.

#### **5.4 MENTAL HEALTH INTERVENTIONS**

Critical Incident Stress Management (CISM) is a technique used in a variety of disasters with the effected community and emergency responders themselves. CISM focuses on crisis and stress management through an integrated, multidimensional approach. “CISM may include, but is not limited to, the following: pre-incident education and preparation, continuing stress education, consultation to administrators and supervisors, significant-other support services, family support services, individual crisis intervention, peer counseling, on-scene support services, demobilization, crisis management briefing, defusing, critical incident stress debriefing (CISD), pastoral crisis intervention, follow-up, referral, research and development, and other services as required” (Myers & Wee, 2005).

The CODE-C Disaster Mental Health Service Model (CODE-C DMHSM) was developed after Hurricane Andrew in 1992. It is a comprehensive, integrated, multi-service model that has been used to plan, organize, and provide mental health services in communities after a disaster. It includes essential disaster mental health services that include needs assessment, consultation, outreach, debriefing, education, and crisis counseling. “The CODE-C DMHSM can be used as an important tool in designing disaster mental health services and programs following disasters as a tool for designing research and evaluation studies to examine the need, satisfaction with services, effectiveness, and impact of disaster mental health services” (Myers & Wee, 2005). Myers & Wee (2005) discuss core components of disaster mental health programs as presented in Table 11.

**Table 11. Core Components of Disaster Mental Health Programs**

Core Components of Disaster Mental Health Programs:

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1. Consultation
    - advice, education, training and assessment services to decision makers, managers, supervisors, and line workers
    - directed at solving problems involving policy, organization functioning, and service provision
  2. Outreach
    - provided to victims, survivors, disaster workers, and members of the community in their natural environment
    - important to reach as many people as possible
  3. Debriefings and Defusings
    - group crisis interventions
    - psycho-educational groups that address stress reactions by providing participants with opportunities to receive information on normal reactions by normal people to abnormal events and obtain information on coping strategies and recovery resources
  4. Education Services
    - provide information and training on topic specific to disaster psychology and mental health
    - may include workshops, presentations, conferences, written materials, and extensive use of the media to support individual, family, and community recovery
  5. Crisis counseling
    - brief interventions with people impacted by disasters
    - include crisis intervention, problem solving, and development of individual, family, and community support systems
- 

Myers & Wee 2005

On October 17, 1989 the Loma Prieta Earthquake rocked the San Francisco Bay area leaving widespread devastation, panic, and casualties in its path. The mental health response to this disaster serves as an example of mental health planning among large agencies. The American Red Cross, primarily involved in food, shelter, and clothing needs, in this example, was involved in unprecedented conjoint mental health planning with public agencies such as state and county mental health agencies and office of emergency services, and the private sector,

including the California Psychological Association (CPA). This process resulted in a sense of trust, mutual respect, and camaraderie among the representatives of these agencies. (Aguilera & Planchon 1995) The CPA responded in the next 3 days by training 350 psychologists and other mental health professionals in disaster principles, crisis intervention, and the management of post-traumatic stress. The effort included a media educational component, telephone hotline, and an outreach program to schools and businesses.

The 9/11 terrorist attacks affected the people of New York in a variety of ways. Terrorism has been defined as “an assault on the mental health and well-being of the public” (Klitzman & Freudenberg 2003). Leading the mental health response to the attacks was the New York City Department of Mental Health, Mental Retardation, and Alcoholism Services (DMH) providing crisis interventions to families of the fallen, survivors, workers, and the general public. LifeNet was a mental health hotline that provided telephone counseling. Project Liberty was created in 2001 to provide free supportive crisis counseling to individuals and groups affected by the attacks. The project’s overall goal was to alleviate the psychological distress that large numbers of New Yorkers experienced as a result of the World Trade Center disaster. The program did this by providing effective, community-based disaster mental health services to help individuals recover from their psychological distress and regain their pre-disaster level of functioning. To date, more than one million New Yorkers received free, anonymous, face-to-face counseling and public education services. More than 100 mental health providers, as well as many other community service organizations, participated in Project Liberty in New York City and the surrounding counties. (Project Liberty 2006)

## **6.0 DISASTER AS A SOCIAL PHENOMENON**

### **6.1 DISASTER AS A SOCIAL PROCESSES**

It has been estimated that approximately 69% of the U.S. population is exposed to disasters or individual traumatic events in their lifetime. (Fullerton et al., 2003) A disastrous situation may have different individual effects, but understanding the effects on communities as a whole becomes relevant to both public health and mental health. “Research on individual psychological functioning has its merits both theoretically and practically, yet concentration on individual realities of disasters in isolation from their social context risks oversimplification, if not distorting the phenomenon”. Natural disasters, technological catastrophes, and acts of mass terrorism are more than individual-level events; they are community-level events that bring harm, pain, and loss to large numbers of people simultaneously” (Kaniasty & Norris, 2004; 1999). Communities exposed to disasters experience multiple traumatic events including threat to life, loss of property, exposure to death, and often economic devastation. (Fullerton et al., 2003)

