CHEVRON
PUBLISHING CORPORATION

PO Box 6274
Ellicott City, MD 21042 USA
Telephone: (410) 418-8002
Fax: (410) 418-8006
office@chevronpublishing.com

Purpose and Scope

The **International Journal of Emergency Mental Health** provides a peer-reviewed forum for researchers, scholars, clinicians, and administrators to report, disseminate, and discuss information with the goal of improving practice and research in the field of emergency mental health.

The **International Journal of Emergency Mental Health** is a multidisciplinary quarterly designed to be the premier international forum and authority for the discussion of all aspects of emergency mental health.

The **Journal** publishes manuscripts (APA style) on relevant topics including psychological trauma, disaster psychology, traumatic stress, crisis intervention, emergency services, Critical Incident Stress Management, war, occupational stress and crisis, employee assistance programs, violence, terrorism, emergency medicine and surgery, emergency nursing, suicidology, burnout, and compassion fatigue. The **Journal** publishes original research, case studies, innovations in program development, scholarly reviews, theoretical discourse, and book reviews.

Additionally, the **Journal** encourages the submission of philosophical reflections, responsible speculations, and commentary. As special features, the **Journal** provides an ongoing continuing education series providing topical reviews and updates relevant to emergency mental health as well as an ongoing annotated research updates of relevant papers published elsewhere, thus making the **Journal** a unique and even more valuable reference resource.

In accordance with the American National Standard/National Information Standards Organization (ANSI/NISO), this journal is printed on acid-free paper.

INTERNATIONAL JOURNAL OF
EMERGENCY MENTAL HEALTH

International Journal of Emergency Mental Health (ISSN 1522-4821) is published quarterly by Chevron Publishing Corporation, Inc., PO Box 6274, Ellicott City, MD 21042 USA. Fourth class postage rates paid at Ellicott City, Maryland.

- SUBSCRIPTION PRICES: 2011 (four issues): Institutions: $390.00 (Foreign: $485.00); Individuals $82.00 (Foreign: $128.00) payable in U.S. funds through a U.S. bank. Credit card orders may be placed by calling (410) 418-8002.
- SINGLE ISSUES: Available from the publisher for $25.00 per issue.
- CHANGE OF ADDRESS: Please inform the publisher at least six weeks prior to any change. If possible, include old mailing label.

Call for Papers

INTERNATIONAL JOURNAL OF
EMERGENCY MENTAL HEALTH

The ***International Journal of Emergency Mental Health*** is a practice-oriented resource for active professionals in the fields of psychology, law enforcement, public safety, emergency medical services, mental health, education, criminal justice, social work, pastoral counseling, and the military. The journal publishes articles dealing with traumatic stress, crisis intervention, specialized counseling and psychotherapy, suicide intervention, crime victim trauma, hostage crises, disaster response and terrorism, bullying and school violence, workplace violence and corporate crisis management, medical disability stress, armed services trauma and military psychology, helper stress and vicarious trauma, family crisis intervention, and the education and training of emergency mental health professionals. The journal publishes several types of articles:

- ***Research reports:*** Empirical studies that contribute to the knowledge and understanding of traumatic disability syndromes and effective interventions.
- ***Integrative reviews:*** Articles that summarize and explain a topic of general or specialized interest to emergency medical, mental health, or public safety professionals.
- ***Practice guides****:* Reports of existing, developing, or proposed programs that provide practical guidelines, procedures, and strategies for working emergency service and mental health professionals.
- ***Case studies:*** Clinical or field reports of professional experiences that illustrate principles and/or practice guidelines for crisis intervention and emergency mental health.
- ***Book and media reviews:*** Reviews of books, films, DVDs, or electronic media of relevance to emergency response and mental health professionals.
- ***First person:*** Personal accounts of dealing with traumatic stress and crises, either as a victim or caregiver, that provide insight into coping and recovery.

The ***International Journal of Emergency Mental Health*** is ***your*** place to say something that can make a difference in the lives of victims and helpers and have a real-world impact on the daily practice of emergency medical, public safety, and mental health services.

Complete **Instructions for Authors** can be found on-line at:
www.chevronpublishing.com/authorinfo.pdf

Submit manuscripts electronically in Word format to:

Laurence Miller, PhD, Editor
International Journal of
Emergency Mental Health
Plaza Four, Suite 101
399 W. Camino Gardens Blvd.
Boca Raton, Florida 33432
docmilphd@aol.com

INTERNATIONAL JOURNAL OF
EMERGENCY MENTAL HEALTH
Volume 13 • Number 2

ORIGINAL ARTICLES

EMERGENCY MENTAL HEALTH UPDATES - Jeffrey M. Lating, Associate Editor

BOOK AND MEDIA REVIEWS - Daniel Clark, Reviews Editor

International Critical Incident Stress Foundation, Inc.

The Source for Information and Training
in Comprehensive Crisis Intervention Systems

Regional Conference Calendar

October 12-15, 2011
❖ Toronto, ON
Peel Regional Police

October 27-30, 2011
❖ Victoria, BC
Archipelago CISM Society

November 3-6, 2011
❖ Indianapolis, IN
ICISF

December 1-4, 2011
❖ San Diego, CA
San Diego County Critical Incident Stress Team

Additional dates and locations soon to be announced!

