Center for the Study of Traumatic Stress

Workplace Preparedness for Terrorism

Report of Findings to Alfred P. Sloan Foundation

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CSTS
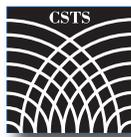
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Executive Summary

Comprehensive workplace preparedness for terrorism must address and integrate the psychological and behavioral aspects of terrorism preparedness and response in order to address issues of human continuity.

Comprehensive workplace preparedness for terrorism must address and integrate the psychological and behavioral aspects of terrorism preparedness and response in order to address issues of human continuity. Recognizing the beliefs and attitudes that influence behavior and drive behavioral change is essential if organizations are to effectively commit time to educate employees about preparedness and to practice preparedness behaviors. Understanding human continuity issues must also inform development of the interventions that can protect, sustain, and foster the recovery of individuals and facilitate resumption of work and performance. Human continuity factors in preparedness encompass a range of issues that can contribute to a corporation's threat assessment, its employee preparedness, the health and performance of employees, and the role of leadership in fostering organizational resilience to the impact of disaster and terrorism.

In the United States the workplace has been the primary target of terrorism. Significant negative impact on the nation's economy, infrastructure, and health can be accomplished through workplace disruption. Many workplaces—including the mass transportation systems upon which Americans rely to reach work—are relatively unprotected. These factors suggest that the workplace will continue to be an ideal target for international terrorists. Despite this, recent studies have demonstrated a lack of preparedness and a perceived lack of employer emphasis on workplace preparedness for terrorism. After observing the wide-scale destruction of events such as the September 11th terrorist attacks some corporations have focused increased attention on business continuity plans and physical security. However, the extent to which corporations have taken measures to protect human continuity through training and educational efforts aimed at altering disaster (or terrorism) behavior are less clear.

With the research support of the Alfred P. Sloan Foundation, Center for the Study of Traumatic Stress (CSTS) of the Uniformed Services University undertook a study of several large U.S. corporations to systematically explore the present status of human terrorism preparedness in the workplace. Through this study, we identified the functions and structures critical to corporate human continuity preparedness and identify barriers to, and opportunities for improving corporate workplace terrorism preparedness.

Through a series of preliminary interviews with leaders of and consultants to several US corporations, members of CSTS identified corporate divisions

and personnel instrumental to terrorism preparedness in the corporate workplace. These informants provided initial perspectives on preparedness efforts, perceived challenges, and potential areas for increased attention from within their own corporations and others with which they had first-hand knowledge or experience. The interviews formed the basis for the development of the semi-structured survey instrument created by the CSTS for more systematic examination. After institutional review board approval, the CSTS engaged a diverse sample of US Corporations and conducted site visits and semi-structured interviews of corporate leaders including Presidents and CEOs, and Directors of Corporate Security, Employee Assistance, Corporate Health/Medical, and Human Resources divisions, as well as product line managers. In the analysis of these interviews the CSTS made no attempt to compare or contrast the relative preparedness of sampled corporations. Interview data and observations were synthesized to identify commonalities between corporations. Through this iterative process, the CSTS established recommendations applicable to corporate workplaces as areas for action and further study.

Findings

1. The corporate security office emerged as the most critical corporate voice in identifying preparedness vulnerabilities to leadership, transmitting the message of security awareness and practices (behavior) to corporate employees, and promoting a culture of anticipation of future disasters. As one of our interviewees said, "Good security is good business." Security is at the core of human continuity preparedness only when corporations recognize the value and need to foster a "community of safety" rather than merely protect buildings. When security is not focused on individual employee behaviors, day-to-day *and* in response and recovery from a disaster or terrorist event, human continuity preparedness—and therefore citizen preparedness—is less effective.

2. Preparedness, at the "macro" level, and for the individual employee, is motivated by threat awareness, threat assessment, and threat perception. Defining events—a corporation's historical experience with crises and understanding of past responses—shape the identification of potential future threats and efforts to prepare for these events. Other factors influencing threat identification include geographical location (particularly the location of corporate headquarters) and degree to which the corporate "brand" is perceived as a potential terrorist target. Points of failure (e.g. as critical nodes for material supply, vulnerable geographic locations, or relatively unsecured or unprotected corporate functions or processes) are organizing principles upon which corporations based concerns about future business disruption and hence, preparedness efforts.

3. In addition to corporate security, the divisions of employee assistance, personnel/human resources, occupational health (medical and Employee Assistance Program (EAP)), and senior corporate leadership (e.g. President/CEO) served primary functions in establishing a corporate culture of preparedness. Coordination between these offices appeared crucial to comprehensive preparedness planning and response (e.g. translating this culture into a "climate" in which individuals altered their planning and behaviors to protect themselves and their families and, therefore, the corporation. The degree to which all of these divisions were involved in the

The corporate security office emerged as the most critical corporate voice in identifying preparedness vulnerabilities to leadership, transmitting the message of security awareness and practices (behavior) to corporate employees, and promoting a culture of anticipation of future disasters.

planning and response processes varied across corporations as did their integration in the preparedness process. The extent to which these service divisions (particularly occupational health) were internal versus outsourced to venders substantially affected the level of attention given to and degree of participation in preparedness efforts. This affected both knowledge of present corporate needs and planning for internal and external (i.e. contracted for) services critical to human preparedness.

4. In general, protection of physical plants and corporate business functions rather than personnel forms the basis of response plans. Such planning was consistent with an emphasis on traditional business continuity plans and traditional models of points of failure. The degree to which human continuity was prioritized or measures to protect this had been initiated was variable across corporations.

5. Corporate leaders noted that communicating to employees a recognition of their value to the corporation—of instilling in employees the idea that they "mattered"—was important to preservation of function in times of crises. Specific programs, as well as physical and monetary resources are necessary to communicate this message. Communication systems within corporations (e.g. corporate websites or intranet) that may currently serve as a mechanism for accountability of personnel after disaster may also be used to amplify the message of concern to many, but not all, employees.

6. Efficient information flow within corporations, between corporations, and between corporations and local and federal government agencies regarding threat analysis, preparedness, and terrorism response facilitate integrated community response. On a national level it appears efforts to create these integrated systems of communication have been limited to date. Notable exceptions are present.

7. Corporations exist within larger "communities" of related enterprises, suppliers and traditional communities of towns or cities where business operations occur. Interdependence is the norm for safety (fire, police, emergency response) as well as for effective product delivery. Loss of suppliers, transportation or community support can disrupt corporate continuity. Effective corporate response to terrorists attack may require assistance from related corporations as well as local, state, and federal governments and institutions. Likewise, corporate resources and the integration of resources from multiple corporations may be necessary for effective community responses to large scale attack. Integrated personal relationships across these boundaries are critical to sustaining actions post a terrorist event.

8. Threat awareness, assessment, and perception drive the allocation of security resources and assignment of priorities. Corporations, faced with finite resources for response planning and security efforts allocate resources based on past experience and in so doing may not apportion protective measures and related safety/security awareness training evenly across all personnel. This can create discontent and rifts in corporate function across divisions/departments/locations.

9. Corporations assess their individual risk specifically for a terrorist attack variably and allocate according to these assessments. However, corpora-

Preparedness, at the "macro" level, and for the individual employee, is motivated by threat awareness, threat assessment, and threat perception.

tions universally identified hazards to business operations (e.g. disasters (natural and human made) and accidents) and to varying degrees established training in response to these phenomena. Corporations tended to embrace an "all hazards" response plan based on "defining event" disasters that their corporation had previously experienced rather than emphasizing preparedness specifically for terrorism.

10. Corporate "culture" and corporate values influence both the content of disaster preparedness plans and the effectiveness with which plans and training were communicated throughout a corporation. For example, if safety is a widely recognized corporate value, then preparedness training may be effectively embedded in corporate safety training. The extent to which employees are "invested" in the corporate values influences the degree to which they respond to messages delivered in this context. When employees have experienced corporate values and culture as guiding principles during "defining events" this experience influences the effectiveness of preparedness initiatives framed within corporate culture and values.

Recommendations

1. Corporate security should be positioned, and should have the knowledge and interest for a leadership role for human continuity preparedness. Education of this group regarding the means to building "a community of safety" will enhance their ability to perform in this capacity and build a vision of this role.

2. Medical Directors and Occupational Health Divisions are under-identified as a critical component of corporate human continuity. Their distance from corporate decision making should be reduced as it currently limits their contribution to assessing threat of, planning for, and responding to the health implications of terrorism—especially bioterrorism and infectious disease outbreaks with population-health implications (e.g. SARS, Avian flu).

3. Employee Assistance Programs and Occupational Health require knowledge of evidence-based and evidence-informed interventions to mitigate, respond to and foster recovery from disasters.

4. Integration, collaboration and cross functionality of roles within corporations in human continuity planning is critical for, responding to and recovery from terrorism to include corporate security, employee assistance, medical, human resources, and corporate communications. Preparedness initiatives must promote this integration.

5. Defining events are central to the manner in which preparedness is integrated into or absent from corporate human continuity preparedness. Changing preparedness and response behavior must build upon the experience, lessons, and language of defining events. Finding unified concepts, operations, and cultural supports that resonate with existing corporate disaster paradigms for each corporation as well as language that addresses human continuity aspects of disaster response is needed. In general, talking about "terrorism preparedness" per se is not easily understood in the corporate world, nor easily implemented. In order for terrorism prepared-

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ness to be understood and implemented it requires "translation" into the defining event language of a specific corporation's history experience with a disaster or critical event.

6. Since corporations are part of communities in which they conduct operations around the globe they are components of local, state, federal and private networks. Coordination at the local level across these boundaries is necessary for human continuity planning for terrorism, disasters and critical incidents. From fire planning to daycare and inoculation for biological events (influenza to bioterrorist agents) the boundaries of corporations and their communities are porous and require resourcing and planning to meet human continuity and preparedness objectives. Education on the issues of community planning and response are particularly needed for the core preparedness functions (e.g. security, employee assistance, medical, human resources and communication)

Proposed Initiatives

1. Initiate targeted knowledge dissemination programs for a) corporate leadership, and b) corporate functional leaders (e.g. security, occupational health (medical and EAP), human resources and communication). Educational programs should foster integrated disaster planning for human continuity. Such a program needs to include knowledge about organizational and behavioral responses to terrorism, interventions and scenario training. Scenario based education in particular using 9/11 and hurricane Katrina as case studies for planning and response to complex catastrophic events which include loss of infrastructure can yield increased knowledge and preparedness. Writing useable scenarios that can teach human continuity requires expertise in terrorism preparedness, disaster response, human behavior and teaching/education. The Center for the Study of Traumatic Stress (CSTS) is uniquely positioned and skilled in this task.

    In addition, the CSTS is presently seeking partners to join in support of funding received from SAMSHA for the first knowledge dissemination conference for corporate preparedness. This meeting will be a major step in both educating for human continuity and bringing together various corporate functions, across various industries, to share knowledge and practice and identify gaps in terrorism preparedness for human continuity.

2. Develop educational materials for corporate human continuity preparedness and response. A model for this is the "Courage to Care" health education program of the CSTS. The CSTS has initiated an extremely successful health education campaign that is now distributed around the nation and the globe. Directed to medical providers and others who reach the public "Courage to Care" is based on finding "teachable moments. It has been distributed with information on preparing for influenza, helping families think about evacuation, and training families and health care providers in psychological first aid. This program is a model of what is needed for the corporate functions of security, human resources, and occupational health (medical and EAP),

3. Provide real time knowledge dissemination/consultation to corporate disaster/critical incidents to foster human continuity. This is a model the

Initiate targeted knowledge dissemination programs for a) corporate leadership, and b) corporate functional leaders (e.g. security, occupational health (medical and EAP), human resources and communication).

CSTS has used for many years to develop rapid information and disseminate it in response to real time questions. For example, recently the CSTS provided corporate consultation and knowledge materials for human continuity for the Katrina hurricane, addressing the issues of "continuous operations" required for business recovery.

4. Develop lessons learned from corporate experience with Hurricane Katrina as an event that can teach about response and recovery for weapons of mass destruction. The CSTS has consistently held lessons learned meetings for issues of bioterrorism, and other weapons of mass destruction, yielding important recommendations for use by public and private agencies. The development of a three day conference of security, human resource and occupational health corporate leaders, in conjunction with academic and operators, to think together on the present barriers to preparedness and needed programs could yield highly valuable input often not developed in ways that are useable. The CSTS had a record of successful Lessons Learned meetings that have influenced federal, state and private agencies. Such a meeting can also identify regulatory and legal agendas for preparedness response.