Erickson (1994) refers to collective trauma as “a blow to the basic tissues of social life that damages the bonds attaching people together and impairs the prevailing sense of communality”. “Human beings are surrounded by layers of trust, radiating out in concentric circles like ripples in a pond. The experience of trauma, at its worst, can mean not only a loss of



confidence in the self but a loss of confidence in the scaffolding of family and community, in structures of human government, in the larger logics by which humankind lives, and in the ways of nature itself” (Erickson, 1994). Public tragedies, it is clear, are more than simply traumatic events. A traumatic event becomes a public tragedy when there is a collective definition of that event as a significant calamity” (Doka, 2003). A public tragedy combines factors of scope, identification, social value of the victims, consequences, duration, causation, intentionality, predictability, preventability, and perception of suffering (Doka, 2003).

It is crucial that mental and public health workers to understand the social processes of a disaster so that they can appreciate that, “human behavior and social processes affect every stage of the ‘hazard chain’ from the post-disaster period through impact and recovery. (Tierney, 1989) “Disaster may be defined as a condition in which the established social life of a community or other type of social organization abruptly ceases to operate” (Form & Nosow, 1958). They also have been referred to as “collective stress situations that happen (or at least manifest themselves) relatively sudden in a particular geographic area, involve some degree of loss, interfere with the ongoing social life of the community, and are subject to human management” (Tierney, 1989). “Disasters, by definition are both traumatic, and overwhelm the available community resources, further threatening the individuals’ and community’s ability to cope” (Ursano et al, 1994). Examples of community-wide traumatic events are presented in Table 12.

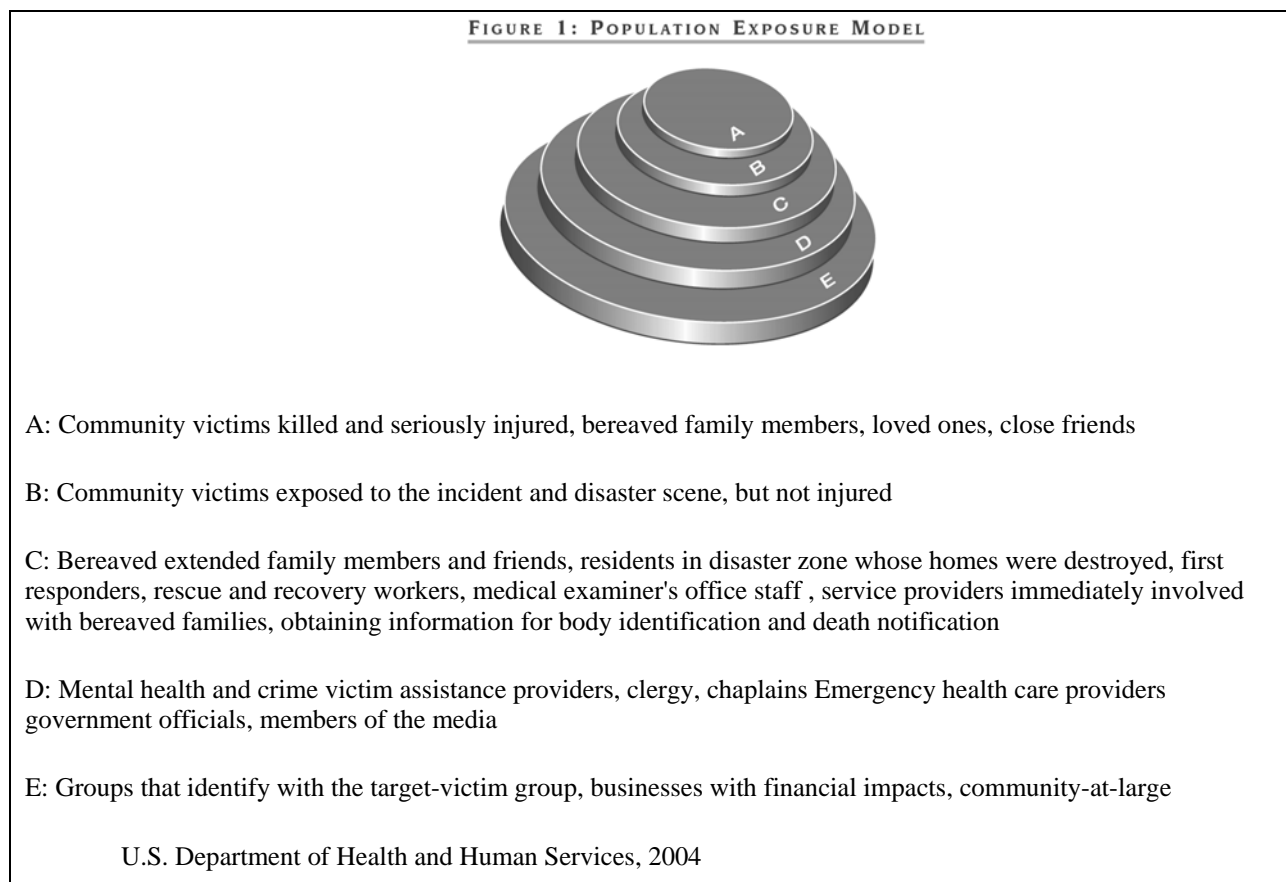
**Table 12. Community-Wide Traumatic Events**