Bring ICISF Training to your group!

ICISF Speakers Bureau and
Approved Instructor Programs

Opportunites to host ICISF Conferences now available for 2012

Contact Terrip@icisf.org for more information

3290 Pine Orchard Lane, Suite 106 ❖ Ellicott City, MD 21042
Phone: (410) 750-9600 ❖ Fax: (410) 750-9601 ❖ Web: www.icisf.org

For more details, call (410) 750-9600 or visit our Web site at www.icisf.org

**Calendar dates & locations subject to change*

International Journal of Emergency Mental Health, Vol. 13, No. 2, pp. 65-67 © 2011 Chevron Publishing ISSN 1522-4821

Introduction to Special Issue Commemorating the 10th Anniversary of September 11, 2001

Guest Editor - Joseph A. Boscarino
Geisinger Clinic

Dr. Boscarino was in the World Trade Center complex on September 11, 2001 when the first plane struck the Twin Towers. His World Trade Center work was supported in part by grants from the National Institute of Mental Health (Grants # R01 MH66403 and R21-MH-086317) and the Pennsylvania Department of Health (Contract #4100042573). [International Journal of Emergency Mental Health, 2011, 13(2), pp. 65-67].

***Key words**: World Trade Center disaster, resilience, vulnerability, disaster workers, first responders*

JULY 18, 2011

Following the September 11 terrorist attacks in New York City (NYC), several large-scale studies were funded by the National Institutes of Health and other agencies to assess the impact of this catastrophic event. Our study, *"Impact of Mental Health Services in NY after WTC Disaster"* (R01# MH-66403, Boscarino PI) was one of these investigations (See: Adams & Boscarino, 2005; Adams & Boscarino, 2006; Adams, Boscarino, & Galea, 2006; Adams & Boscarino, 2011; Boscarino, Adams, & Figley, 2004; Boscarino, Adams, Stuber, & Galea, 2005; Boscarino, Adams, & Figley, 2006; Boscarino, Adams, & Galea, 2006; Boscarino, Adams, Figley, Galea, & Foa, 2006; Boscarino, Adams, Foa, & Landrigan, 2006; Boscarino & Adams, 2008; Boscarino & Adams, 2009; Boscarino, Adams, & Figley, 2011). The main purpose of our study was to assess the impact of treatments received by New York City residents following the World Trade Center attacks. The secondary purpose was to estimate the prevalence of posttraumatic stress disorder (PTSD) and to identify risk and protective factors. After the attacks, New York City agencies and institutions offered mental health service for area residents. Typically, these services were made available through the federally-funded "Project Liberty" program, which provided mental health services to the public at no or little cost. Our study offered an opportunity to assess the effectiveness of these services.

What we found in our study often surprised us. For example, following the World Trade Center attacks most individuals did *not* seek available mental health treatment, even though they may have experienced mental health problems. Other findings included:

- Those who sought mental health treatment after the attacks tended to be individuals who sought treatment *before* the attacks. Conversely, symptomatic individuals who did not seek treatment tended to be members of minority groups, did not have health insurance coverage, and tended to seek informal support from friends and neighbors.

Joseph A. Boscarino is a Senior Investigator with the Center for Health Research, Geisinger Clinic, Danville, PA: Associate Professor (Adjunct) with the Departments of Medicine & Pediatrics, Mount Sinai School of Medicine, NY, NY; and Professor (Adjunct) with the Department of Psychiatry, Temple University School of Medicine, Philadelphia, PA. Correspondence concerning this article should be addressed to Joseph A. Boscarino, PhD, MPH, Center for Health Research, Geisinger Clinic, 100 N. Academy Avenue, Danville, PA 17822-4400. Email: jaboscarino@geisinger.edu.

- Those who experienced "delayed" PTSD after the World Trade Center attacks tended to be Hispanic, non-native born, or to have recently experienced lower self-esteem and/or negative life events. Contrary to expectations, the degree of disaster exposure did not predict delayed PTSD very well. What did predict this was having a history of mental health problems and trauma exposure *before* the attacks.
- Most surprising, we found that brief interventions were the most effective after the attacks. In addition, informal social support from friends, neighbors, and spiritual communities also appeared beneficial. Conversely, those who received more extensive post-disaster interventions (e.g., formal psychotherapy sessions) appeared to have poor outcomes.
- In terms of mental resilience following the attacks, this tended to be associated with males, older persons, and those with higher self-esteem and higher social support. Resilience was also associated with having a history of fewer lifetime traumatic events before the attacks.
- Our original study also suggested that higher exposure to the World Trade Center attacks was associated with increased problem drinking and alcohol misuse after the attacks.

In this 10-year anniversary issue of the World Trade Center attacks, we include articles that further contribute to the post-disaster literature. This includes a study by Adams and Boscarino that uses Structural Equation Modeling (SEM) to examine whether perievent panic (PEP) attacks, that is, panic attacks in proximity to traumatic events, are predictive of later mental health status, including the onset of major depression. Using the World Trade Center disaster study, they show that this was not the case. Post-disaster stressors and psychosocial resources were the best predictors of post-disaster depression onset, not PEP attacks.