5. Expand the present study to a survey based approach of various groups (e.g. security, EAP) to increase knowledge of barrier and opportunities for preparedness across a wide range of corporations. Additional knowledge is needed. Systematic information collected now with the assistance of partnerships with the corporations and individuals who participated in our study—nearly all of whom volunteered to be resources in the future— could yield corporate study of corporate preparedness backed by the skills and knowledge of the CSTS.

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Introduction

In the United States, the workplace has been the primary target of terrorism. The events of 9/11 that targeted the World Trade Center and the Pentagon, the 2001 anthrax attacks on the U.S. Postal Service, Congress and media outlets, the 1995 Oklahoma City bombing of the Alfred P. Murrah Federal Building and the 1993 World Trade Center bombing each demonstrate the vulnerability of occupational settings to terrorist attack (Stith et al., 2003). Recently, public transportation systems—themselves workplaces for many—have been the target of international terrorism. The 2004 Madrid train bombings (Galea, 2005) and London's transportation terror (Rubin et al., 2005) exacted much of their devastation by disruption of systems that many rely on for transportation to and from work. As terrorists will continue to focus their efforts on vulnerable targets with the greatest potential for impact on society, the workplace is likely to continue to be the site of future attacks.

The negative impact of such violence on the nation's economy, infrastructure, and the health of citizens and communities created by workplace disruption is one of the major goals of terrorism (Ursano et al., 2004b, Schouten et al., 2004). Terrorists seek to destabilize trust in public institutions, to change people's beliefs, sense of safety, and behaviors (Holloway et al., 1997). Terrorism is the most extreme form of workplace violence (Bowie et al., 2005) furthering the imperative for disaster consequence management in industry (Vineburgh et al., 2005a,b,c).

Terrorism is associated with a greater negative impact on mental health than other disasters because of its malicious intent (Ursano et al., 2003; Stith et al., 2003). People exposed to terrorism, whether in close proximity to or far from the affected site, are at increased risk for a range of health-related responses. These include distress as well as mental illness and changes in behaviors that have health and community and corporate economic consequences. Following terrorist events a number of mental health problems have been found: sleep disturbance, post traumatic stress disorder, depression, generalized anxiety disorder and panic disorder, as well as elevated health risks such as increased use of alcohol, tobacco, and other drugs, especially for those with pre-existing alcohol abuse or other psychiatric difficulties (North et al, 1999; Fullerton et al., 2003; Pfefferbaum & Doughty, 2001; Galea et al., 2002; Vlahov et al., 2002; Ursano et al., 2003). In addition, changes in perceived safety can lead to unwillingness to travel or unwillingness to come to work. Similarly altered trust in leadership and disrupted work performance due to depression or family concerns are only a few of potentially costly workplace responses that can be anticipated.

The health consequences of terrorism have been documented to have short-term and long-term effects on the workplace and on workers. A significant population experiencing persistent distress two months after 9/11 reported

(Stein et al., 2003) that the distress disrupted work (65% reported accomplishing less), social life (24% avoided public places) and led to increased health risks (38% using alcohol, medication or other drugs to relax, sleep and reduce terrorism-related worries). A study of Pentagon employees thirteen months following 9/11 found those with acute stress disorder, depression and increased rates of alcohol use also had decreased sense of safety at home and in travel (Grieger et al., 2003). A study of this same population conducted a year later found that there were persisting effects of distress and mental disorder (Grieger et al., 2005).

Because most acts of terrorism in the U.S. have occurred where and when people work, and because corporations and the workplace are identified high value targets of international terrorism, it is essential that interventions for preparedness, response and recovery occur in occupational settings (Fullerton et al., 2003; Ursano et al., 2004b; Vineburgh, 2004). Studies, however, indicate a widespread lack of workplace preparedness, and a perceived lack of employer emphasis on preparedness for terrorism. A National Center for Disaster Preparedness study (2003) found a majority of Americans (76%) expressed concern about terrorism, but lacked awareness of emergency plans in their children's schools and in their workplace. Another survey found only 36% of citizens familiar with emergency plans in their workplace, yet citizens reported interest in having their workplace update their plans and practice drills (Council for Excellence in Government, 2004).

Sustaining our workforce –its organizational health and the well being of workers—sustains our communities and important national resources and services (Fullerton et al., 2003; Ursano et al., 2004b). Yet, nearly half of U.S. workers felt their employer was not prepared for a terrorist attack; and of those, 9% said it did not matter because they believed their company will never be affected (Comp Psych Survey, 2004). These perspectives, often counter-intuitive, may be attributable to concern amongst employers that preparedness could raise undue anxiety (Ursano & Vineburgh, 2003); lack of knowledge and training on how to educate employees (Stith et al., 2003); and complacency of employees who do not take drills seriously (Fink & Mathias, 2002).

Human continuity is the critical element of corporate continuity. Human continuity is defined as the process or concept of sustaining the health, safety and the ability to perform of individuals in a corporation, organization, group or community after a critical incident, disaster or terrorist attack (Vineburgh et al., 2004a,b,c). However rather than human continuity, sustaining the workplace in the face of disaster has tended to focus on more general concepts of operational preparedness and business continuity focusing to protecting buildings, property and product first (Mankin & Perry, 2004; Cavanagh, 2003). Several studies have found that less than 50% of U.S. corporations surveyed had *any* disaster plans in place, and those that did focused on natural disasters (hurricane, flood, fires) or safety issues related to industrial accidents versus terrorism planning and its impact on employees (Mankin & Perry, 2004). Less is known and written about preparedness in the context of human behavior and human continuity. Moreover, few studies have addressed the human continuity aspects of disaster preparedness in the private sector (Tierney et al., 2001).

Employee (and citizen) knowledge, beliefs and attitudes as well as training and expectations influence disaster and terrorism preparedness response and recovery. Despite what may be best for safety, in general individuals will not move toward smoke after a disaster even if safety is in that direction, they will seek out groups and only evacuate with a group and often only after leadership is present (Gershon, 2005). Knowledge of such behaviors is a necessary part

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of corporate preparedness planning at all levels. Recent studies of the WTC employees who survived the 9/11 tragedy showed that nearly 25% believed the roof could be used for evacuation and only 10% had ever entered a stairwell as part of a fire drill (Gershon, 2005). Therefore, preparing people and organizations for terrorism and disaster response and recovery requires understanding such disaster behaviors (Ursano et al., 2004c; Ursano and Vineburgh, 2004; Ursano and Vineburgh, 2005). Disaster behaviors include evacuation, shelter-in-place and quarantine, and these are often overlooked as important human continuity issues and health interventions in occupational settings, yet they are central to organizational resilience (Fullerton et al. 2003; Hall et al 2003; Ursano et al. 2003; Ursano and Norwood, 2003). Studies conducted after the 1993 World Trade Center Explosion found that 32% of employees had not begun to evacuate by over one hour and 30% decided *not* to evacuate (Aguirre et al., 1998). Other findings were that large groups (N>20) take 6.7 minutes longer to initiate evacuation; the higher the location, the greater the delay; the more people are known to one another, the longer the group takes to initiate evacuation (Aguirre et al 1998). In a terrorist attack or major disaster requiring evacuation, the behaviors described above could be the difference between life and death.

A classic study (Weisaeth, 1989) which identified the concept of disaster behavior in the context of a workplace critical incident, found that an individual's level of preparedness was the strongest predictor of an optimal disaster behavior. Employees without prior training did not fare well after a workplace explosion. Morgan Stanley's response to 9/11 supports this finding. Soon after the 1993 WTC bombings, Morgan Stanley launched a preparedness program involving serious evacuation drills. The employee preparedness program was supervised by corporate security Vice President, Rick Rescorla. One minute after the North Tower was struck on 9/11, Rescorla instructed Morgan Stanley's employees to evacuate the South Tower immediately, to stay calm and follow their well-practiced drills resulting in a loss of only seven of its 2,700 employees. Unfortunately, Rescorla, a celebrated Viet Nam veteran, was among the seven. His successful employee preparedness training has been attributed to the military discipline he brought to this task (Coutu, 2002).

The Nation's security is dependent on military, economic and communication infrastructure. In recent times, it has become clear that the health of the nation and its workforce is also a critical factor in national security (Ursano, 2002; Ursano et al., 2004b). The health of the workforce is critical to corporate continuity and preparedness. A corporation protects: (a) the nation (through safe products and services); (b) corporate life and interests, and; (c) the corporation's employees.

Focusing preparedness on protection of buildings, property and product rather than on employee health and behavior may put corporations at risk of disruption and break down. The events of 9/11 demonstrated to the nation as articulated by leadership of a number of affected corporations that an organization's most valuable asset is its people and that the crisis to be dealt with in its immediate aftermath was not industry-specific, but one defined as a human crisis (Greenberg, 2002; Argenti, 2002). Understanding the barriers and opportunities for preparing the workforce- and in this way the citizens of the nation — is a critical step in protecting our workforce and corporate continuity.

Site Visits

The Center for the Study of Traumatic Stress (CSTS) undertook a study of several large U.S. corporations to examine corporate human continuity pre-

A classic study (Weisaeth, 1989) which identified the concept of disaster behavior in the context of a workplace critical incident, found that an individual's level of preparedness was the strongest predictor of an optimal disaster behavior.

paredness. Importantly, the goal of our study was not to compare the levels of terrorism preparedness or types of preparedness programs in participating corporations. Nor was it to evaluate or rate the level of preparedness of individual companies, or to generalize from this sample about the levels of preparedness of various industries. Rather, our aims were to identify barriers and opportunities for corporate human continuity preparedness (across a range of industries) and to identify potential avenues to establish greater terrorism preparedness of US citizens through corporate preparedness.

Observations on the corporations' overall view of and approach to terrorism and disaster preparedness were collected. In addition, data on emotional and behavioral functioning, role of security operations in corporate culture, human resource planning, employee assistance organization, financial and insurance aspects of preparedness, medical protective measures and planning, worksite safety, organizational structure and the role of corporate values in influencing workplace and community preparedness behaviors were collected and analyzed for barriers and opportunities for workplace human continuity preparedness. This information was collected from senior leadership in each corporation and leaders of the specific areas of interest.

For our preliminary interviews, we met with management and leadership personnel from four organizations in New York City to obtain background information regarding their perceptions of barriers to, and opportunities for educating employees and corporations on terrorism preparedness to ensure human continuity and employee preparedness. These organizations included: 1) a prominent, private consulting firm specializing in consultation to national and international leadership on homeland security; 2) two multi-national corporations, and 3) an academic center for emergency preparedness. Each of these had been involved in New York City's response to 9/11. In these meetings, interviewees identified topics that formed the basis for the semi-structured interviews utilized in phase three of this project.

Interviewees

Corporate Operations
CEO	1
Vice Presidents/ Presidents of subsidiaries	7

Corporate Management
Vice President/Director/Asst Director Human Resources	5
Vice President/Directors Employee Assistance	3
External EAP/Consultants	2
Corporate Medical Directors/Asst Director	3

Corporate Global Security
Directors/ Deputy Directors	7
Senior Partners/Consultants Private Security	3
External Security Analyst	1

Academic Centers
Faculty/staff	10

Threat awareness (knowledge of threats) and assessment (determination of risk) are the drivers of corporate decisions on terrorism preparedness and response as well as the resources it assembles and deploys in responding to its perceived and actual risk environment.

For our core study interviews, we selected four multinational Fortune 500 corporations as candidates for formal study participation. Three of these corporations agreed to participate in the study. The participating corporations, headquartered in the Midwest, Northeast, and Mid-Atlantic regions, represented food processing, chemical manufacturing, and financial services. The fourth corporation was still considering participation in the study when our data collection phase ended.

We conducted 20 in person, key informant interviews at the headquarters of the three Fortune 500 corporations that joined the study. Each corporation selected interviewees who were knowledgeable about and/or involved in the corporation's crisis management. The study team suggested potential key-informant positions to an identified point of contact at each corporation, but the ultimate selection of participants for interview was left to the discretion of the corporate point of contact. All prospective participants were told that they did not have to consent to the interviews and that if they did not, no one would be told of their refusal. We met with executives and senior level individuals whose functions included: CEO, global security, human resources, corporate communications, employee relations, senior line management, and occupational health services including medical, health promotion and wellness, and employee assistance.

Threat perception — in contrast to assessment and awareness — is largely a psychological and behavioral process based on perception and belief.

Barriers and Opportunities to Employee Preparedness and Human Continuity

The results from our interviews are summarized into areas for corporate crisis management response and impact on the human continuity of organizations. These areas indicate barriers as well as opportunities to enhance business and employee/citizen preparedness.