Examples of Potentially Traumatic Community-Wide Events
<ul style="list-style-type: none"><li>• Natural disasters (earthquake, hurricane, fire, flood)</li><li>• Technological or human-caused disasters (environmental pollution, explosions)</li><li>• Health disasters (epidemics, famine)</li><li>• Multiple injury/fatality accidents</li><li>• Hostage situations</li><li>• Violence in the workplace</li><li>• Terrorism</li><li>• Riot, civil disturbance</li><li>• Child-related traumatic events</li><li>• Homicide or suicide</li><li>• High publicity crimes of violence, sex, or other unethical or illegal activity</li><li>• Organized traumatic events (layoffs, reorganizations, takeovers. Etc.)</li></ul> <p>Myers &amp; Wee 2005</p>

“By definition, community-wide stressors, such as natural and technological disasters and catastrophes, affect great numbers of people simultaneously, many of whom are members of one another’s support networks and are mutually dependent on one another’s coping efforts. Coping with community stressors such as disasters ultimately creates a shared ‘energy field’ wherein reactions and efforts of so many people inadvertently rub off on each other” (Kaniasty & Norris, 1999). Disasters are characterized by and persist when the relationships among its subsystems (such as the law enforcing agencies, the schools, the economic organizations, the churches, and the informal controlling agencies) break down. (Form & Nosow, 1958). “Disasters defy geographical, social, and cultural boundaries. Whether they strike predictably or unexpectedly, emerge slowly or suddenly, surround visibly or invisibly, disasters are processes that have dramatic consequences for individuals, families, neighborhoods, communities, and larger entities”. “Loss gain, breakdown, and recovery cannot be understood without consideration of

the collective reality at all levels: environmental, psychological, social, political, and cultural. Community reactions better of worsen individual reactions; individual reactions become shared reactions and define the collective identity of a coping community” (Kaniasty & Norris, 1999). “Population-based health care achieves maximum efficiency and effectiveness by combining an optimal mix of population-level versus individual-level interventions that are linked together using a public health approach involving passive and active health surveillance and efforts to bolster primary care delivery” (Engel et al, 2003). “While there are many definitions of terrorism and disaster, a common feature is that the event overwhelms local resources and threatens the function and safety of the community” (Fullerton et al., 2003). The population exposure model presented in Figure 1 represents community levels of exposure.

**Figure 1. Population Exposure Model**



Before many tragedies and events many community may have the mentality that “bad things don’t happen in my community, and the reality is that no community is safe from acts of violence or disaster. “The reality that any community is vulnerable to random acts of mass violence and terrorism penetrates a sense of security, the fabric of the social order. Community-based healing activities and rituals may reinforce community strengths and promote community recovery” (DHHS, 2004).

## **6.2 THEORETICAL BASIS FOR COMMUNITY DISASTER RESPONSE**

Tierney (1989) identified basic pattern and processes that recur during the emergency response period in disasters that include: intense community mobilization, increased community consensus, convergence-the movement of communities into the stricken area, and organizational adaptation and innovation. Freedy et al, (1992) proposed a model of disaster adjustment presented in Table 13.

**Table 13. Model of Disaster Adjustment**

Risk Factor Model of Disaster Adjustment

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Pre-disaster factors

- Demographic characteristics
- High-magnitude life events
- Low-magnitude life events
- Mental health history
- Coping behavior
- Social support

Within disaster factors

- Disaster exposure
- Cognitive appraisal of disaster exposure
  - Low control
  - Low predictability
  - High life threat

Post disaster factors

- Initial distress level
  - Stressful life events
  - Resource loss
  - Coping behavior
  - Social support
- 

Freedy et. al. 1992

DeWolfe (2000) describes a dose-response relationship between community devastation and psychological impact. When entire communities are destroyed, everything familiar becomes destroyed and survivors are disoriented at the most basic levels. “When some fabric of the community life is left intact (e.g., schools, churches, commercial areas), there is a foundation from which recovery can occur. Social support occurs more readily when community gathering places remain. Survivors are then more able to continue some of their familiar routines” (Myers & Wee, 2005).

### **6.3 COMMUNITY PREPAREDNESS AND DISASTER RESPONSE**

Preparedness is defined as “the set of measures that ensure the organized mobilization of personnel, funds, equipment, and supplies within a safe environment for effective relief” (WHO, 2003). “The development of community disaster plans, of medical intervention and prevention plans to address the psychological responses to trauma, and the training of leaders in the stresses and resources of traumatic events can greatly help individuals and their communities” (Ursano et al, 1994). “A key feature of disasters is that they create a very high demand for a range of activities (e.g. life-saving, medical care, the provision of social support, debris removal) that exceeds the community’s normal response capacity. Under such high levels of social system stress, system subunits-organizations, groups, and individuals-must adapt” (Tierney, 1989). Tierney (1989) identified factors that can influence the community emergency response that include: disaster experience, pre-disaster preparedness, and agent characteristics. Community and workplace leaders can facilitate early return to usual work routines and other roles to maximize productivity. The availability of town hall meetings to address community concerns provide forums for community leaders to disseminate information and to learn about disaster related issues, and for affected community members to articulate their needs” (Engel et al, 2003).