This quantitative study is followed by a qualitative one by Johnson and Luna, entitled "Working Toward Resilience," which represents a retrospective report of actions taken in support of a New York City school crisis team following 9/11 arracks. As the authors note, the nature of assessment and subsequent service delivery illustrates a community resilience-based approach to school crisis management.

The Johnson and Luna paper is followed by one by Levenson, which is a reflection on ten years of clinical practice in New York City since September 11, 2001. Dr. Levenson is a clinical psychologist in independent practice in the City, who volunteered on-site at Ground Zero from September 11, 2001 until November, 2002. As he notes, ten years after the attacks New Yorkers are still anxious about these events and the possibility of future attacks. In addition, many police officers that Dr. Levenson has treated since the attacks have become physically ill, adding to their anxiety levels and complicating their recoveries. This is a disturbing development, clearly warranting further investigation.

The next contribution in this 9/11 issue is a comprehensive discussion of psychological interventions for terroristic trauma by Miller. As Dr. Miller suggests, terrorist attacks combine features of a criminal assault, a mass casualty disaster, and an act of war. Accordingly, interventions focused on prevention, response, and recovery from the mental health impact of these events need to be specifically developed for individuals, families, children, large groups of survivors, and for responders.

Finally, this special 9/11 issue concludes with a contribution by Mitchell related to "collateral damage" in disaster workers. Dr. Mitchell's article reviews the key causative factors of personal distress and disruptions to teamwork in disaster relief operations. He suggests a variety of practical methods to reduce the potential of collateral damage among disaster response personnel, which is a major problem today.

At this time, key research and clinical questions still remain to be answered. Some of these include developing a better understanding of why brief post-disaster interventions were so effective after the attacks and learning why mental health treatment seeking was low among city residents. In addition, a better understanding of who is at risk for PTSD and, conversely, who is not, is also important. Finally, the mental health and physical health status of disaster workers, police officers, and firefighters deserves our utmost attention in the near future.

REFERENCES

Adams, R. E., & Boscarino, J. A. (2005). Differences in mental health outcomes among Whites, African Americans, and Hispanics following a community disaster. *Psychiatry, 68*(3), 250-265. doi:10.1521/psyc.2005.68.3.250 [doi]

Adams, R. E., & Boscarino, J. A. (2006). Predictors of PTSD and delayed PTSD after disaster: the impact of exposure and psychosocial resources. *The Journal of Nervous and Mental Disease, 194*(7), 485-493. doi:10.1097/01.nmd.0000228503.95503.e9

Adams, R. E., & Boscarino, J. A. (2011). A structural equation model of perievent panic and posttraumatic stress disorder after a community disaster. *Journal of Traumatic Stress, 24*(1), 61-69. doi:10.1002/jts.20603; 10.1002/jts.20603

Adams, R. E., Boscarino, J. A., & Galea, S. (2006). Social and psychological resources and health outcomes after the World Trade Center disaster. *Social Science & Medicine (1982), 62*(1), 176-188. doi:10.1016/j.socscimed.2005.05.008

Boscarino, J. A., & Adams, R. E. (2008). Overview of findings from the World Trade Center Disaster Outcome Study: recommendations for future research after exposure to psychological trauma. *International Journal of Emergency Mental Health, 10*(4), 275-290.

Boscarino, J. A., & Adams, R. E. (2009). PTSD onset and course following the World Trade Center disaster: findings and implications for future research. *Social Psychiatry and Psychiatric Epidemiology, 44*(10), 887-898. doi:10.1007/s00127-009-0011-y

Boscarino, J. A., Adams, R. E., & Figley, C. R. (2004). Mental health service use 1-year after the World Trade Center disaster: implications for mental health care. *General Hospital Psychiatry, 26*(5), 346-358. doi:10.1016/j.genhosppsych.2004.05.001

Boscarino, J. A., Adams, R. E., & Figley, C. R. (2006). Worker productivity and outpatient service use after the September 11th attacks: results from the New York City terrorism outcome study. *American Journal of Industrial Medicine, 49*(8), 670-682. doi:10.1002/ajim.20340

Boscarino, J. A., Adams, R. E., & Figley, C. R. (2011). Mental health service use after the World Trade Center disaster: utilization trends and comparative effectiveness. *The Journal of Nervous and Mental Disease, 199*(2), 91-99. doi:10.1097/NMD.0b013e3182043b39

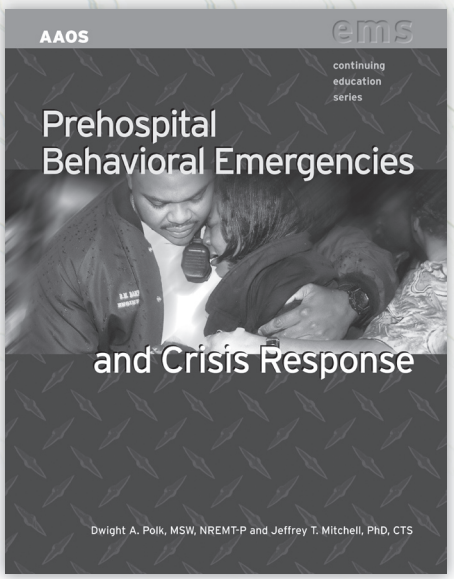
Boscarino, J. A., Adams, R. E., Figley, C. R., Galea, S., & Foa, E. B. (2006). Fear of terrorism and preparedness in New York City 2 years after the attacks: implications for disaster planning and research. *Journal of Public Health Management and Practice, 12*(6), 505-513. doi:00124784-200611000-00002 [pii]