Barriers and Opportunities to Employee Preparedness
and Human Continuity
    Threat Awareness, Threat Perception and Threat Assessment
    Corporate Security as an Emerging Voice in Preparedness
    Organizational Structure, Functional Areas, and Corporate Culture
    Disaster Paradigms
    Communication: Preparedness, Response and Recovery

Threat Awareness, Threat Perception and Threat Assessment

Threat awareness (knowledge of threats) and assessment (determination of risk) are the drivers of corporate decisions on terrorism preparedness and response as well as the resources it assembles and deploys in responding to its perceived and actual risk environment. In our interviews, terrorism was the organizing event for preparedness only in organizations that had a direct, meaningful experience with terrorism. In the absence of such direct exposure to terrorism, the history of the organization and its business directed the vast majority of threat assessment to expected events: e.g., catastrophic accidents, workplace safety, internal threats of employee stealing or tampering, kidnapping, travel security, disgruntled employees, product contamination. These relatively more expectable events organized the preparedness for terrorism. The "all hazards" approach this reflects was only occasionally reflected in a plan that explicitly included terrorism per se. At times there was little knowledge that the planning that was being done in these areas, was the same as required for specific terrorist threats.

Threat perception — in contrast to assessment and awareness — is largely a psychological and behavioral process based on perception and belief. Threat awareness and assessment have largely been analyzed and conceived of in an

operational context. The recognition of threat perception as an additional level of planning is necessary to human/employee preparedness and planning. When this was not recognized, interviewees told us that they had observed that some employees had a "why do they do that?" approach to fears and concerns that did not match the threat awareness and assessments of the organization. A number of factors influenced terrorist threat awareness, assessment and perception:

Threat Awareness, Threat Perception and Threat Assessment
   Geography
   Brand
   Points of Failure
   Human Continuity as Business Continuity
   Critical Event Preparedness
   Corporate-Community Cooperation and the Public-Private Interface
   Training
   Cost
   Fear of Increasing Anxiety

Geography: A corporation's location, its corporate headquarters, its national presence and its international presence, influenced its assessment of the threat of terrorism. Proximity to sites of previous terrorist events heightened the sense of vulnerability. The actual physical facilities of a company also influenced perception of threat. One company, because of its geographical location (e.g. the location of its headquarters and of the majority of its global operations), did not feel that it was or would be a target for terrorists. However the corporation was headquartered in the midst of industrial plants with potential for explosions, so that became the focus of their threat assessment and response. Another corporation could secure its own building, but could not exercise control of its outside environment, so directed considerable effort at detecting perturbations in the outside environment while preparing its employees to shelter within in the event of attack.

Geographical barriers to preparedness include operations in rural and remote settings, as well as international sites where local regulations may prohibit protective measures such as employment screening. Further, in some foreign locations, local affiliates of a U.S. corporation may assess threat differently from the local government with which it is conducting business. A United States corporation doing business abroad that requires the importation of goods may see product contamination as their major risk, while the threat assessment of the local government might be focused on drug smuggling, or the use of transport vehicles themselves as weapons of terrorist destruction.

Brand: Interviewees consistently drew attention to their "brand", in the context of threat assessment. For corporate response planners, "brand" had a range of meanings including specific product or product line, a service, or even the reputation of the company. In all instances, brand was an important element of corporate identity. A corporation's perception and beliefs about their brand was a major factor in how they protected, planned for, responded to, and recovered from disaster. Brand is a core part of an enterprise that has broad meaning to people both within and outside of the corporation. Brand is a set of attitudes and characteristics that defines the corporation in people's minds and serves as a point of reference. Threat assessment often focused to the value of this emotional aspect of brand.

A corporation's location, its corporate headquarters, its national presence and its international presence, influenced its assessment of the threat of terrorism.

In some instances, the threat assessment based on interpretation of "brand" led to a lowered perception of threat, while in others, the corporate brand was seen as a potential reason for attack. The interpretation of "brand" was an organizing principle that determined the steps corporations took to prepare for adverse events including natural or industrial disasters or anticipated acts of terrorism. One corporation believed that their brand was recognized (within their own industry) as being synonymous with a particularly high level of care for their employees. This company devoted considerable energy to providing individual employees with evacuation kits and personal protective equipment. This activity was not merely a symbolic gesture, but evidence of the extent to which corporate leadership was invested in the idea that their brand meant care for employees. As one security director remarked, "Good security is good business. Good security protects the brand."

Another corporation assessed their threat for terrorist attack as low because they regarded their brand as not widely recognized. They felt that many of the corporations they supplied were more vulnerable because their products had greater (American) brand recognition. Thus, the company that perceived its brand as unfamiliar centered its concerns on product contamination in the context of day-to-day business more than the likelihood of a major terrorist attack on their products. Another corporation recognized that its name, while not that of a product, was still a recognized brand, and removed signage containing its corporate logos from its plants in vulnerable, foreign locations.

Brand can represent multiple threats for a corporation, and even itself be the object of attack. The threat assessment of one company was heightened by two concerns. First, that its name could create a focus of attack as a result of specific ethnic associations, and, second, the company considers its ability to conduct business without interruption as fundamental to its brand, i.e., to that company brand meant a reputation for business continuity, even under duress, so any disruption would damage the reputation of the company .

Points of Failure: Corporations tended to organize their threat assessment and preparedness planning around the concept of potential points of failure — critical points of business supply, function or vulnerability to disruption. For example, critical transportation nodes, outsourced functions, remote and international sites with questionable security protection were all cited as vulnerabilities in their risk environment. Businesses differed on the number and types of points of failure they identified. Preparedness from this vantage can be only as good as an organization's imagination as to what the actual potential points of failure might be. Little attention was given to additional human/employee preparedness at these points of failure although they were agreed upon vulnerabilities to traditional business continuity.

Human Continuity as Business Continuity: The traditional view of business continuity has been focused on the infrastructure of an enterprise, i.e., its facilities and hardware. Some but not all of our interviewees described an expansion of the concept of business continuity to incorporate the organization's social capital— its human continuity. Corporate communications, security, human resources, occupational health services, and leadership attitudes were seen as vital in protecting and sustaining the human continuity of a corporation.

Interviewees at several participating corporations told us there was a shift in priorities from business continuity to human continuity after the attacks of 9/11. Corporations undertook a number of measures to support this. Examples include the creation of backup work sites, redundant information systems, use of virtual offices, having a disaster communication plan, and expanded use of communication technology, such as Blackberries, web-based company in-

tranets, and maintaining frequently updated personnel lists (both hard copy and electronic) which managers carried with them when not at the office.

Critical Event Preparedness: Another challenge to human continuity is anticipating what types of events to prepare employees for. Furthermore, when an event occurs, it is often hard to get information about exactly what has happened. Thus, employees and managers go through a period in which critical decisions must be made, but they do not have complete information about the nature of the event. Corporate leaders interviewed noted that in the aftermath of corporate disasters they needed to rapidly develop plans for making quick decisions with incomplete information—and not letting the lack of information prevent them from taking some form necessary action in a timely manner.

This observation has been reported in other threat situations as well. In a recent incident in which a small plane encroached on restricted airspace in the Washington, DC, area, officials did not know whether to respond to the threat as a potential bomb/explosive event or a chemical/biological attack.

Even when programs have been put in place to ensure or improve human continuity, several described the problem that it is difficult to know until an event occurs whether the right programs have been put in place and whether they have worked. As one security manager put it "How does one know if one's people have been appropriately hardened? What are the metrics?"

Corporate-Community Cooperation and the Public-Private Interface: No corporation is an island. Several corporations pointed out the need to rely on community resources and to respond to community needs. Terrorism preparedness and response requires coordination and cooperation between the public and private sectors including a company's community or communities, as well as state and Federal agencies. Public/private interface around terrorism preparedness can range from issues of research, to sharing and interpretation of threat information, to the role and resources of a business in response to a major disaster and to the local fire department and law enforcement in responding to corporate needs.

Corporations discussed numerous barriers to effective public/private interface. One barrier is the perception that Federal Government will take care of disaster preparedness and response. This discourages self-initiatives and allocation of resources at the individual, company, and corporate levels.

Federal regulations about full disclosure of research procedures and outcomes were seen as a barrier to a corporation's participation in studies that might benefit terrorism preparedness. One issue for the corporations was the potential that proprietary information would become available to their competitors. In addition, there was a reluctance to shoulder the financial costs of research, especially when that research might benefit competitors. Doing "good" for the nation, while valued by corporations, is not always good for business, and corporate leaders interviewed recognized their fiduciary responsibility to stockholders. The same factors that discourage joint public/private research endeavors also discouraged research collaboration among corporations.

Training: Discussion with corporations following questions specific to their terrorism preparedness training programs invariably became more general discussions about safety, health, leadership, and communication. Each of these areas and topics involve trainable skills, especially in relation to a disaster or terrorist attack. Corporations varied in what exercises they had conducted. Some had active programs including table top exercises with senior management; others had not held exercises for over a year. While some key-informants could not identify any training or measures designed specifically to prepare for terrorism, all key-informants interviewed recognized an all-hazards response

Several corporations pointed out the need to rely on community resources and to respond to community needs.

to anticipated corporate disasters.

In some companies, training focused on the safety of everyday operations and was conducted regularly. In these companies, there was very little training specifically geared to terrorist events. Many of the skills taught in safety training are applicable to terrorism preparedness, but this was not necessarily recognized by the study groups. At times for some of the corporate participants, safety training and fire drills were used as an opportunity for small group presentations, or mini-town hall meetings at which terrorism preparedness was, or could be, discussed.

Cost: Expense is a barrier to more extensive training for specific terrorism preparedness. Some corporations have the money to implement expensive tabletop exercises and to secure the services of outside consultants who can develop, conduct, and evaluate sophisticated exercises. However, these exercises are for senior management who strategize from the top down, and are not intended for employee preparedness. Drills devoted to employee preparedness, such as evacuation drills, are not uniform and frequently are not taken seriously by the employees themselves. When preparedness is optional the issues of cost, and therefore affects on the bottom line, are substantial. If mandatory or required by regulation this competitive loss is equalized across and industry. Evacuation drills will be mandatory in New York City in 2006.

Fear of Increasing Anxiety: Some managers fear that training for terrorist events can raise employee's anxiety. However, the informants interviewed by the study team were not able to identify any specific examples of this having occurred. In contrast to this view, corporations that directly experienced 9/11 believed that conducting regular drills and communicating openly about preparedness issues empowered employees and made them less fearful. Furthermore, security leadership in these corporations that were affected recognized that training builds behavior that will maximize positive outcomes in the event of a terrorist attack or a disaster. Preparedness is not instinctive; rather, it is a set of learned skills and behaviors.

Expense is a barrier to more extensive training for specific terrorism preparedness.

Corporate Terorism Preparedness

Integration across Community & Public-Private Interfaces
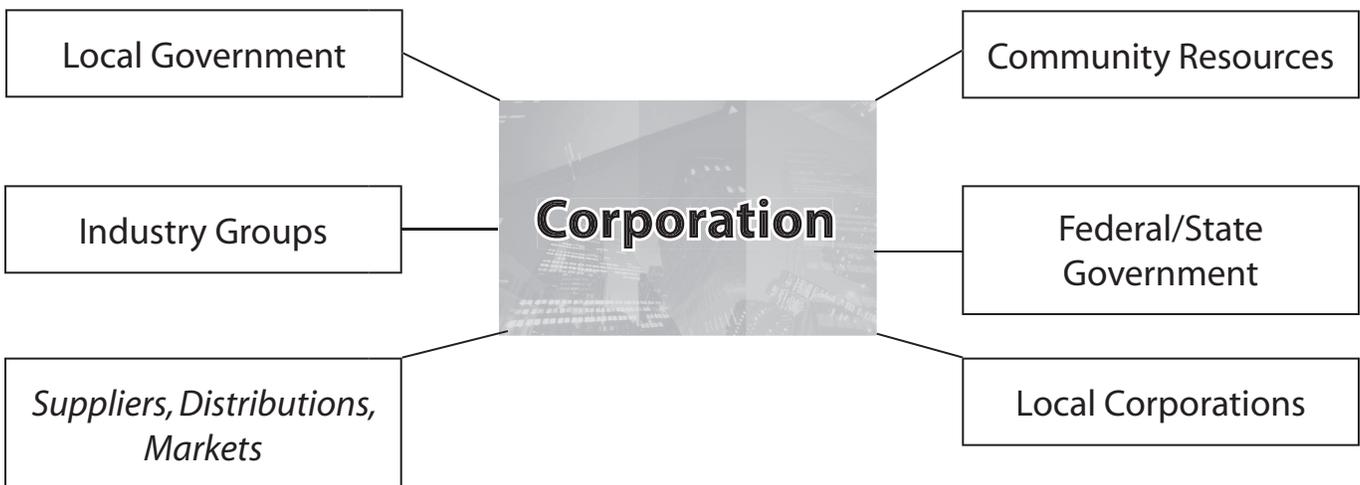
Local Government

Community Resources

Industry Groups

Corporation

Federal/State Government

Suppliers, Distributions, Markets

Local Corporations

Corporate Security as an Emerging Voice in Preparedness

The corporate security directors we interviewed were highly knowledgeable and immensely articulate about terrorism preparedness. They expressed interest in advancing this knowledge directly to management and employees. They saw themselves and their profession as going beyond the traditional corporate security functions of "gates, guns, and guards." They prided themselves in their role in the continuity of the corporation's people as well as its operations and brand.