“Improving response to natural and human disasters is a core component of any resilient and sustainable community and public health agencies around the globe. In order to be able to respond to emergencies caused by hazards, communities must prepare to do so by decreasing community vulnerability, developing response plans, and providing training and emergency equipment prior to the onset of a hazardous event”(Bissell et. al 2004). “Communities facing a bioterrorist attack will inevitably experience fear, dread, and confusion. However data supports

that such communities can be expected to mobilize coping resources, show increased levels of cohesion, commitment, and identification with their families and groups. The mobilization of these positive responses of altruism and commitment can provide important resources for community response” (Ursano et al, 2004)

(Bolin and Bolton 1986) define collective trauma as “a blow to the basic tissues of social life that damages the bonds attaching people together and impairs the prevailing sense of community”. “Disaster preparedness and response is in some respects a political issue, in some areas an issue of resource management, in yet other aspects a collection of issues in organization development. The ability of community systems, both formal and informal, to cope with each phase of disaster response exerts a substantial influence on the capacity of their constituents to achieve productive resolutions” (Gist & Lubin, 1989).

#### **6.4 EXAMPLES OF DISASTERS IN THE COMMUNITY**

On February 26, 1973 the Buffalo Creek flood devastated the homes of 5,000 people of a West Virginia mountain community killing 125 and leaving 4000 homeless. Kai Erickson was a sociologist that studied the effects of the Buffalo Creek flood on the local community members. Erickson discusses in great detail the notions of “communality”, and how the flood devastated the community as a whole. “In places like Buffalo Creek, the community in general can be described as the locus for activities that are normally regarded as the exclusive property of individuals. It is the community that cushions pain, the community that provides a context for intimacy, the community that represents morality and serves the repository for old traditions”

(Erickson, 1976). “What happened at Buffalo Creek, then, can serve as a reminder that the preservation (or restoration) of communal forms of life must become a lasting concern, not only for those charged with healing the wounds of acute disaster, but for those charged with planning a truly human future” (Erickson, 1976).

Hurricane Katrina hit the gulf coast on August 29, 2005. It devastated communities in Mississippi, Alabama, and Louisiana killing over 1,300 people marking it the most destructive natural disaster in American history. Much of the focus was on New Orleans which was the largest affected city after breaches in the 350 mile levee system resulted in massive flooding. Disappointment toward the poor response of the local, state, and federal officials to respond effectively was felt by the community and the whole nation watching the events unfold on television on a daily basis. Serious flaws in the response were highlighted and brought to the attention of the government. A catastrophic event such as Katrina should serve as an example of the importance of preparedness at local, state, and federal levels to effectively respond to a crisis.

## **6.5 COMMUNITY DISASTER INTERVENTIONS**

The American Red Cross, established in 1881, is the only voluntary organization that serves a primary function in the federal response plan. The American Red Cross is involved in mass care services that include providing shelter, food, emergency first aid, disaster welfare information, emergency relief items, providing information about available health resources, and the coordination of casualty and patient information (DHS, 2003). In 1989 The Red Cross Disaster Mental Health Services program was developed to help victims cope with the devastating stress



in the event of disaster. Many jurisdictions have separated public health and healthcare systems making it difficult to communicate and connect people with the services that they need. Table 14 describes components of community action plan in the event of a disaster.

**Table 14. Public Health action Plan**

<b>Components of a Public Health Action Plan for Community Needs in a Disaster</b>
<ul style="list-style-type: none"> <li>• Ensuring continuity of health care services (acute emergency care, continuity of care, primary care, and preventive care)</li> <li>• Monitoring environmental infrastructure (water, sanitation, and vector control)</li> <li>• Assessing the needs of the elderly and other special populations</li> <li>• Initiating injury prevention programs and surveillance</li> <li>• Ensuring that essential public health sector facilities will be able to function post-impact (hospitals, health departments, physicians' offices, storage sites for health care supplies, dispatch centers, paging services, and ambulance stations)</li> <li>• Allocating resources to ensure that the above responsibilities can be accomplished</li> </ul>
<p>Taken from Landesman, 2005</p>

The Oklahoma City terrorist bombing on April 19, 1995 killed 168 people and injured 853 people. A community mental health response was coordinated by the Oklahoma Department of Mental Health and Substance Abuse Services (ODMHAS), which initiated The Project Heartland program in response to the effected community. Commencing on May 15, 1995 it was the first community mental health program geared to intervene in the short to medium term

among survivors of a terrorist event. The goal of the project was “to provide crisis counseling, support groups, outreach, and education for individuals affected by the bombing” (Call & Pfefferbaum, 1999).