Boscarino, J. A., Adams, R. E., Foa, E. B., & Landrigan, P. J. (2006). A propensity score analysis of brief worksite crisis interventions after the World Trade Center disaster: implications for intervention and research. *Medical Care, 44*(5), 454-462. doi:10.1097/01.mlr.0000207435.10138.36 [doi]; 00005650-200605000-00010 [pii]

Boscarino, J. A., Adams, R. E., & Galea, S. (2006). Alcohol use in New York after the terrorist attacks: a study of the effects of psychological trauma on drinking behavior. *Addictive Behaviors, 31*(4), 606-621. doi:10.1016/j.addbeh.2005.05.035

Boscarino, J. A., Adams, R. E., Stuber, J., & Galea, S. (2005). Disparities in mental health treatment following the World Trade Center Disaster: implications for mental health care and health services research. *Journal of Traumatic Stress, 18*(4), 287-297. doi:10.1002/jts.20039

A Resource for All Health Care Providers Responding to Mental Health Emergencies



Prehospital Behavioral Emergencies and Crisis Response

American Academy of Orthopaedic Surgeons, **Dwight A. Polk**, and **Jeffrey T. Mitchell**

ISBN-13: 978-0-7637-5120-3
$41.95 • Paperback • 300 Pages • © 2009

Chevron Publishing is pleased to distribute the newest addition to the American Academy of Orthopaedic Surgeons (AAOS) Continuing Education Series: ***Prehospital Behavioral Emergencies and Crisis Response***. Like all titles in this series, an Instructor's ToolKit CD-ROM including PowerPoint presentations and Lecture Outlines, is available to support this program.

Prehospital Behavioral Emergencies and Crisis Response educates providers on crisis and behavioral health issues demonstrated by patients in the prehospital environment. Separated into three parts, coverage includes:

(1) The acute behavioral crisis
(2) Chronic mental health issues
(3) Prehospital response

This resource simplifies various types of diagnosed mental disorders such as mood, personality, eating, and sleeping, as well as schizophrenia and psychosis.

To learn more about this exciting new title, or to place your order, visit Chevron Publishing online at *www.ChevronPublishing.com*, or call 1-410-418-8002 today.

Table of Contents

About the Authors

Dwight A. Polk, MSW, NREMT-P—Paramedic Program Director, University of Maryland Baltimore County

Involved in EMS since 1975, and a paramedic since 1982, Dwight Polk has held the position of Paramedic Program Director at the University of Maryland Baltimore County (UMBC) since 1990. Prior to arriving at UMBC, Mr. Polk was a field paramedic and Education Coordinator at Acadian Ambulance Service in Lafayette, Louisiana.

Jeffrey T. Mitchell, Ph.D., CTS—Clinical Professor of Emergency Health Services at the University of Maryland and President Emeritus of the International Critical Incident Stress Foundation.

After serving as a firefighter /paramedic, Dr. Mitchell developed a comprehensive, systematic, integrated and multi-component crisis intervention program called "Critical Incident Stress Management." He has authored over 250 articles and 10 books in the stress and crisis intervention fields. He serves as an adjunct faculty member of the Emergency Management Institute of the Federal Emergency Management Agency.

International Journal of Emergency Mental Health, Vol. 13, No. 2, pp. 69-79 © 2011 Chevron Publishing ISSN 1522-4821

Perievent Panic Attack and Depression after the World Trade Center Disaster: A Structural Equation Model Analysis

Richard E. Adams
Kent State University

Joseph A. Boscarino
Geisinger Clinic

Abstract: *Research suggests that perievent panic attacks – panic attacks in temporal proximity to traumatic events – are predictive of later mental health status, including the onset of depression. Using a community sample of New York City residents interviewed 1 year and 2 years after the World Trade Center Disaster, we estimated a structural equation model (SEM) using pre-disaster psychological status and post-disaster life events, together with psychosocial resources, to assess the relationship between perievent panic and later onset depression. Bivariate results revealed a significant association between perievent panic and both year-1 and year-2 depression. Results for the SEM, however, showed that perievent panic was predictive of year-1 depression, but not year-2 depression, once potential confounders were controlled. Year-2 stressors and year-2 psychosocial resources were the best predictors of year-2 depression onset. Pre-disaster psychological problems were directly implicated in year-1 depression, but not year-2 depression. We conclude that a conceptual model that includes pre- and post-disaster variables best explains the complex causal pathways between psychological status, stressor exposure, perievent panic attacks, and depression onset two years after the World Trade Center attacks.[International Journal of Emergency Mental Health, 2011, 13(2), pp. 69-79].*

Key words: *Perievent Panic Attack; Depression; Stress Process; Structural Equation Modeling; World Trade Center Disaster.*

A consistent finding in research related to traumatic events and mental health has been that social factors often influence one's mental health status following such events (Aneshensel, 2009). Thus, a person's gender, race, ethnicity, age, socioeconomic status, and other social factors have been implicated in both exposure to traumatic events and vulnerability to psychological problems following such events (Kessler, Chiu, Jin, Rusecio, Shear, & Walters, 2006; Thoits, 1995). Research has also shown that pre-existing psychopathology can be exacerbated by exposure to traumatic events and contribute to mental health problems following such exposures (Norris, Friedman, Watson, Byrne, Diaz, & Kaniasty, 2002; Rubonis, & Bickman, 1991).