Security Priorities: Allocation of security resources to specific threats may be economically or emotionally disproportionate to the actual preparedness needs of the employees. Corporations may choose to allocate resources to a few people in high-risk locations or to focus their attention on one or more locations they consider most vulnerable (e.g. at identified points of failure) to the exclusion of other areas of the company. An example of allocation of resources to a few people in high-risk locations is training in evasive driving and renting a race track to conduct the exercises for personnel traveling to places where kidnapping is a known threat. This represents a sophisticated assessment and intervention; however, it is available to only a few employees. Corporations might consider some basic education for all employees, even those in areas perceived as not high risk, in certain personal security measures, since all may encounter terrorism outside the normal work setting, e.g., on vacation or on corporate travel even if their worksite does not place them at highest risk for identified corporate threats.

Terrorism insurance is another area of resource allocation that requires evaluation of security priorities. One corporation described its dilemma at having to renew its risk insurance policies immediately after 9/11 when insurance prices dramatically escalated. This is an instance in which leadership must prioritize both its infrastructure protection and its human continuity needs.

Corporate Security as Critical to building "A Community of Safety". The security directors understood that preparedness is about human behavior. One security director remarked, "We can teach people about security to build behavior. I love to build behavior!" Remarking on the difference in dealing with human continuity versus operational continuity, one security team said, "We don't buy products, we buy "self-resilience and self-sufficiency."

A primary objective of security was the development of a culture and community of safety. To achieve this, security collaborated with occupational health in the form of employee assistance, human resources and corporate communication.

One security director felt that a barrier to building behavior in the form of employee preparedness is a sense often shared by leadership, management and employees that the federal government will take care of homeland security issues relieving them of the personal responsibility of preparing. On the other hand, this director felt that an opportunity for preparedness was that their workforce was very patriotic.

The corporate security directors we interviewed were highly knowledgeable and immensely articulate about terrorism preparedness.

A common theme amongst each security professional was how they had established trust in their workplace. Some established their visibility and trust by useful interactions. These ranged from the mundane — such as assisting with traffic safety enforcement on corporate property — to the more serious events such as consultation around workplace and domestic violence. After 9/11, corporate security personnel in one corporation made themselves visible and available to answer questions by roaming the halls and talking with employees at their workstations. Several referred to this approach as "security transparency", which they viewed as essential in their strategy to engage employee's attention. In one company affected by 9/11, security collaborated with EAP counselors to encourage employees to interact with the bomb dogs as a way to humanize heightened security.

Each security interviewee was highly skilled in management, had broad experience including having worked in the Federal sector, and was immensely articulate. The security directors believed that direct access to the CEO was critical to their success in protecting the corporation. They also were often their corporation's point of contact with Federal, state, local, and global security and intelligence resources.

Security Information Sharing Among Corporations and Local, State and Federal Officials: Interpreting threat information provided to corporate security programs from all levels of government was a commonly expressed concern and barrier to corporate preparedness. One highly knowledgeable individual asked, "How do you get people or organizations to prepare when they don't know how to interpret the threat?" All of the corporations in our study desired usable ("actionable") intelligence from the government, that is, information they can act on. Color-coded threat levels were cited as a prime example of information that gave little or no guidance for action and was, in its ambiguity, viewed as possibly damaging. In addition to the ambiguity of color codes for corporate security interpretation, program managers struggled to identify mechanisms to address the increased concern threat level changes caused employees. Corporations want information that leads to specific precautions and responses, not generalities.

Threat Assessment requires information, expertise, and information shared by local, state and federal security and police officials. Perceived deficiencies in the types and quality of information that flows from public sector to the private sector were noted by security officials. Government agencies were perceived as frequently not sharing information with corporate security. For example, one security director described an incident in which critical information, which he should have received, was communicated to a source at the wrong corporation. A Federal agency had informed the corporation who owned the building, but failed to inform this corporation's security director whose employees were the major tenants of the building. Despite these barriers, each corporation expressed a desire for increased effective public-private partnership.

Organizational Structure, Functional Areas, and Corporate Culture

Organizational structure, functional areas, and corporate culture affected preparedness planning and its position in each corporation. The functional areas that were represented on the crisis management team, and how they interacted with one another appeared to be extremely important in determining what information was considered in corporate planning. The organization's culture can facilitate or impede crisis management team objectives, as well as individual employee behavior before, during, and after a terrorist event. Our interviewees identified several important organizational, functional and cultural factors that enhanced or impaired crisis response.

Organizational Structure, Functional Areas, and Corporate Culture
Corporate Culture and Values
Integration, Collaboration and Cross-functionality
Occupational Health
Outsourcing

Corporate culture and values: Corporate culture and values set the context in which an organization functions, and therefore are important aspects of corporate and employee preparedness. Safety was so embedded in the culture of one corporation that it became a value intrinsic to its brand. Interviewees remarked that employees were proud of their safety consciousness and often inculcated this value and its practices into their daily work routine, family life and community activities.

Preparedness values were also a product of shared experience – experience and therefore personal relevance. Corporations affected by 9/11 expressed a sense that values articulated by the corporation were exemplified during the post-disaster community building period, and this led to a greater sense of trust amongst leaders. Values are galvanized by shared experience which can facilitate a more universal commitment to preparedness.

Many sub-cultures existed in the interviewed corporations. These were formed by differing ethnic groups, diverse work environments, varying work tasks and varying geographic locations. In addition, acquisitions and changes in management philosophy created cultural variation (and at times tensions) in which corporate procedures including safety were affected. In one company, long-time employees (generally older) had more accidents than newer employees who were more receptive to the new procedures. In such environments, language, trust, or sense of safety may vary and create barriers to preparedness policies, implementation and communication.

Integration, Collaboration and Cross-functionality: Corporations described effective crisis management as requiring cross-functionality and teamwork. Many functions formerly operating in silos were experiencing new collaborations. For example, collaboration between corporate security, corporate communications, and occupational health services strengthened employee outreach, education, and training for terrorism. The collaboration between human resources, EAP, and security is essential to address back-to-work policies and programs following critical incidents. The collaboration between security, medical, and human resources appeared critical in order to address bioterrorism and pandemic threats

Occupational Health: In corporations where medical directors were integrated within the crisis management team, there was more planning around health issues in the aftermath of disaster or attack. The participation of the corporate medical director in crisis management appeared to highlight planning for normal epidemics (e.g., influenza), created opportunities for better response to other health threats, such as the recent SARS outbreak, incorporated ideas about certain types of product contamination, and brought bioterrorism to the table.

The particular role of occupational health services in terrorism responses has been recognized by the National Academy of Sciences, Institute of Medicine (Stith et. al., 2003). This was supported by the prominence of occupational health in some of the corporations where planning for epidemics as well as bioterrorism were present. The health consequences of bioterrorism or pandemic

threats provide models for planning for bioterrorism attacks. The individuals most knowledgeable about these issues within the corporation are normally the medical directors.

Outsourcing of corporate medical services appeared to represent a potentially serious barrier to corporate preparedness. One outsourced medical director noted that he was not involved in corporate crisis planning and expressed an interest in being included. The reasons for this may have been attributable to a corporate lack of awareness that medical expertise and assessment could enhance overall threat assessment and/or lack of communication between medical and crisis management leadership. Integration of the medical director may facilitate adherence to preventive measures such as inoculation and treatment.

Global disease threats (e.g., SARS) also highlighted the presence or absence of an integrated medical function. When an integrated medical function was not present, the medical focus was primarily on contract services, travel needs and employee health benefits. Corporate downsizing was one reason given for the decreased the number of full-time, corporate medical directors.

The trend to outsourcing of medical is also prevalent in employee assistance. Employee assistance programs (EAP) are the locus of health promotion, assessment, and sometimes treatment for a range of employee psychological and behavioral health problems including workplace stress, substance abuse, mental disorders, and domestic violence. Most companies outsource their EAP services. After 9/11, one corporation hired their outsourced EAP as a full-time

Outsourcing of corporate medical services appeared to represent a potentially serious barrier to corporate preparedness.

Integration, Collaboration and Cross-functionality for Corporate Preparedness and Response
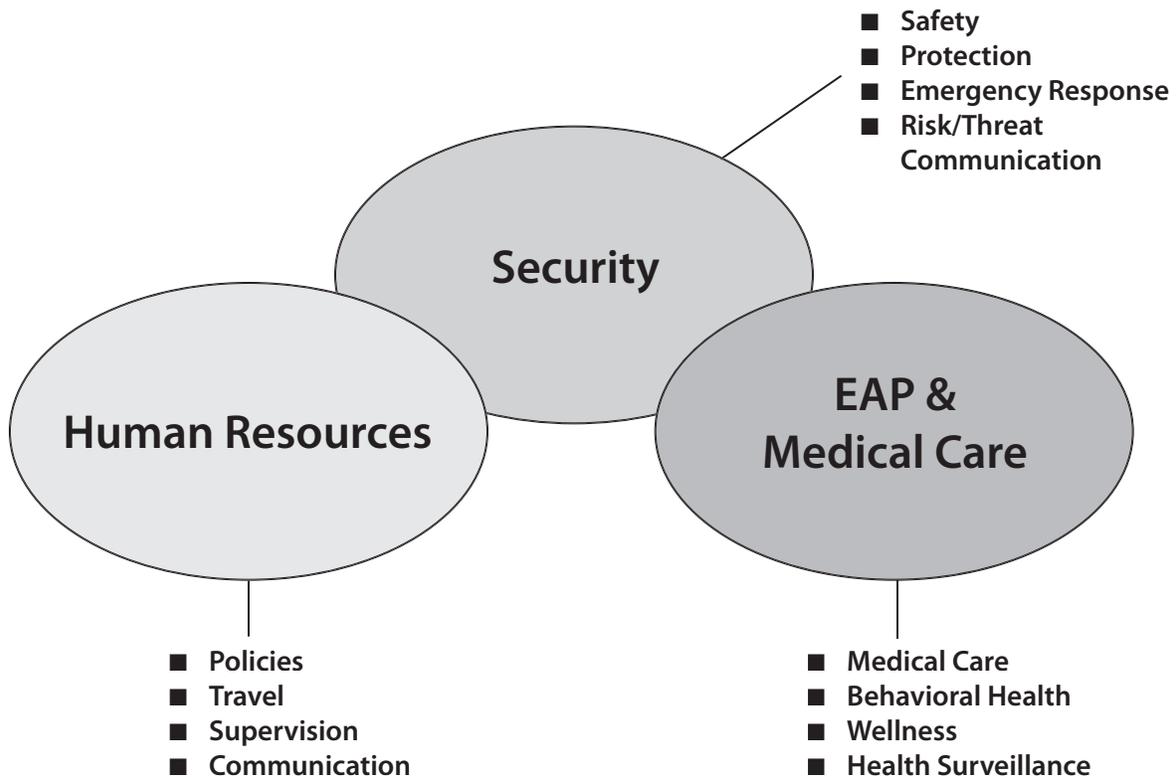
Security
- Safety
- Protection
- Emergency Response
- Risk/Threat Communication

Human Resources
- Policies
- Travel
- Supervision
- Communication

EAP & Medical Care
- Medical Care
- Behavioral Health
- Wellness
- Health Surveillance

employee of the corporation recognizing the long-term implications of this terrorist event might result in an escalation of psychological and behavioral health problems. The occupational health program found their caseload divided into two groups. The larger group was experiencing short-term traumatic stress with concerns about continuing to work in this environment. The second group had a prior history of trauma and anxiety that was reawakened as a result of 9/11. Alcohol use increased, as did tobacco use. There were family problems as many spouses were upset about the other spouse returning to work. Comments like, "My spouse doesn't get it. We're not on the same page," prompted home mailings to reassure families.