“Terrorists strive to influence the behavior of social groups (e.g. families, religious groups, communities, nations) by frightening or terrifying the social groups and their leaders” (Holloway & Waldrep 2004) Human-made and natural disasters can both pose an immediate threat and likelihood of continued devastation. “Residents who are victimized by technological disasters may have their stress exacerbated by knowing that their tragedy was caused by other human beings. Technological disasters of the same magnitude as natural disasters generally cause more severe mental health problems because it is harder in the former to achieve psychological resolution and to move on” (Landesman, 2005). “Victims of technological disasters often feel a great deal of uncertainty about the risks of exposure and long-term risks. Because of this ambiguity and uncertainty, neighbors can become bitterly divided, and their support networks may be irreversibly damaged. Worse, residents of affected communities can be stigmatized by society due to the unknown risks of their exposure” (Landesman, 2005). “Group treatment is especially appropriate for survivors of mass victimization because groups provide social support through validation and normalization of thoughts, emotions, and post-trauma symptoms (DHHS, 2004).

Community Outreach involves 1) Initiating supportive and helpful contact at sites where survivors are gathered; 2) Reaching out to survivors through the media, the Internet, and 24-hour telephone hotlines with responders that speak different languages; 3) Participating in or conducting meetings for natural pre-existing groups through religious organizations, schools, employers, community centers, and other organizations; 4) Providing psycho-educational

resource and referral information to health care and human service providers, police and fire personnel, and other local community workers (DHHS, 2004).

Community health assessments are important tools to understand what is happening in a community in any given time and to prepare and plan for the future. Community assessments focus on local assets, resources, and activities. They may also bring into focus gaps, barriers, and emerging needs in a community. Needs assessment requires one to gather information about communities of interest and determine particular areas of focus based on community needs. Different models of community intervention are discussed by (Rothman 2001). The locality development, social planning, and the social action approaches are recognized models of community intervention. The locality development is a process oriented approach which proposes that community development and change takes place at the community level, in which the goal is to build capacity. Individual trauma is critical because many people react differently in certain circumstances. However, many communities share common reactions to disaster and trauma. “The most appropriate post-disaster intervention may be one that aims to build the community’s capacity to make informed choices, while recognizing that those choices and responsibility for recovery remain the community’s own” (Kaniasty & Norris, 2004). Recommendations for community interventions are demonstrated in Table 15.

**Table 15. Community Focused Interventions**

**Community-focused interventions** for enhancing social resources will vary depending upon the disaster, the setting, and the culture. General recommendations are as follows:

- 1) Collective grieving expresses solidarity and facilitates unity and collective action.
- 2) Keep people in their natural groups if they must be relocated.
- 3) Provide social activities for new communities formed because of displacement, especially if natural groups have not been retained.
- 4) Group meetings, in which participants brainstorm about various themes for rebuilding the community, help survivors to recognize the reality of loss, to identify and discuss local problems, and to work together towards an achievable, specific goal.
- 5) By emphasizing inclusiveness, the above activities must reach out to people who might feel isolated or marginalized. Community members also might canvas the community to learn of others' needs.

Taken from Norris et al (2001)

“Collectively too, public tragedy can strengthen even as it injures. There may be a new collective unity and sense of purpose. In time, tragedies may lead to collective actions that create new policies and change the social order” (Doka, 2003). “Traumatized individuals find extraordinary comfort by identification with the community at large and will even shun individual interventions that make them feels as if they are ‘weaker’ than those experiencing similar trauma. The professional’s challenge is to stimulate the natural healing processes set into motion by mass group identification by a variety of interventions” (Austin, 1992). Austin (1992) identified goals for large-group debriefings as presented in Table 16.

**Table 16. Goals for Large Group Debriefings**

Goals of Large-Group Debriefings:
<ul style="list-style-type: none"><li>• Promote a healing identification with the power and courage of the community at large by emphasizing that the entire community is in the process of recovery</li><li>• To normalize emotions that interventions are experiencing and to provide a vocabulary for expressing their feelings to each other (reducing the sense of isolation and helplessness that victims may feel)</li><li>• To teach the audience simple self-help measures that can be used to relieve stress</li><li>• To educate the audience about when emotional responses may become destructive and professional help is indicated</li></ul>
Taken from (Austin, 1992)

“Large group interventions may often be the treatment of choice and the professional should, at the community level, attempt to enhance the individual’s natural identification with the healing forces within the community” (Austin, 1992). “Disaster recovery services are best accepted and utilized if they are integrated into existing, trusted community agencies and resources. In addition, programs are most effective if workers indigenous to the community and to its various ethnic and cultural groups are integrally involved in service delivery” (Myers & Wee, 2005). “Mental health staff needs to use an active outreach approach. They must go out to community sites where survivors are involved in the activities of their daily lives. Such places include impacted neighborhoods, schools, disaster shelters, service centers, family assistance centers, respite centers for workers, meal sites, hospitals, churches, community centers, and memorial services” (Myers & Wee, 2005). “Community organization brings community members together to deal with concrete issues of concern to them. Such issues may include social policy in disaster reconstruction or disaster preparedness at the neighborhood level. The process can assist survivors with recovery by not only helping with concrete problems but by reestablishing feelings of control, competence, self-confidence, and effectiveness. Perhaps most important, it can help to reestablish social bonds and support networks that have been fractured

by the disaster” (Myers & Wee, 2005). “Support groups for disaster survivors are one of the most powerful and effective interventions available to post disaster crisis counselors. Support groups provide a positive, warm, supportive, and helping environment for disaster survivors during the lengthy, emotional, and stressful process of physical and psychological recovery” (Myers & Wee, 2005).