In the current study, we assessed both psychosocial factors and pre-existing psychological problems to examine the relationships between exposure to the World Trade Center Disaster (WTCD), perievent panic attacks, and depression onset. We focus on panic attacks and depression because research suggests that having a history of panic attacks predicts future mental health disorders (Baillie & Rapee, 2005; Goodwin & Hamilton, 2002a; 2002b; Kessler et al., 2006; Lawyer, Resnick, Galea, Ahern, Kilpatrick, & Vlahov,

Richard E. Adams is an Associate Professor with the Department of Sociology, Kent State University, Kent, OH. Correspondence concerning this article should be addressed to Joseph A. Boscarino, PhD, MPH, Center for Health Research, Geisinger Clinic, 100 N. Academy Avenue, Danville, PA 17822-4400. Email: jaboscarino@geisinger.edu.

2006; Nandi, Tracy, Beard, Vlahov, & Galea, 2009; Nixon, Resick & Griffin, 2004; Person, Tracy, & Galea, 2006). Understanding the association between trauma exposure, perievent panic attacks, and the onset of psychological disorders, such as major depression, could be informative for treatment interventions.

Insight on panic attacks is also important because this may provide a conceptual linkage between pre-existing mental health disorders, psychosocial factors, and exposure to traumatic events, to the later onset of mental health problems (Adams & Boscarino, 2011). Some research suggests that perievent panic (PEP) attacks, that is, panic attacks in temporal proximity to traumatic exposures, have prognostic value for future mental health status (Goodwin, Brook, & Cohen, 2005; Goodwin & Hamilton, 2002; Lawyer et al., 2006). Conceptually, psychosocial factors may be connected to WTCD-related events and PEP, which in turn influence later mental health status. Exposure to traumatic events may also affect underlying psychopathology, increasing the probability of PEP and future mental health disorders.

To further investigate the linkage between PEP and psychological status, we examined depression among New York City (NYC) adults 1 year and 2 years after the disaster. The terrorist attacks in New York City on September 11, 2001, resulted in approximately 2,800 persons killed, thousands injured, and many more residents directly witnessing these events (Boscarino et al., 2004, Centers for Disease Control, 2002; Galea, Ahren, Resnick, Kilpatrick, Bucuvalas, Gold, & Vlahov, 2002).

Some of our earlier work on the WTCD suggests that PEP may be indirectly implicated in poor psychological status, particularly PTSD, in the post-trauma period via its association with later stressful events and social psychological resource loss (Adams & Boscarino, 2011; Boscarino & Adams, 2009). That is, PEP may function to lower self-esteem or social support, which in turn results in poorer mental health outcomes (e.g., persistent anxiety that depletes available social support and/or lowers their self-esteem). PEP may also lead to other negative life events or traumas in the post-disaster period, which again can increase depression. Several investigators note that a post-disaster environment can be a period characterized by the loss of social support, legal problems, property loss, as well as decreases in psychological resources (Adams et al., 2006; Hobfoll, 1989; Norris et al., 2004). Perievent panic may also reflect fundamental psychopathologies that are exacerbated by exposure to a traumatic event. Our previous work suggests that pre-WTCD psychological problems influence PTSD 1 year post-WTCD, but not 2 years afterwards (Adams & Boscarino, 2011).

Given the complex interrelationship between psychological and social factors, in the current study, we use structural equation modeling (SEM) to assess three research questions. First, is PEP related to depression 1 year and 2 years after the WTCD, after controlling for key pre- and post-disaster factors? Second, do socioeconomic factors such, as gender and income, increase the likelihood of exposure to the WTCD and experiencing PEP, or do pre-existing psychopathology explain post-disaster PEP? Third, are pre-existing conditions, socioeconomic factors, and PEP associated with increased post-disaster stressful events and/or lower psychosocial resources, which subsequently influence year-2 depression onset?

METHOD

Study Population

The data for our study come from a prospective cohort study of adults living in New York City on the day of the terrorist attacks against the World Trade Center (September 11, 2001). Using random digit-dialing, we conducted a baseline survey 1 year after the attacks (October-December, 2002). A follow-up survey was conducted 1-year later (October 2003-February 2004). Interviews were conducted in English and Spanish. For the baseline, 2,368 individuals completed the survey. We were able to re-interview 1,681 of these respondents in the follow-up survey. As part of the overall study design, residents who reported receiving mental health treatment a year after the attacks were over-sampled by use of screener questions at the beginning of the survey. The baseline population was also stratified by the 5 NYC boroughs and gender, and was sampled proportionately. Questionnaires were translated into Spanish and then back-translated by bilingual Americans to ensure linguistic and cultural appropriateness. Using standard survey definitions, the baseline cooperation rate was 63% (American Association for Public Opinion Research 2008), and the re-interview rate was 71% (Adams et al., 2006), consistent with previous investigations (Galea et al., 2002; North et al., 2004).