Debriefing was found to increase re-experiencing of the event and was disbanded. In its place, a resilience model was instituted that focused on managing one's stress (not disaster specific) and preparedness for recovery. Occupational health and security collaborated and thought outside the box. "Counselors wandered the halls and bomb dogs became therapy dogs."

Some corporations that utilized outsourced resources and were pleased with their response to 9/11 commented that, "vendors need to be the best in class." Corporations are responsible for ensuring the best quality and delivery of services and require close monitoring. It was commented that the contracted role was primarily to respond to crisis, not to educate employees about preparedness. The tendency to utilize outsourced Employee Assistance Programs (EAPs) and subcontracted crisis management firms may represent a barrier to employee preparedness as it is not a profitable activity for the vendor and the corporation may overlook this need as their responsibility.

In addition several of the outsourced EAPs noted past use of, and plans to use Critical Incident Stress Debriefing in the aftermath of disaster or attack. Recent studies of this procedure suggest that it may be a potentially harmful intervention and in particular will not prevent development of post-traumatic stress disorder. This lack of knowledge of evidenced based interventions was prominent in this area.

Internal EAP Directors that the team interviewed believed that their existing health promotion activities could be expanded to include employee preparedness for terrorism and bioterrorism.

Outsourcing: Outsourcing is a core component of corporate structure to limit costs, expand opportunities and meet regulatory requirements. Corporations reliant on transportation networks recognized the vulnerability of outsourced services such as trucking, rail transport, barges, and aircraft. The preparation and reliability of a contractor is not in the control of the primary corporation. (Similarly, corporate offices that are outside of owned facilities are vulnerable to the planning, drills and threat vulnerability planning of the building owners). Contracted seasonal workers were also less integrated into the corporate planning. When these created corporate costs, extensive programs were arranged to educate and supervise to limit dangers and costs. They were more difficult to prepare because of their limited availability for training. Outsourcing of occupational health functions has been discussed above. Thus outsourcing, in general, may be a barrier to preparedness and can even compromise corporate security.

Internal EAP Directors that the team interviewed believed that their existing health promotion activities could be expanded to include employee preparedness for terrorism and bioterrorism.

Disaster Paradigms

Disaster Paradigms
    Defining Event
    Resiliency

Defining event: Each corporation that the study team interviewed had experienced a defining event or events that became a template for their approach in preparing for and responding to workplace crises and traumatic events. We view these as establishing a corporate disaster paradigm. Defining events included industrial accidents, workplace violence, acts of disgruntled employees, natural disasters, and the experience of 9/11. A corporation's crisis management philosophy, team, and training were often organized around one or more of these defining events, which became their disaster paradigms.

We observed that interviewees responded to questions about bioterrorism and their corporations' preparedness by referring to their recollections of these defining events, and the lessons learned. It was easier for interviewees to discuss real events than hypothetical threats and concepts of preparedness. Interviewees' descriptions of disaster events included descriptions of the development of shared meaning within various leaders of each corporation, and the need for leadership to be visible and on the spot when a critical incident occurs.

Resiliency: These defining events become a resiliency benchmark. Positive responses to previous corporate disasters set the standard for what leaders thought resiliency should be in their respective organizations, and provided belief that they are capable of recovery from adverse events. This benchmark and belief became a critical basis of their preparedness posture.

One company remarked that they have, "the gold standard of preparedness." This standard was described as multi-pronged. It encompassed the health, well-being and safety of employees, communication, having actual preparedness and response plans in place and ongoing, creative reminders to sustain threat awareness amongst employees.

We do not have any reason to believe that this was a conscious or deliberate process. Rather, disaster paradigms seem to develop spontaneously as a result of the shared experience of corporate responders to these significant corporate events.

Communication for Preparedness, Response and Recovery

The importance of information, provided on a consistent and reliable basis in disaster events was heard repeatedly. Whether this was a clearly designated responsibility that was valued varied. The role of human resources was usually critical and central to the communication planning. In many ways communication was a function of the Human Resources Division.

Communication for Preparedness, Response and Recovery
    Mattering
    Communicating Preparedness, Response and Recovery

Mattering: Preparedness measures to support human continuity served several functions, including practical help for maintaining work and contact, but also, and reported by several interviewees as important, communicating to employees that they mattered. In each of the corporations the study team visited, officials emphasized the importance of creating a sense of mattering. This appeared to be more effectively implemented in some but not other corporations and divisions. Successful implementation was done by many means, including in addition to enhanced communications measures noted above, encouraging health and fitness through special programs such as immunizations and fitness centers, supplying individual disaster kits for every employee, and providing an assurance of job security in the aftermath of adverse events. For example, one corporation cited the morale benefit to employees when the CEO announced the day after 9/11 that employees would all have jobs despite disruption of their business.

Instilling in employees the sense that they matter involved not only communication and good intentions, but also required resources and management actions that demonstrated a sense of mattering. In a recent large-scale evacuation, an organization whose individuals worked in separate sites experienced a disparity in employee protection. Upon evacuating, this organization's employees, whose evacuation gear was limited, observed that employees of other organizations whose buildings they shared evacuated with sophisticated kits including protective masks. This created a drop in employee morale and a sense that they did not matter. (Ursano, Vineburgh 2005)

Communicating Preparedness, Response and Recovery. Interviewees described the important role of corporate communications in crisis management and response. Since 9/11, many corporations realized the need for ongoing employee information updates and having some positive mechanism for ensuring the updates really occur. The latter requires having ways to communicate with employees who are not at the office and means that contact lists must be current. One corporation created a system that caused employee ID cards (necessary for entrance to the building) to fail if their contact information had not been updated within thirty days.

A corporation's employee website was also reported as a valuable tool in disaster communication. One corporation affected by 9/11 had launched its company employee website on September 10. The site served as a critical tool to keep employees informed throughout the recovery process. The site continues to be central to the organization's employee education and communication about threat and preparedness. Their experience and that of other corporations using the Web for employee communications supported the value of this approach, but also highlighted some problem areas. First, the site only worked for people with access to the communication net. Hourly employees and contractors were often harder to reach, as were any employees without regular access to a computer. Communication required sensitivity to the diversity of the workplace, and had to include information in different languages, be accessible to special populations such as the disabled, and be easily comprehensible.

Other technologies, some older, were also important in corporate communications. In immediate response to 9/11, public address systems were the most accessible and useful forms of communication (Argenti, 2002). Since 9/11, some corporations have also made more extensive use of Blackberries and cell phones. One corporation expanded its PA system into buildings remote from the main headquarters building and in spaces shared by more than one firm. Other forms of communication include 800 numbers for updates and phone trees.

Interviewees described the important role of corporate communications in crisis management and response.

Corporate communications also responded to the wide variety of other sources of information — and misinformation. With the Internet and real time television, disaster information was usually received in real time and often events were viewed as they were occurring. Therefore, corporate communication design required rapid response if it were to inform employees and allay concerns. Another critical challenge was finding the balance between providing too little information and too much information. Corporate communication also had a responsibility to deal externally with customers and the media.

Summary

Barriers and Opportunities
Corporate leadership
Critical role for corporate security as leader in human continuity
    preparedness
Critical role of occupational health (medical and EAP) in planning,
    response and recovery
Integration and collaboration of security, human resources and
    occupational health (medical and EAP)
Corporate communication
Education and training

Corporate Leadership

In the corporations which were the most successful in preparedness, leadership was felt to be dedicated to protecting and preparing their people. Corporate leadership must champion the importance of terrorism preparedness in order for management to facilitate preparedness activities. A corporation that provides preparedness education sends a message that it cares, and this can counter-balance a corporation's fear that undertaking such activities runs the risk of fear mongering or increasing employee anxiety. Leadership can undermine or reinforce a corporation's historical values. Either way, the morale and trust of employees are affected and these impact response to training and compliance with recommendations critical to response and recovery in crises. Certain corporate cultures may make people feel they matter more (or less) than others. Policies and leadership behavior must maximize people's sense that they matter, and be informed by the idea that best-practices for training or preparing one sub-culture within a corporation may not be as effective in other sub-culture populations.

Critical Role for Corporate Security as Leader in Human Continuity Preparedness

As a result of 9/11, a number of corporate functions, including as seen here, have begun to step beyond their formerly prescribed functions and roles (Greenberg, 2002; Argenti, 2002) to assume necessary leadership of preparedness. Corporate security, traditionally tasked with guarding the perimeter, has more than before moved to deal with the human continuity aspects of preparedness (Conference Board, 2003; Burill, 2005). Working with communications, occupational health and human resources, security is ideally positioned to educate employees about preparedness and develop and sustain a corporate culture of safety. This professional group has the resources and skills to educate

Corporate leadership must champion the importance of terrorism preparedness in order for management to facilitate preparedness activities.

employees about preparing and life-saving behaviors in the face of disaster and terrorism (Ursano, 2003).

Critical Role of Occupational Health (Medical and EAP) in Planning, Response and Recovery

The role of occupational health providers is essential to disaster planning and response (Ursano RJ, Fullerton, CS, Norwood AE, 2004a; Stith et al 2003; Guidotti, 2005). Marginalizing medical services, a result of downsizing and outsourcing, may have contributed to corporate crisis management overlooking major threats especially ones related to the health consequences of terrorism — particularly bioterrorism and the important on-going role of the medical director and medical care planning in this response and preparation. The Avian flu concerns also illustrate this at present. However, many occupational health professionals also lack training in disaster health and mental health (Stith et al, 2003). Occupational health nurses are knowledgeable about the health effects of hazardous and toxic substances, especially in manufacturing industries involving chemicals where they assess exposure and injuries (Guidotti, 2005). Bioterrorism preparedness requires this established platform of knowledge and outreach. Corporate medical directors play a critical role in workplace risk assessment around the threat or actuality of bioterrorism, infectious disease and pandemics.

The role of occupational health providers is essential to disaster planning and response…

Corporations must also be alert to management of occupational health services in the aftermath of disasters because of the potential liability around post-disaster care (Tehrani, 2002). The burden of disease from depression, anxiety, alcohol misuse and abuse—all associated with disaster exposure—is costly in terms of healthcare expenditures, lost productivity and impact on morale (Birnbaum et al., 2000; Stewart et al., 2003; Mangione et al., 1998).

Similarly, as part of occupational health, internal EAPs have greater understanding of their corporation's culture than do contracted providers and can use this for planning and response as well as advising leadership. The loss of this internal knowledge of employee life can affect disaster planning and recovery unless this is recognized. Corporations must be vigilant and conscientious in setting expectations for outsourced services that relate to employee security or preparedness. Some corporations in this study made special efforts to get to know their vendors and to establish relationships to ensure that the vendors were "part of the team" and would be responsive to the corporation's culture and values. It is unlikely such will occur widely without regulatory requirements since this aspect of preparedness will substantially increase costs.

Employee assistance providers (EAPs) are also a resource for education as well as mental health care in disaster preparedness. EAPs gained great visibility as a first responder in the workplace after 9/11 (Greenberg, 2002). In addition to offering assessment and referral for issues affecting employee mental health and performance, EAPS disseminate preventive health information. This role is central to disaster preparedness (Vineburgh, 2004; Vineburgh et al., 2005a,b,c.).

Integration and Collaboration of Security, Human Resources and Occupational Health (Medical and EAP)

Integration and cross-functionality of workplace functions is critical to achieving crisis management objectives around human continuity (Shaw and Harrald, 2004; Vineburgh et al., 2005a,b,c; Ursano and Vineburgh, 2004; Ursano and Vineburgh, 2005). Collaboration between corporate security and EAP can reinforce the health implications of employee preparedness, an approach

that can personalize activities like drills, which many employees regard as operational and therefore not their responsibility. Findings on human preparedness around engaging and influencing public action suggest that personalizing risks motivates behavior change (Tierney, 2001). Corporate security, occupational health (medical and EAP functions), human resources and corporate communications must work together in this process that encompasses three phases: pre-event, event and post-event.

Corporate Communication

Often communication within the corporation is a function of both human resources/personnel and a communications department. Corporate communications is essential to work with corporate leadership and human resources in post terrorism response and recovery. In addition to what we found in this study, two case studies on corporate responses to 9/11 in the Harvard Business Review (Argenti, 2002; Greenberg, 2002) underscore the importance of communications and communication strategies in the immediate aftermath of workplace disasters, and how communication fosters organizational recovery and resilience. Accounting for employees, maintaining contact, setting work policies for return, absence and travel, disability policy, assisting employee return to work, reassuring families and providing ongoing information around disasters is a critical function driven by good communication and communication resources, i.e. telephone trees, employee websites, PA systems, client and media interface).