Over time anger may emerge in the community. “Typically there is a focus on accountability, as search for someone who was responsible for a lack or preparation or inadequate response. Mayors, police, fire chiefs, and other community members are often targets of these strong feelings” (Norwood et al, 2000). “Distribution of institutionalized relief can become a political issue and vividly expose and add to pre-existing social inequalities along the lines of ethnicity, race, or socio-economic status” (Kaniasty & Norris, 2004). Cultural competency is an important aspect among response personnel. There needs to be cultural sensitivity with respect to the specific population that one is dealing with. Community leaders of effected populations should be consulted with before intervening in the community.

## **7.0 PUBLIC HEALTH AND MENTAL HEALTH RELATIONSHIP**

### **7.1 HISTORICAL BASIS FOR SEPARATION**

Throughout the 20<sup>th</sup> C growing tensions have been noted between public health and medicine. “Although representatives of both fields have traditionally voiced strong commitments to health and social betterment, the relationship between public health and medicine has been characterized by critical tensions, covert hostilities, and at times open warfare” (Brandt & Gardner, 2000). Public health has come to be associated with the prevention and medicine with the cure. Public health has also traditionally been chastised for its broad nature and lack of scientific theory and skills that requires certification such as medicine. Presently public health has still maintained its essential goals and objectives and has an interactive relationship with medicine through new scientific breakthroughs. The relationship between public health and mental health has also traditionally had a similar division. Historically mental health evolved as a specialty independent of the public health field which evolved from improvements in bacteriology, health sanitary measures, hygiene, and preventative medicine. The primary focus of public health is on the entire population, whereas mental health’s focus has traditionally been more geared toward individuals and small groups. Mental health emphasizes specific diagnosis and treatment for individual patients, public health emphasizes community prevention and health promotion. The WHO defines health as: “a state of complete physical, mental, and economic well-being and not merely the absence of disease and infirmity”. “The

interdisciplinary relationship between public health and mental health is supported by the fact that the public's health is rooted in both physical and psychological well-being" (Institute of Medicine 2003). "The separation of psychological and physical health services systems is not consistent with this notion of the combined determinants of health. Health is of primary importance to any society because many aspects of human potential such as employment, social relationships, and political participation are contingent upon it" (Institute of Medicine 2003).

## **7.2 RATIONALE FOR INCREASED COORDINATION**

"The nation's mental health, public health, and medical and emergency response systems currently are not able to meet the psychological needs that result from terrorism. Gaps exist in the coordination of agencies and services, training and supervision of professionals, public communication and dissemination of information, financing, and knowledge- and evidence-based services" (Institute of Medicine 2003). "During recent disasters in the United States, responders have encountered numerous problems, including confusion over the jurisdiction responsible for coordinating the response effort; and in ability to communicate the vulnerabilities and risks before, during, and after the crisis; difficulties in getting responders to the disaster site while moving victims away from it; and problems distributing essential resources among those who need it most" (Institute of Medicine & National Research Council, 2005).



Collaboration between mental health and public health would include making associations among individuals and groups through support groups, community organizations, and other appropriate outreach programs. The coordination of a disaster response requires communication and coordination among local municipalities, county, state, and federal municipalities. Local authority has control over the site of a disaster and the appropriate response. The local departments of health and mental health must coordinate the available community resources in the best interests of the physical, social, and psychosocial health of the community. “Without coordination between various agencies, groups, and organizations, there would be no way to monitor the level and quality of care, assess skills and credentials of those wishing to help, or share information about the many needs and areas where services could be best provided without getting into territorial or political battles, or duplicating efforts”(Bowenkamp 2000). “In preparedness activities, public health professionals must participate as part of a multi-agency team, some members of which have little or no knowledge of public health. Public health and other human service departments (aging, disability, mental health, etc.) are often organized as separate governmental units. As such, careful advance coordination of preparedness efforts is an essential part of community planning. Further, public health practitioners must work with multiple bureaucratic layers of infrastructure in a condensed time frame and interact with personnel with whom they normally do not have contact and whose lexicon and methods may be different” (Landesman, 2005). “Preplanning, training on response protocols, and pre-establishing relationships and channels of communication are essential for effective integration of mental health services into the overall emergency response” (DHHS, 2004).

### **7.3 PUBLIC AND MENTAL HEALTH COLLABORATION**

In the beginning of the AIDS epidemic, public health professionals began to realize that more knowledge was needed in the field of substance abuse treatment to improve their response. Currently in public health, more understanding is needed on the mental health aspects of disaster. In order to provide appropriate responses to disaster, support and collaborations between public health and mental health are needed.