Sampling weights were developed for each wave to correct for potential selection bias and for the over-sampling of treatment-seeking respondents (Groves, Fowler, Couper, & Lepkowski, 2004). Demographic weights also were used to

adjust follow-up data for slight differences in response rates by demographic groups (Kessler, Little, & Groves, 1995). With these survey adjustments, our study is representative of adults living in NYC on the day of the WTCD (Adams & Boscarino, 2005; Adams et al., 2006). Additional details on these data are available elsewhere (Boscarino & Adams, 2008). The Geisinger Clinic Institutional Review Board (IRB; Danville, PA) currently serves as the IRB of record for this study.

Endogenous Variables

For year-1 and year-2 depression, we used a version of the SCID's major depressive disorder scale from the non–patients version (Spitzer, Williams, & Gibbon 1987), which also has been used in telephone–based population surveys (Galea et al. 2002; Kilpatrick et al. 2003). To conform to SEM analysis requirements, we focused on the 10 specific depression symptoms in this scale experienced during the previous 12 months. For each symptom, respondents had to indicate if that symptom lasted at least two weeks or longer. We used these 10 binary indicators of depression to measure latent depression variables 1-year and 2-years after the WTCD. Data related to the validity of these depression items were previously discussed (Boscarino, Adams & Figley 2004). Following DSM–IV criteria (American Psychiatric Association, 2000), 10.9% (weighted) of the sample met criteria for depression at year-1, while 11.6% (weighted) met criteria for depression at year-2.

Our study assessed whether respondents met criteria for a perievent panic attack during the World Trade Center Disaster based on the Diagnostic Interview Schedule (DIS) nomenclature (Robins, Cottler, Bucholz, Compton, North, Rourke, 1999) and we used this measure as an observed variable in our SEM. For our PEP measure, questions were phrased to assess panic symptoms that occurred during or shortly after the World Trade Center Disaster (Galea et al., 2002). The presence of 4+ symptoms classified the respondent as having a perievent panic attack, if these symptoms reached their peak within 10 minutes of onset (Galea et al., 2002). This measure has been used and validated in previous studies (Adams & Boscarino, 2005; Boscarino & Adams, 2009; Boscarino et al. 2004; Galea et al., 2002).

Our SEM model included an observed variable measuring exposure to the World Trade Center Disaster events which could affect depression onset. This construct was assessed during the year-1 survey and consisted of 12 possible events that the respondent could have experienced during or as a consequence of the terrorist attack (e.g., was at the disaster site during attack, lost family members/friends in the attack, etc.). Due to the positively skewed distribution of this variable, we recoded the number of exposures greater than 7 to 6 (range = 0-6). This measure was validated and discussed in detail elsewhere (Boscarino et al., 2004; Boscarino & Adams, 2008).

For SEM analyses, we also developed a latent post-disaster stressor variable using two observed measures. First, the year-2 negative life events scale (Freedy, Kilpatrick & Resnick, 1993) was the sum of 8 negative experiences that could have occurred in the 12 months prior to the follow-up survey (e.g., divorce, death of spouse, etc.). Due to the positive skewedness of this scale, we recoded values 4+ to a value of 3 (range = 0-3). Second, the year-2 traumatic events scale (Freedy et al., 1993), was the sum of 10 traumas that could have occurred in the 12 months prior to the follow-up survey (e.g., forced sexual contact, being attacked with a weapon.). Since this variable was also positively skewed, we recoded values 3+ to the value of 2 (range=0-2). Both of these stressor measures were also validated and discussed in detail elsewhere (Boscarino et al., 2004; Boscarino & Adams, 2008).

We included year-2 social and psychological resources as a latent variable in our SEM analyses, which was composed of two observed measures: Year-2 social support and year-2 self-esteem. Social support was the mean of four questions about emotional, informational, and instrumental support available to the respondent in the previous year (Sherbourne & Stewart, 1991), coded low to high social support as a 4-point scale (0-3). In addition, current self-esteem was measured by a version of the Rosenberg self-esteem scale (Rosenberg, 1979) and consisted of the mean of five items measured on a 5-point scale. Due to the skewed distribution of the scale and the non-whole number scores due to mean substitution for individual items, for SEM analyses we recoded this scale as follows: 1-2.75 = 1; 2.80-3.25 = 2; 3.30-3.75 = 3; 3.80 = 4; 4.0 = 5. Both social support and self-esteem measures were also used and validated in previous studies (Adams & Boscarino, 2005; Boscarino & Adams, 2008; Boscarino et al., 2004).

Exogenous Variables

Our analyses included two observed measures representing demographic status: gender and income. Gender was cod-

ed as a binary variable (female = 1 and male = 0). For SEM analyses, annual household income was coded as a 7-point scale (coded 1-7), representing < $20,000 to > $100,000. For those who did not provide income information at baseline, we asked this question at follow-up and substituted these answers for baseline income data. Any remaining missing data on income was coded to mean household income.