Communication is particularly important from leadership to employees and from employees and management to leadership after a disaster. Terrorism opens the fault lines of a society revealing its vulnerabilities and divisive tendencies along racial, ethnic and religious lines (Ursano, 2002). This can result in scapegoating. and discrimination against ethnicities perceived as akin to the terrorists, as well as fallout around perceived inequities in disaster treatment responses. In the aftermath of the anthrax attacks of 2001, U. S. postal workers perceived their medical treatment as inferior to that given to employees on Capital Hill. This perception rooted around the fault lines of race and ethnicity in the United States, resulted in serious and persistent mistrust that undermined the cohesion of the postal service workplace including legal ramifications (Holloway and Waldrep, 2004; Steury et al., 2004). These behavioral consequences of terrorism, which were evidenced in Hurricane Katrina, have important implications for the human capital and continuity of organizations. Human resource personnel must be knowledgeable about the potential of fallout and plan to mitigate its occurrence.

Education and Training

Defining events offer opportunities for preparedness learning and training. The challenge is, to quote a prominent public spokesperson on national preparedness and threat awareness, to transpose these stories into a public education campaign around workplace preparedness. The opportunity, however, lies in the recognition that corporations appear to identify more readily with an all-hazards approach based on previous corporate experience than to hypothetical models of potential attacks.

New knowledge is needed in evidence based and evidence informed interventions for post disaster recovery. For example, critical incident stress debriefing (CISD) has become a staple in the arsenal of corporate response to disasters (Tehrani, 2002). Many outsourced EAPs subcontract to crisis management firms that specialize in this approach. However, a number of studies

Integration and cross-functionality of workplace functions is critical to achieving crisis management objectives around human continuity

have shown this method to be ineffectual and even detrimental (Schouten et al., 2004; McNally et al., 2003; Rose et al., 1999; Rose et al., 2001; Raphael, B 2004).

In developing training or education programs for employee preparedness, it is also essential to recognize various subcultures within the company. Subcultures may represent workers within different divisions in a corporation, seasonal vs. full-time employees, employees of different ages, or of different ethnicities. For example, older, more tenured, employees may be resistant to adopting new safety practices because they feel comfortable with procedures they've utilized successfully for long periods of time and do not feel the necessity to change them.

Corporations are communities unto themselves with their own culture and values. Intrinsic to the culture of a corporation is its own experience with disaster, which shapes its beliefs, threat assessment and responses to critical incidents and their management.

Because each corporation's perception of threat differs based upon such factors as location, industry, disaster history, organizational structure and values, an educational approach to employee preparedness must identify elements which have universal appeal for organizations and workforces. Seizing on the more readily identifiable all-hazards approach rather than models based on hypothetical (and at times unimaginable) threats may be a reasonable starting point. However programs must then be tailored such to meet individual corporate needs based on specific corporate factors such as threat perception, brand perception, corporate culture and values, corporate resources and priorities, perceived (and actual) points of failure, and identifiable needs and characteristics of corporate subculture populations

Each corporation's unique characteristics, priorities, values, and resources will pose barriers to preparedness if these unique factors are not incorporated into preparedness programs or training. However, the correct identification of a corporate "language" — sensitive to corporate culture, priorities and unique characteristics — and the development of programs and training informed and delivered in this "language", can assist in overcoming this barrier. In addition, this strategy can provide an opportunity to enhance leadership support for and employee participation in terrorism preparedness. Behavioral research on crowd behavior (Mawson, 2005; Aguirre, 2005) has important implications for employee training. Corporate leadership needs to be aware of such findings to provide the most effective training.

Conclusions and Future Steps

Corporations are communities unto themselves with their own culture and values. Intrinsic to the culture of a corporation is its own experience with disaster, which shapes its beliefs, threat assessment and responses to critical incidents and their management. While corporations depend on the federal government for threat assessment information, industry is better positioned to prepare employees and to provide post-disaster interventions.

Employed individuals spend more than a third of their day at work (IOM, 2003), and work is most often the source of one's health benefits. There is increasing evidence that workplace health promotion activities and programs can change behavior and psychosocial risk factors for individual employees and the collective risk profile of the employee population (IOM, 2003b; Mangione et al. 1998). Two times as many individuals experiencing persistent distress after 9/11 accessed information at work rather than from a medical practitioner, and over three times as many sought information and counseling at work rather than from a mental health provider assumedly in a community setting (Stein et al. 2003).

This study revealed a number of barriers and opportunities for human continuity preparedness. These areas require both organizational changes and education of key corporate function leaders. Corporations must have an integrated crisis management team with cross-functionality. Educational programs and materials to encourage corporations to undertake employee preparedness and practice of preparedness behaviors are needed. Education should take place in ways that foster integration of the critical incident team and include didactic and practical instruction. The opportunity to develop lessons learned from past or future disaster events can also bring together corporations to share and develop new human continuity planning and response needs.

Workplace preparedness for disaster and terrorism is essential to protect and sustain our nation's security, defense and public health in the 21st century. Workplace preparedness is critical to citizen preparedness. Educating employees about terrorism and bioterrorism and response behaviors helps individuals educate and prepare their families, their communities and our nation. Regardless of their location or locations, all employees are subject to threat exposure or actual terrorist events through their own travel, travel of family members, changes in workplace environment or through an attack of weapons of mass destruction or pandemic outbreak, which would affect large areas of the country. Natural disasters such as the recent hurricanes and floods, terrorism and bioterrorism such as 9/11 and the anthrax attacks, and pandemic threats from SARS and Avian Flu require an informed and resilient workplace and workforce.

Although Hurricane Katrina occurred after this study was completed observations of the response effort reinforce corporate interviewee concerns calling for coordination of efforts between the private sector and all levels of government. This natural disaster, with its far-reaching effects, provides opportunities to develop lessons learned for the public/private sector coordination that would be required after an attack with weapons of mass destruction.

The CSTS project demonstrated the willingness of corporations to engage in an exploration of their human continuity terrorism preparedness with external academic institutions. This willingness appears to be predicated on an institutional approach that capitalizes on previously established relationships, engages corporations with a study question of interest to the corporation itself, and takes specific measures to protect the confidentiality of information and informants and to direct inquiries in a manner not viewed as threatening to competitive proprietary interests or corporate security practices.

Defining Future Steps

Based on this study the following are needed:
1. Initiate targeted knowledge dissemination programs for a) corporate leadership, and b) corporate functional leaders (e.g. security, occupational health (medical and EAP), human resources and communication). Educational programs should foster integrated disaster planning for human continuity. Such a program needs to include knowledge about organizational and behavioral responses to terrorism, interventions and scenario training. Scenario based education in particular using 9/11 and hurricane Katrina as case studies for planning and response to complex catastrophic events which include loss of infrastructure can yield increased knowledge and preparedness. Writing useable scenarios that can teach human continuity requires expertise in terrorism preparedness, disaster response, human behavior and teaching/education. The Center for the Study of Traumatic Stress (CSTS) is uniquely positioned and skilled in this task.

   In addition, the CSTS is presently seeking partners to join in support of funding received from SAMSHA for the first knowledge dissemination conference for corporate preparedness. This meeting will be a major step in both educating for human continuity and bringing together various corporate functions, across various industries, to share knowledge and practice and identify gaps in terrorism preparedness for human continuity.

2. Develop educational materials for corporate human continuity preparedness and response. A model for this is the "Courage to Care" health education program of the CSTS. The CSTS has initiated an extremely successful health education campaign that is now distributed around the nation and the globe. Directed to medical providers and others who reach the public "Courage to Care" is based on finding "teachable moments. It has been distributed with information on preparing for influenza, helping families think about evacuation, and training families and health care providers in psychological first aid. This program is a model of what is needed for the corporate functions of security, human resources, and occupational health (medical and EAP),

3. Provide real time knowledge dissemination/consultation to corporate disaster/critical incidents to foster human continuity. This is a model the

CSTS has used for many years to develop rapid information and disseminate it in response to real time questions. For example, recently the CSTS provided corporate consultation and knowledge materials for human continuity for the Katrina hurricane, addressing the issues of "continuous operations" required for recovery.

4. Develop lessons learned from corporate experience with Hurricane Katrina as an event that can teach about response and recovery for weapons of mass destruction. The CSTS has consistently held lessons learned meetings for issues of bioterrorism, and other weapons of mass destruction, yielding important recommendations for use by public and private agencies. The development of a three day conference of security, human resource and occupational health corporate leaders, in conjunction with academic and operators, to think together on the present barriers to preparedness and needed programs could yield highly valuable input often not developed in ways that are useable. The CSTS had a record of successful Lessons Learned meetings that have influenced federal, state and private agencies. Such a meeting can also identify regulatory and legal agendas for preparedness response.

5. Expand the present study to a survey based approach of various groups (e.g. security, EAP) to increase knowledge of barrier and opportunities for preparedness across a wide range of corporations. Additional knowledge is needed. Systematic information collected now with the assistance of partnerships with the corporations and individuals who participated in our study—nearly all of whom volunteered to be resources in the future—could yield corporate study of corporate preparedness backed by the skills and knowledge of the CSTS.

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Appendix A
Study Team

Robert J. Ursano, M.D.

Robert J. Ursano, M.D. is Professor of Psychiatry and Neuroscience and Chairman of the Department of Psychiatry at the Uniformed Services University of the Health Sciences, Bethesda, Maryland. He is Director of the Center for the Study of Traumatic Stress which has over six million dollars in research funding. In addition, Dr. Ursano is Editor of Psychiatry, the distinguished journal of interpersonal and biological processes, founded by Harry Stack Sullivan.

Dr. Ursano was educated at the University of Notre Dame and Yale University School of Medicine and did his psychiatric training at Wilford Hall USAF Medical Center and Yale University. Dr. Ursano graduated from the Washington Psychoanalytic Institute in 1986 and is a member of the teaching faculty of the Institute. Dr. Ursano served as the Department of Defense representative to the National Advisory Mental Health Council of the National Institute of Mental Health and is a past member of the Veterans Affairs Mental Health Study Section and the National Institute of Mental Health Rapid Trauma and Disaster Grant Review Section. He is a Fellow in the American Psychiatric Association, the American College of Psychiatrists, and the American College of Psychoanalysts and is listed in Who's Who, Who's Who in America and Who's Who in Medicine and Health Care.

Dr. Ursano was the first Chairman of the American Psychiatric Association's Committee on Psychiatric Dimensions of Disaster. Through his work with the Committee, the American Psychiatric Association established a collaborative relationship with the Red Cross, the Bruno Lima Award to recognize contributors to psychiatric care in times of disaster, and the Eric Lindemann Grant to support disaster services. This work greatly aided the integration of psychiatry and public health in times of disaster and terrorism. Dr. Ursano was an invited participant to the White House Mental Health Conference in 1999. He has received the Department of Defense Humanitarian Service Award and the highest award of the International Traumatic Stress Society, The Lifetime Achievement Award, for "outstanding and fundamental contributions to understanding traumatic stress." He is the recipient of the William C. Porter Award from the Association of Military Surgeons of the United States.

Dr Ursano is a member of the Advisory Board of the National Partnership for Workplace Mental Health (American Psychiatric Association); the White Paper Panel on Bioterrorism and Health Care, Joint Commission on Accredita-

tion of Health Care Organizations; the Scientific Advisory Board on Bioterrorism of SAMSHA (HHS), Center for Mental Health Services; the Advisory Board of the Center on Terrorism of the University of Oklahoma School of Medicine; the National Academies of Science, Institute of Medicine, Committee on Psychological Responses to Terrorism; and the National Institute of Mental Health Task Force on Mental Health Surveillance After Terrorist Attack.

Dr. Ursano has over 200 publications. He is co-author or editor of seven books. His publications include the widely cited and referenced "Psychiatric Dimensions of Disaster: Patient Care, Community Consultation, and Preventive Medicine" in the Harvard Review of Psychiatry and the internationally recognized volume Individual and Community Responses to Trauma and Disaster: The Structure of Human Chaos. (Cambridge University Press.) His books on psychotherapy have been translated and published in Russia, Turkey, China and Japan.