The National Association of County and City Health Officials (NACCHO) works “to support efforts that protect and improve the health of all people and all communities by promoting national policy, developing resources and programs, and supporting effective local public health practices and systems”. The National Mental Health Association (NMHA) is the oldest and largest non-profit mental health and mental illness organization in the United States whose mission is “to improve the mental health of all Americans, especially the 54 million people with mental disorders, through advocacy, education, research, and service”. In April 2004 both groups came together to discuss encouraging understanding of and collaborations between mental and public health issues. This meeting marked an unprecedented moment in bringing the two disciplines together for the first time. In order to develop a “comprehensive and holistic public health care system” the integration and collaboration of public health and mental health is needed. “There is a growing recognition that the historical separation between mental health and public health is an artificial one that threatens the health and well being of individuals, families, and communities. A strong partnership between mental health and public health will enhance the individual goals of each profession while accomplishing the overarching mission of improving the public’s health” (NACCHO, 2005). This is evidence for a promising

start but it is a difficult task to undertake. It would be important to recognize that a partnership would be most beneficial to include emergency and disaster response situations to the wide ranges of services that encompass mental and public health. The numbers of deaths and injuries can be reduced through greater community awareness of natural hazards and improved national, regional, and local preplanning for disasters. The network of medical and public health professionals in any country constitutes an excellent channel through which information about disaster prevention and mitigation can be disseminated to people living in even the most remote areas. We now need to explore ways in which emergency preparedness and disaster prevention strategies can be integrated more effectively into ongoing health activities at the national, regional, and community levels (Noji, 1994).

## **8.0 FUTURE RECCOMENDATIONS**

In terms of public health and mental health, increases in collaborative research, planning, training, and education are crucial to an appropriate disaster response. Increased funding and support to adapt public health and mental health intervention plans and increases in community participation at community state, and national levels are needed. Clarity of roles and responsibilities for mental and public health professionals would assist in the knowledge of the very nature of each other's work. Increases in communication and collaboration between disciplines and sharing the knowledge and lessons learned from previous responses, drills, and activities would also be relevant. Developing organized plans of community preparedness that involve community leaders, churches, organizations, and community members to increase community capacity. Studies of theory, research, and practice of disaster public health and mental health principles are relatively in its infancy compared to other disciplines. The need for more research and funding in this area continues to be an important aspect of understanding the public health and mental health consequences of disasters.

### **8.1 STATE AND LOCAL RECOMMENDATIONS**

Since the main roles and responsibilities in disaster are at the state and local levels it is important to specifically address disaster and preparedness recommendations at this level. Federal plans

may outline specific guidelines and recommendations but, local jurisdictions need to be aware of their resources and have specific plans of action in a disaster or emergency. At the local level various agencies included in the response such as the health departments, hospitals, department of human services, and other relevant agencies need to have a clear understanding of what their available resources are. These agencies need to get together and share new ideas and discuss lessons learned from past experiences. Trainings, table top discussions, and updates on disaster plans and protocols should occur on a regular basis. Any response to a disaster or emergency must be a coordinated community effort.

## **APPENDIX A. ASSUMPTIONS OF THE FEDERAL RESPONSE PLAN**

### Assumptions of the Federal Response Plan:

1. A major disaster or emergency will cause numerous fatalities and injuries, property loss, and disruption of normal life-support systems, and will have an impact on the regional economic, physical, and social infrastructures.
2. The extent of casualties and damage will reflect factors such as the time of occurrence, severity of impact, weather conditions, population density, building construction, and the possible triggering of secondary events such as fires and floods.
3. The large number of casualties, heavy damage to buildings and basic infrastructure, and disruption of essential public services will overwhelm the capabilities of the state and its local governments to meet the needs of the situation, and the President will declare a major disaster or emergency.
4. Federal agencies will need to respond on short notice to provide timely and effective assistance.
5. The degree of federal involvement will be related to the severity and magnitude of the event as well as the state and local need for external support. The most devastating disasters may require the full range of federal response and recovery assistance. Less damaging disasters may require only partial federal response and recovery assistance. Some disasters may only require federal recovery assistance.

FEMA, 2000

## APPENDIX B. PUBLIC HEALTH ROLES IN DISASTER RESPONSE

### Public Health Roles and Responsibilities in Disaster Preparedness and Response:

- Identify community resources applicable to the physical, social, and psychosocial effects of disaster
- Identify groups most at risk from disaster (i.e., children, older adults, homeless, chronically ill, homebound, physically or mentally disabled)
- Provide disaster education in both advance of (i.e., what to expect in a disaster) and after (i.e., how to deal with the effects) event
- Take responsibility for the health of a community following a disaster
- Use such resources as assessment, epidemiology, and data analysis to make and implement recommendations for limiting morbidity and mortality following disaster
- Cooperate and collaborate with the broadest range of community agencies to ensure to ensure that primary health, public health, mental health, and social impacts are adequately addressed in disaster planning
- Prevent disease by providing health advisories on injury prevention, food and water safety, and vector control
- Assure that health services continue post impact, including acute care, continuity of care, primary care, and emergency care
- Inspect American Red Cross shelters and feeding operations
- Request volunteers from the American Red Cross to supplement medical and nursing needs
- Communicate with government officials about the public health effects of potential disasters and provide expert assistance during and after disasters
- Develop and advocate public policies designed to reduce the public health impact of potential disasters
- Collaborate with other health and human service professionals to rigorously evaluate intervention outcome