To control for pre-disaster mental status, and to assess the respondent's underlying psychopathology, we used two variables: History of pre-disaster depression and history of pre-disaster panic attack. Both of these were based on DSM-IV criteria and were determined based on reported age of onset for these disorders at baseline.

Statistical Analysis

We used structural equation modeling (SEM) to answer our research questions due to its advantages in causal analyses of complex data structures. First, SEM is fundamentally a hypothesis testing method (i.e., a confirmatory approach), rather than an exploratory approach (e.g., regression analyses). Second, it allows the simultaneous estimation of a series of regression equations to determine if the proposed model accurately reflects the data. Third, SEM can explicitly estimate measurement error, rather than ignore this issue as is done with traditional techniques. Fourth, SEM allows incorporation of both directly measured variables and unobserved (i.e., latent) ones. Fifth, SEM is uniquely suited to assess both direct and indirect associations among variables, including those between PEP and depression (Byrne 2010; Kline 2005).

In our data analysis, we describe the characteristics of our population (Table 1) and discuss bivariate correlations among the variables in our SEM analysis. We examine all of the variables to confirm that they meet SEM assumptions for both skewedness and kurtosis. Next, we present the results of our SEM: standardized coefficients and goodness-of-fit statistics. As noted, our analysis builds on earlier work (Adams & Boscarino, 2011; Boscarino & Adams, 2009). Descriptive analyses were conducted using SPSS, Version 17 (Norusis, 2009). There were no missing data for gender and, as noted, we substituted the mean income for those missing information on this variable. We also did not have missing data on World Trade Center Disaster exposure, mental health status (i.e., pre-disaster panic and depression, perievent panic, year-1 and year-2 depression), or year-2 stressor event (i.e., trauma exposure and negative life events) measures. Finally, there were two cases with missing data on social support and three with missing data on the self-esteem. For both scales, we substituted the mean for the missing data.

Estimates for our SEM model were calculated using AMOS, Version 17.0 (Arbuckle, 2008), with maximum likelihood estimation methods. Our input data were a weighted correlation matrix for all of the variables in the model, using the survey weights discussed above. We began our model building by allowing the error term for each symptom from the year-1 depression measure to correlate with its year-2 counterpart. For assessment of SEM model fit, we used the root mean square error of approximation (RMSEA), Bentler-Bonett normed fit index (NFI), and comparative fit index (CFI) (Arbuckle, 2008). Generally, a CFI and NFI greater than .90 and a RMSEA less than .10 indicate adequate model fit (Bryne 2010; Kline 2005). Significant p values were <.05, based on two-tailed tests.

RESULTS

As can be seen in Table 1, about 54% of study respondents were women. In addition, 13% of residents had a history of pre-disaster depression and 12% had a history of pre-disaster panic attacks. Over 10% met the DSM-IV criteria for a perievent panic attack, while 11% met criteria for year-1 depression and 12% met criteria for year-2 depression.

Bivariate Pearson's correlation coefficients among the observed variables in the SEM model were calculated (available upon request). Briefly, PEP was associated with all of the depression symptoms for both year-1 (rs ranging from .16 to .22, all ps<.001) and year-2 (rs ranging from .09 to .21, all ps <.001). PEP was also associated with WTCD exposure (r =.20, p < .001), year-2 negative life events (r =.16, p<.001), year-2 traumas (r =.09, p<.001), year-2 self-esteem (r = -.16, p<.001), and year-2 social support (r = -.10, p<.001). Finally, higher exposure to WTCD events was associated with all of the year-1 and year-2 depression items (all ps < .001), as well as year-2 negative life events (r =.16, p<.001), traumas (r =.09, p<.001), and self-esteem (r = -.08, p<.001), but not social support (r = -.01, p>.05).

Although these correlations are suggestive, due to confounding, the longer-term direct impact of PEP on mental health status cannot be inferred from these data. Therefore, we assessed the direct effects of PEP on year-1 and year-2 depression measured as latent constructs, controlling for other factors. As described, we initially allowed the error