Dr. Ursano is widely published in the areas of Post-Traumatic Stress Disorder and the psychological effects of terrorism, bioterrorism, traumatic events and disasters and combat. He and his team have served as consultants and completed studies on numerous disasters, disaster rescue workers, motor vehicle accident victims, family violence, and Viet Nam, Desert Storm and Gulf War veterans. His research group completed the follow-up studies of the USAF Vietnam era prisoners of war, identifying the critical role of degree of exposure to outcome, resiliency, and the development of psychiatric disease in those with no known risk factors. More recently, he was part of the design of the repatriation of the Desert Storm prisoners of war. His work on disaster first responders is noted for the focus on public health needs. His group has studied the psychiatric responses of individuals to disasters and to small-scale traumatic events including motor vehicle collisions in order to better understand the human trauma response and its mechanisms of disease and recovery.

Dr. Ursano and his group are at the forefront of public health policy planning for terrorism, and bioterrorism in particular. Their work has been widely cited in government planning and Institute of Medicine, National Academies of Sciences reports addressing these issues. He was a national consultant for planning clinical care responses and research programs following the September 11th terrorist attacks, providing consultation to New York State Governor's Office, New York City Mayor's Office, Department of HHS, National Capital response teams and the Department of Defense Pentagon response groups. His group developed educational materials that were some of the most widely disseminated throughout the nation to assist populations exposed to the September 11 attack.

Dr. Ursano's research has been funded by the National Institute of Mental Health, SAMSHA, CDC, NIOSH, the Sloan Foundation, the United States Army, the United States Air Force, and other national foundations and agencies.

Nancy T. Vineburgh, M.A.

Nancy T. Vineburgh, M.A. is Assistant Professor in the Department of Psychiatry at The Uniformed Services University of the Health Sciences in Bethesda, Maryland. She serves as the Director of the Office of Public Education and Preparedness at the Center for the Study of Traumatic Stress (CSTS).

Ms. Vineburgh is an expert in health communication, health marketing and public education with a focus on the workplace. She has created numerous, high profile public education campaigns that have generated national and international attention: Fight the Bite, the nation's first health campaign for

Lyme Disease awareness; Courage to Care, an electronic campaign addressing the well-being of deployed soldiers and their families; Can a Depressed Parent Be a Good Parent, You Bet, the nation's first campaign on parental depression sponsored by Children's Hospital Boston; Where to Draw the Line, a three year campaign for National Alcohol Screening Day sponsored by NIAAA and SAMHSA; Our Nation's Resilience: Paintings, Public Education and Preparedness for Terrorism, an art exhibit to educate the nation about terrorism preparedness on display in the Rotunda of the Russell Senate Office Building, Washington, D.C throughout the week of September 11, 2005.

She is Co-Principal Investigator of a research study, Workplace Preparedness for Terrorism, funded by the Alfred P. Sloan Foundation. Her published paper, The Power of the Pink Ribbon: Raising Awareness of the Mental Health Implications of Terrorism in the Journal Psychiatry influenced public policy and led to Maryland's proclamation of National Resiliency Day on September 11, 2004, an official event to be held annually.

Her work has earned numerous awards including Woman of the Future by Hartford Woman Newspaper in recognition for her broadcasting on women's health; The Combined Health Appeal Media Award and Connecticut's Arthritis Foundation Public Education Award for her work related to Lyme Disease education.

Ms. Vineburgh received her B.A. from Connecticut College in New London, Connecticut, her M.A. in counseling from St. Joseph College, West Hartford, Connecticut, and attended Harvard University Graduate School of Education. She is a member of the Washington School of Psychiatry, the American Public Health Association, the Employee Assistance Professionals Association and Employee Assistance Society of North America.

Dr. Robert K. Gifford, Ph.D.

Robert K. Gifford, Ph.D., is a senior scientist in the Center for the Study of Traumatic Stress at the Uniformed Services University of the Health Sciences, specializing in the study of traumatic stress in the workplace, particularly combat stress, operational stress, accidents, and the aftermath of workplace incidents. His advanced degrees include Doctor of Philosophy and Master of Philosophy degrees, both in psychology, from Yale University, and a Master of Science in clinical psychology from Saint Mary's University in San Antonio, Texas. Dr. Gifford served in the United States Army for thirty years, retiring as a colonel. While in the Army, he conducted psychological research in the field in the Persian Gulf War (Operation Desert Shield/Storm), in Somalia, and in Bosnia as well as at field sites in Germany and the United States. He served as Research Psychology Consultant to The Army Surgeon General and later as the Army Medical Service Corps' Assistant Chief for Medical Allied Sciences.

Dr. Gifford's research interests include creating resiliency in organizations; the role of group, organizational, and community factors in facilitating a return to normal function after disaster or traumatic loss; and grief leadership — the effect of leaders' behavior and communication on group recovery. He has extensive experience with both interview research at multiple levels within organizations, and survey questionnaires for larger populations. He has also been active in education about traumatic stress and developing resiliency in organizations and individuals, having lectured on the topic both in the United States and in Europe. His publications include the entry on "War and Conflict: Effects on Military Personnel" for the *Encyclopedia of Psychology*, published by the American Psychological Association and Oxford University Press.

David M. Benedek, M.D., LTC, MC, U.S.A.

Dr. Benedek received his B.A. from the University of Virginia in 1986 and his M.D. from the Uniformed Services University School of medicine in 1991. After Internship and Residency in Psychiatry at Walter Reed Army Medical Center, he was assigned as Division Psychiatrist, First Armor Division, Germany. From there, he deployed to the former Yugoslavia and delivered mental health support to U.S. and NATO Troops for Operation Joint Endeavor (1996). He returned to Walter Reed to complete forensic psychiatry fellowship training in 1998 and then served as the Assistant Chief of Inpatient Psychiatry, Walter Reed Army Medical Center. In 1999 he became Chief, Forensic Psychiatry Service, and Director, National Capital Consortium Military Forensic Psychiatry Fellowship Program at Walter Reed, and he remained in those positions until joining the USUHS/CSTS faculty in 2004. Dr. Benedek's awards include the Meritorious Service (2OLC) and Army Commendation (3OLC) Medals for his work at Walter Reed and in Bosnia, the LTG Claire Chennault Award for Outstanding Military Psychiatry Faculty Member, and the American Psychiatric Association's Nancy C.A. Roeske Award for Excellence in Medical Student Education. In 2002 he received the U.S. Army Surgeon General's "A" Proficiency Designator. He has authored or co-authored over 30 scientific publications, and has presented on numerous aspects of military, disaster, and forensic psychiatry at regional, national, and international professional conferences. His studies include first responders to the December 2004 tsunami and he has written extensively on traumatic death and grief recovery. In addition, he was a major contributor to the development of Rapid Knowledge Dissemination Program for Hurricane Katrina national and local responders. Dr Benedek serves on the American Psychiatric Association's Committee on Confidentiality was a consultant to the Association's Practice Guideline for the treatment of Acute Stress Disorder and Posttraumatic Stress Disorder work-group in the development of its recently published practice guideline.

Dr. Benedek is an Associate Professor of Psychiatry and Scientist at the Center for the Study of Traumatic Stress, Uniformed Services University of the Health Sciences. He is a Past President of the Society of Uniformed Service Psychiatrists—the Military District Branch of the American Psychiatric Association. He was recently selected as a Distinguished Fellow of the American Psychiatric Association. In addition to his operational experience in Bosnia and Croatia Dr. Benedek has deployed to Cuba, Iraq and Kuwait in conjunction with the Global War on Terrorism. In 2004 he was appointed Consultant to the U.S. Army Surgeon General for Forensic Psychiatry. He has been married since 1991 to Cindy Bierman of Bowie, MD and he and his wife reside in Clarksville Maryland with their four children.

Carol S. Fullerton, Ph.D.

Carol S. Fullerton, Ph.D. is Research Professor in the Department of Psychiatry at the Uniformed Services University of the Health Sciences School of Medicine (USUHS), Bethesda, Maryland. She is the Scientific Director of the Center for the Study of Traumatic Stress (CSTS), an interdisciplinary Center with an established an International reputation for research, education and consultation on the effects of terrorism, bioterrorism, trauma, disasters, and war on individuals, communities and groups.

Dr Fullerton was educated at Alfred University, New York, and did her graduate work in Psychology at the University of Maryland. Dr. Fullerton's research and consultation to disaster populations was recognized by the awarding of the Department of Defense Meritorious Service Medal in 1990, and the

USUHS Exceptional Service Medal in 1993. Dr. Fullerton is the 2005 recipient of the James Leonard Award for Excellence in Clinical Research, USUHS. Dr. Fullerton's research on the acute and long term effects of trauma exposure on disaster workers was selected as the feature article for the August 2004 volume of one of the most prestigious journals in psychiatry, the American Journal of Psychiatry.

Dr. Fullerton and her group established the Military and Disaster Psychiatry Fellowship, an International program to train psychiatrists and other mental health providers. Under her leadership the Department of Psychiatry also established the Clinical Scientist Training Program in Disaster Psychiatry at USUHS.

Dr. Fullerton is widely published in the areas of post-traumatic stress disorder and the behavioral and psychological effects of terrorism, bioterrorism, traumatic events and disasters, and combat. Dr. Fullerton has over 100 publications. She is editor or co-author on 5 books: Bioterrorism: Psychological and Public Health Interventions (Cambridge University Press, 2004); Terrorism and Disaster: Individual and Community Mental Health Interventions (Cambridge University Press, 2003); Mental Health and Mass Violence: Evidence Based Early Psychological Intervention for Victims/Survivors of Mass Violence (National Institute of Health Publication No. 02-5138, 2002); Posttraumatic Stress Disorder: Acute and Chronic (American Psychiatric Association Press, 1997); and Individual and Community Responses to Trauma and Disaster: The Structure of Human Chaos (Cambridge University Press, 1994). Dr. Fullerton's articles are frequently cited because of the contributions to developing response capabilities to terrorism, bioterrorism, disaster, and war.

Dr. Fullerton Co-directed two International conferences that resulted in two published monographs that were widely circulated in congress and served as the basis for congressional recommendations for the nation's security: Planning for Bioterrorism: Behavior & Mental Health Responses to Weapons of Mass Weapons of Mass Destruction & Mass Disruption (DTIC: 142, 2000); and Responses to Terrorism & Infectious Disease Outbreaks: Planning for Biological Events (2001).

Dr. Fullerton has conducted empirical investigations and provided consultation to the following disaster and traumatic events: Ramstein Air Force Base air show crash; Norton Air Force Base cargo plane crash; USS Iowa gun turret explosion; United Flight 232 DC-10 crash, Sioux City, Iowa; Armenian earthquake; Operation Desert Storm; the USNS Comfort Desert Storm deployments; Typhoon Ohmar; Hurricane Andrew; dentists following Waco disaster; 9/11 Pentagon personnel; USNS Comfort 9/11 deployment; DC Sniper attacks; motor vehicle accidents; effect of terrorism on State Department Officers and families; the effects of the 2004 Florida hurricanes on the FL Department of Health; and the 2004 South East Asia Tsunami.

Dr. Fullerton and her group are at the forefront of public health policy planning for terrorism, and bioterrorism. Her work has been widely cited in government planning and Institute of Medicine, National Academies of Sciences reports addressing these issues. She was a national consultant for planning research programs following the September 11th terrorist attacks. Dr. Fullerton and her group developed educational materials that were some of the most widely disseminated throughout the nation to assist populations exposed to the September 11th attacks.

Dr. Fullerton's research has been funded by the National Institute of Mental Health, the United States Army, the United States Air Force, CDC, SAMSHA, NIOSH and other national foundations and agencies.

Appendix B
Study Procedures

Preliminary Interviews

The Center for the Study of Traumatic Stress (CSTS) undertook a study of several, large U.S. corporations to examine corporate human continuity preparedness. Importantly, the goal of our study was not to compare the levels of terrorism preparedness or types of preparedness programs in participating corporations. Nor was it to evaluate or rate the level of preparedness of individual companies, or to generalize from this sample about the levels of preparedness of various industries. Rather, our aims were to identify barriers and opportunities for corporate human continuity preparedness (across a range of industries) and to identify potential avenues to establish greater terrorism preparedness of US citizens through corporate preparedness.

Observations on the corporations' overall view of and approach to terrorism and disaster preparedness were collected. In addition, data on emotional and behavioral functioning, role of security operations in corporate culture, human resource planning, employee assistance organization, financial and insurance aspects of preparedness, medical protective measures and planning, worksite safety, organizational structure and the role of corporate values in influencing workplace and community preparedness behaviors were collected and analyzed for barriers and opportunities for workplace human continuity preparedness.. This information was collected from senior leadership in each corporation and leaders of the specific areas of interest.