Landesman 2005

## APPENDIX C. ORGANIZATIONAL ROLES IN DISASTER RESPONSE

### Organizational Roles of Public Health Management in Disaster Response:

- Participate with other professionals who engage in emergency preparedness and response
- Activate public health emergency operations centers (EOC) and participate in community-wide EOC
- Assess medical, public health, and mental health needs, prepare recommendations on clinical aspects of emergency, and assure provision of services
- Assess viability of health care infrastructure
- Conduct health surveillance, detect, identify, and verify individual cases through laboratory sciences, and institute measures to control infectious disease
- Provide expert assistance in responding to chemical, radiological, or biological hazards
- Staff public health clinics involved in emergency
- Supplement clinical back-up to school health program sheltering activities
- Assure portable water supply, food safety, and sanitation
- Assure worker safety
- Educate about vector control and implement appropriate measures
- Provide public health information
- Work with voluntary organizations (i.e., American Red Cross) to provide emergency shelter
- Identify victims and manage corpses
- Be able to respond 24 hours a day, 7 days a week
- Coordinate with other sectors on long-term consequence management

Taken from Landesman 2005



## APPENDIX D. PUBLIC HEALTH EMERGENCY RESPONSE

### On Going Public Health Emergency Response Functions and Tasks:

- ✓ Environmental hazard identification
- ✓ Hazards consultation
- ✓ Epidemiological services
- ✓ Health and medical needs assessment
- ✓ Identification of affected individuals
- ✓ Contamination control
- ✓ Health surveillance
- ✓ Laboratory specimen collection and analysis
- ✓ Infectious disease identification, treatment, and control
- ✓ Quarantine/isolation
- ✓ Public health information
- ✓ Risk communication
- ✓ Responder safety and health
- ✓ Health and medical personnel resources
- ✓ Health and medical equipment safety and availability
- ✓ Health-related volunteer and donation coordination
- ✓ Vector control
- ✓ Wastewater and solid-waste disposal
- ✓ Continuity of public health programs services, and infrastructure
- ✓ Food safety
- ✓ Veterinary services
- ✓ Animal rescue/control/shelters

- ✓ In-hospital care
- ✓ Evacuation
- ✓ Sheltering
- ✓ Special populations needs and assistance
- ✓ Mass trauma
- ✓ Mass fatalities
- ✓ Mortuary services
- ✓ Mental/behavioral health care and social services
- ✓ Potable water

CDC Public Health Emergency Response Guide

## **APPENDIX E. KEY CONCEPTS TO DISASTER MENTAL HEALTH**

### Key Concepts to Disaster Mental Health:

1. No one who sees a disaster is left untouched by it
2. There are two types of disaster trauma
  - a) Individual trauma- a blow to the psyche that breaks through one's defenses so suddenly and with such brutal force that one cannot react to it effectively
  - b) Collective trauma- a blow to the basic tissues of social life that damages the bonds attaching people together and impairs the prevailing sense of communality
3. Most people pull together and function during and after a disaster, but their effectiveness is diminished
4. Many disaster stress reactions are normal responses to an abnormal situation
5. Psychological reactions to disaster may cause serious psychological impairment
6. Many emotional reactions of disaster survivors stem from problems of living caused by the disaster
7. Disaster relief procedures have been called "the second disaster" from the process of rebuilding among bureaucracies to get aid, and the emotionally charged nature of victims
8. Most people do not see themselves as needing mental health services following disaster, and will not see out services
9. Disaster survivors may reject disaster assistance of all types

10. Disaster mental health assistance is often more “practical” than psychological in nature
11. Disaster mental health services must be uniquely tailored to the communities that they serve
12. Mental health staff need to set aside traditional methods, avoid the use of mental health labels, and use an active outreach approach to intervention
13. Survivors respond to active interest and concern
14. Interventions must be appropriate to the phase of disaster
15. Support systems are crucial to recovery

Myers & Wee 2005

## APPENDIX F. DISASTER MENTAL HEALTH VS. TRADITIONAL SERVICES

### Comparison of Disaster Mental Health Services and Traditional Mental Health Services

	Disaster Mental Health Services	Traditional Mental Health Services
Goals	Prevention of disaster-related stress reactions and restoration to pre-disaster level of functioning	Assessment, treatment planning and treatment leading to the reduction in or management of symptoms and long-term change in the person
Target Population	Normal persons affected by disaster	Persons identified as having a diagnosed mental disorder
Objectives	Support, education, and development of resources	Identification of illness than can be treated, managed, or cured
Methods	CODE-C	Psychotherapy, medication, case management
Settings	Community-based, where people live, work, congregate, or seek assistance	Office, clinic, or hospital based

Myers & Wee, 2005

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