We met with management and leadership personnel from four organizations in New York City to obtain background information regarding their perceptions of barriers to, and opportunities for educating employees and corporations on terrorism preparedness to ensure human continuity and employee preparedness. These organizations included: 1) a prominent, private consulting firm specializing in consultation to national and international leadership on homeland security; 2) two multi-national corporations, and 3) an academic center for emergency preparedness. Each of these had been involved in New York City's response to 9/11. In these meetings, interviewees identified topics that formed the basis for the semi-structured interviews utilized in phase three of this project.

Our discussions at the consulting firm identified threat assessment and threat awareness, both creating and sustaining it, as primary concerns for human preparedness. Both of these concepts were described as prerequisites for terrorism preparedness. One partner in the firm expressed his opinion that the

greatest barrier to preparedness is the confusion experienced by the public and the corporate sector to interpret threat. He referred to Homeland Security's color code as an example of this ambiguity. "The problem is how you get people and organizations to plan when they don't know how to interpret a threat." He also pointed out the fine line between "fear mongering and threat reality," as requiring important and difficult decisions in all organizations and city, state and federal planning for communication about critical incidents.

According to this interviewee, a threat becomes real to people when it is part of a "story" e.g. an event with meaning and relevance to the people — such as 9/11 in New York City., An event that is relevant and meaningful becomes a story which can be incorporated into an individual's psyche and/or the culture of an organization. The challenge, he stated, was in transposing a story into changing behaviors and sustaining these changes through public education campaigns and other vehicles. He indicated that schools are also very important vehicles of public education for preparedness. When we educate children, we educate parents, families and the community.

Another partner emphasized that the public is also educated about threat assessment, awareness and preparedness through establishing a particular relationship between the individuals of the community and the first responders. In particular fire departments play an important role in this process because they are seen as part of the community and as "friendly rescuers", not always true of law enforcement. The open doors of the fire house, literally and figuratively, can provide ongoing threat knowledge, awareness and preparedness. A fire department that is open to its community raises community awareness and fosters cohesion. He pointed out that human nature is another barrier to threat awareness and preparedness as we want to forget, and often those who remember become isolated and seen as out of main stream. "We love to put evil behind us."

At one corporate interview, the role of occupational health services in protecting and ensuring a corporation's security, continuity of business and employee wellbeing was the focus. We conducted a joint interview with the organization's Director of Health Promotion, EAP and Lifeworks and the assistant medical director in charge of primary care, international regulatory compliance and travel health. The corporation had experienced a number of post 9/11 threats including the anthrax scare, SARS, being an identified workplace target of Al Qaeda, and heightened security around the Republican convention in 2004. The primary response group of the corporation was the crisis management team. This team included the functions of business continuity, security, corporate real estate, the medical director, human resources, and corporate communications addressed issues around the implications of these threats on employee health and performance.

Our interviewees underscored the importance of collaboration within occupational health services. Those tasked with responsibilities for the psychological and behavioral needs of employees and those tasked with the medical needed to work together. Both health and mental health had to be considered and coordinated in disaster, terrorism and bioterrorism preparedness, response, and recovery. This included planning for behavioral issues such as flu shots and the rates of participation in these programs; to evacuation for drills and real events – how people participated or not — and observed spikes in counseling needs post 9/11. Despite coordinated efforts, one of the interviewees commented, "There is no single policy that will address a Mary or a John's fear about coming to work." The roll of cell phones as providing connectedness was also mentioned and the wish after 9/11 to "stay at home" rather than travel.

This company identified three other factors that can be barriers or opportunities for workplace preparedness. These factors involve a corporation's culture and values, the role of corporate communications, and the interface between internal and external resources and vendors

We met with the crisis management team at a corporation considered by experts as having very well developed terrorism preparedness. The crisis team narrated their individual experiences and the experiences of their corporation around 9/11 in which they were active participants in the event as well as lessons learned and preparedness solutions.

Among the lessons learned was the importance of accounting for their people and communicating that their people matter. Leadership communicated this from the moment of impact. Corporate communications and the active communication of security with employees, referred to as security transparency, supports this corporate value and culture. Achieving this transparency is a process in which corporate security takes a leadership role in employee education around disaster and terrorism preparedness. The process involves close working relationships with employee assistance, human resources and corporate communications. This trend and process of corporate security transparency and its link to employee education and creating a culture of safety is borne out by our key informant interviews.

At an academic center for preparedness, we discussed the issues of the business case for preparedness in the private sector and the importance of providing training in regulatory and insurance issues. (see Appendix C for a list of major topic areas identified for study)

Procedures

Based on the concepts and issues identified as germane to employee preparedness in our back-ground interviews, our Center's scholarship and consultative involvement around psychological, behavioral and health consequences of terrorism and their impact on organizational responses and recovery, a literature review (see Introduction), we developed a semi-structured interview. In addition to the interview form we developed an interviewer's guide which identified interview techniques for expanding and clarifying responses elicited from key informants to initial questions. We also developed procedures for protecting the rights and confidentiality of study participants and their organizations. Following review and approval by the Uniformed Services University of the Health Sciences (USUHS) Institutional Review Board, we initiated contact with corporations to solicit their participation in the formal study.

The semi-structured interview afforded the opportunity to listen to the nuances, the language and the examples of disaster events and critical incidents that interviewees shared in describing their corporation's experience around human preparedness The ability to be present, to listen to, and talk with individuals tasked with corporate strategic level crisis management planning and response, provided an opportunity to expand and clarify initial answers and a quality that may be lost in mailed surveys or web-based questionnaires.

Center investigators selected four multinational Fortune 500 corporations as candidates for formal study participation. Three of these corporations agreed to participate in the study. The participating corporations, headquartered in the Midwest, Northeast, and Mid-Atlantic regions, represented food processing, chemical manufacturing, and financial services. The fourth corporation was still considering participation in the study when our data collection phase ended.

We conducted 20 in person, key informant interviews at the headquarters

of the three Fortune 500 corporations that joined the study. Each corporation selected interviewees who were knowledgeable about and/or involved in the corporation's crisis management. The study team suggested potential key-informant positions to an identified point of contact at each corporation, but the ultimate selection of participants for interview was left to the discretion of the corporate point of contact. All prospective participants were told that they did not have to consent to the interviews and that if they did not, no one would be told of their refusal. We met with executives and senior level individuals whose functions included: CEO, global security, human resources, corporate communications, employee relations, senior line management, and occupational health services including medical, health promotion and wellness, and employee assistance.

TABLE: Study Interviewees

Corporate Operations	
CEO	1
Vice Presidents/ Presidents of subsidiaries	7
Corporate Management	
Vice President/Director/Asst Director Human Resources	5
Vice President/Directors Employee Assistance	3
External EAP/Consultants	2
Corporate Medical Directors/Asst Director	3
Corporate Global Security	
Directors/ Deputy Directors	7
Senior Partners/Consultants Private Security	3
External Security Analyst	1
Academic Centers	
Faculty/staff	10

The majority of interviewees were employees of the corporation, but some interviewees were vendors that provided contracted services to the corporations. As noted above, interviewees were informed that participation was optional. In the only instance where a corporate employee refused to participate, his objections appeared to be over the requirement to sign an informed consent document (without opportunity for his attorney to review it) rather than any objections to the format or content of the proposed interview per se. This individual was not interviewed and his data are not included in this report.

The Center's interview team consisted of four members: the Center's Director and three Center scientists with diverse backgrounds and work experience. Two team members were psychiatrists whose expertise in military and disaster psychiatry involved clinical, academic and consultative work. One member was a Ph.D. in psychology whose scientific research areas involved social psychology, traumatic stress, and organizational responses to critical incidents. The fourth member, an M.A. in counseling and human behavior, had extensive experience developing and marketing health promotion programs and educational materials used by Fortune 500 corporations, federal, state and local agen-

cies. All members have provided education and consultation to corporate and national leadership, and leading federal, state and local agencies.

Before each site visit, the team sent participating corporations a list of the questions we would ask and a copy of the informed consent document (including the nondisclosure agreement). These documents were reviewed and approved by corporate legal staff prior to site visits and interviews.

We had conceptualized an interview format in which two Center team members would conduct one key informant interview. While the first two would write up or expand any notes from one interview session, two other team members would then conduct the next interview session. We did not adhere to this plan because our point of contact at each site had scheduled the interviews in a manner that enabled our entire team to be present for the majority of the 20 interviews. Interviews began with introductions after which one team member explained the purpose and procedures of the interview, as outlined in the informed consent document. Participant concerns or questions were addressed before consent documents were signed and witnessed and the formal interviews commenced. The interviews, originally intended to be one hour, actually lasted 75–90 minutes, because participants became engaged in the process and gave more detailed discussion than anticipated.

Site Visits

Corporation One is in agricultural and food processing. With operations in the U.S., Canada, Latin America, Europe, Asia and the Pacific Rim, the company interfaces with farming communities and food companies. The company relies upon its own extensive transportation resources and contracted global transportation networks of rail, highways and rivers.

The study team met with corporate line managers, President of the transportation company, head of insurance and global risk, chief global security officer, chief human resource officer, director of wellness and EAP, medical director, and the CEO.

Corporation Two, a leader in industrial services, operates in more than 70 countries. The corporation provides products and services for diverse markets in food and nutrition, health care, apparel, safety and security, construction, electronics and transportation. The corporate culture and operating principles are deeply embedded in workplace safety.

This corporation scheduled five key-informant interviews for the study team with senior management. We conducted only four, as one of the identified interviewees was sick. We met with the company's manager of crisis operations, director of global security, chief medical officer and EAP global regional director.

Corporation Three is a leading global finance company serving corporations, governments and municipalities, institutions, and private citizens. Its services include securities trading, research, investment banking, private investment management, asset management and private equity. The corporation operates worldwide. The study team interviewed 5 senior level officers: one representative each from security, human resources, employee relations and communications, and employee assistance.

The process of gaining access to corporations was complex and time intensive. Each site visit required twenty to thirty hours of preliminary coordination. In all instances prior relationships greatly facilitated access to the key informants who were interviewed during the formal study. Indeed, the corporate individuals who ultimately facilitated our entrée into their companies

communicated their high regard for the Center, its Director and members of our team. We responded in a timely manner to all follow up requests from corporations. This often involved multiple conference calls with each corporation to explain the project to the point of contact's crisis management colleagues or team, emailing of materials explaining the project and its goals, and letters to legal departments whose approval was key in several instances for participation in the study. .

Our focus on psychological and behavioral issues appeared to facilitate corporations' willingness to participate in the study. This focus, on an area that participant corporations recognized as an aspect of preparedness that they had not themselves fully developed appears not to have threatened their perception of the proprietary nature of their own security issues or programs, nor to have concerned corporate leaders as an area of investigation that might infringe upon or compromise existing corporate security. This focus—according to interviewees—provided corporations with a sense that they might have something to gain and something to learn by participating in an independent exploration into the "uncharted waters," of psychological and behavioral issues of workplace preparedness.

Appendix C

Topics Identified for Study of Corporate Preparedness

Awareness versus Fear
Changing Behavior
Sustaining Preparedness

Threat Awareness — how to create and sustain
Threat Perception — influenced by a defining event
Threat Assessment — requires information, expertise, and shared
    information
Defining Event — present or absent
Collaboration of corporations with local resources — police,
    firefighters, etc.

Corporate integration and collaboration across security, occupational
    health (medical and EAP), human resources
Practice regular preparedness, e.g., flu shots, evacuation drills
Post event: return to work vs. stay at home
Corporate communication to employees: cell phones, web, memos, people
    to people, leadership to employees, employees to leadership
Corporate culture: a community of safety/"people first"
Internal versus external corporate resources for employee health
    and wellness
Suppliers, distributors and markets

Leadership Communication in Crisis
Leadership role of security
Business case for preparedness is required
Costs of preparedness include: insurance, training, response to regulations,
    time loss, legal costs

Appendix D

Model of Corporate Preparedness:
Event, Response and Recovery

Corporate Preparedness and Human Continuity

Terrorist Event/
CRITICAL INCIDENT

Nature of Incident   **Severity of Incident**

Human Made   **Terrorist**   **Natural**
Accident   **Attack**   **Disaster**

RESPONSE MEDIATORS

Corporate History   Training
Defining Events   Disaster Plan
Loss/Destruction Corp. Resources   Communications
Availability/Loss Key Personnel   Leadership Characteristics
Integration of Security/HR/Occ Health   Community Integration

HUMAN CONTINUITY OUTCOMES

Organizational   Behavioral   Psychological   Behavioral

Resilience   Distress   Illness   Function   Risk Behaviors