Table 1.
Key Study Variables and Baseline Characteristics

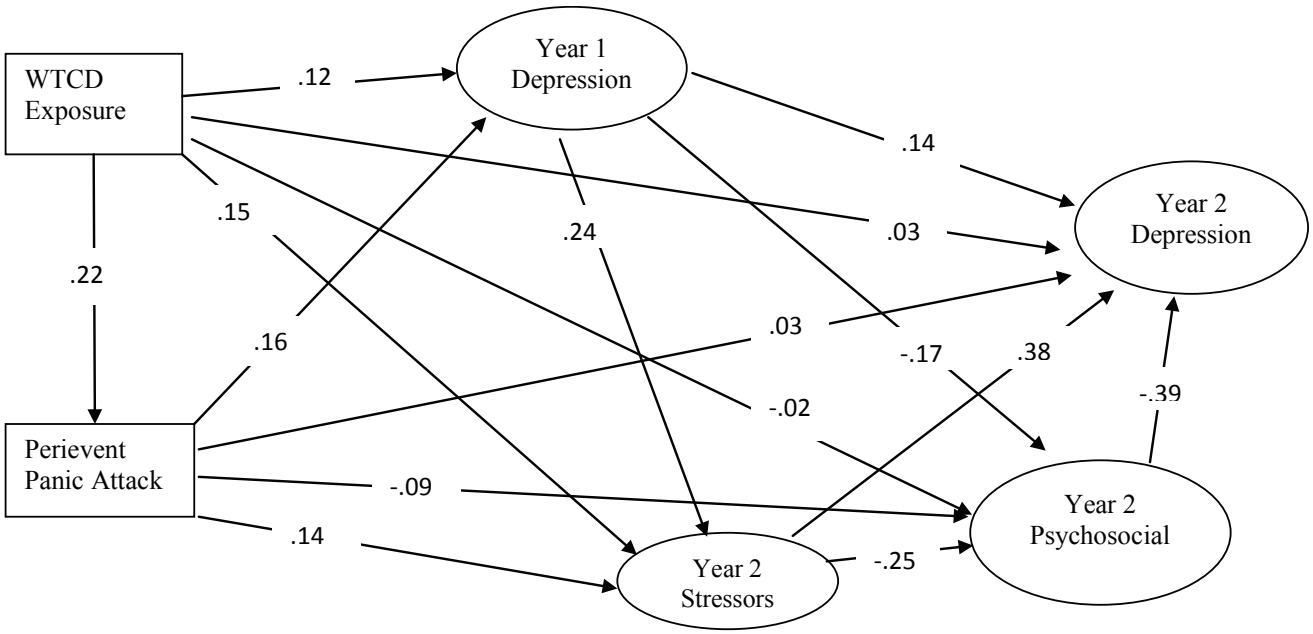
Variables in the Model	Weighted % (Unweighted N) †	
Demographic Characteristics		
Gender		
Male	46.2	(693)
Female	53.8	(988)
Income		
<$40,000	44.7	(784)
$40,000-$99,999	39.2	(650)
$100,000+	16.1	(247)
Stressful Events		
Exposure World Trade Center Disaster		
Low (0-1 Event)	26.7	(362)
Moderate (2-3 Events)	43.9	(719)
High (4-5 Events)	21.8	(416)
Very High (6+)	7.6	(184)
Year-2 Negative Life Events Past Year		
None	63.3	(991)
One Event	24.7	(429)
Two or more Events	12.0	(261)
Year-2 Traumatic Events Past year		
None	85.0	(1390)
One Event	9.3	(175)
Two or more Events	5.7	(116)
Psychosocial Resources		
Year-2 Self-Esteem Past Year		
Low	25.2	(471)
Moderate	34.8	(569)
High	40.0	(641)
Year-2 Social Support Past Year		
Low	35.7	(596)
Moderate	37.9	(656)
High	26.4	(429)
Pre-Disaster Psychological Health		
Lifetime Depression Pre-disaster		
No	87.0	(1366)
Yes	13.0	(315)
Lifetime Panic Disorder Pre-Disaster		
No	88.0	(1444)
Yes	12.0	(237)
Post-Disaster Psychological Health		
Perievent Panic Attack		
No	89.7	(1451)
Yes	10.3	(230)
Year-1 Depression past 12 Months*		
No	89.1	(1409)
Yes	10.9	(272)
Year-2 Depression past 12 Months*		
No	88.4	(1404)
Yes	11.6	(277)

†All percentages are weighted and all n's are unweighted. *Assessed based on full DSM-IV criteria.

terms for each year-1 depression symptom to correlate with its year-2 counterpart. All of the exogenous variables (i.e., demographic and pre-disaster mental health measures) were allowed to correlate with each other. We also allowed all of these measures to have direct effects on all of the endogenous variables (e.g., income on exposure, PEP, stressor events, psychosocial resources, year-1 depression, and year-2 depression). The model specified direct effects between all year-1 endogenous and year-2 endogenous variables (e.g., PEP on year-2 stressor events, year-2 psychosocial resources, year-1 and -2 depression) and contained 4 observed exogenous variables, 26 observed endogenous variables, 4 unobserved endogenous variables, and 30 unobserved exogenous variables, for a total of 64 variables. The model also estimated 16 covariances and 34 variances. With 465 distinct sample moments and 108 parameter estimates, the model had a χ^2 = 2229.94 (*df* = 357, $p < .001$). Other indices suggested that our model could be improved, with a root mean square error of approximation (RMSEA) = .056 (90% CI = .054 - .058), Bentler-Bonett normed fit index (NFI) = .921, and comparative fit index (CFI) = .933. To increase the model's parsimony and reduce the possibility that we over controlled with the pre-disaster panic mental health measure, we eliminated non-significant direct pathways for this measure. We eliminated correlations between the four exogenous variables (e.g., gender and income) that were not significant. Finally, we examined the modification indices and allowed error terms for several of the depression indicators to correlate. After these changes, we recalculated all parameter estimates. The new model contained 465 distinct sample moments, 107 parameter estimates, and a χ^2 = 1402.23 (*df* = 358, $p<.001$). Based on the fit statistics, this second specified model adequately fit the data, with a RMSEA = .042 (90% CI = .039 - .044), NFI = .950, and CFI = .962.

Figure 1 presents a simplified depiction of the final structural model with standardized coefficients, indicating significant direct paths, and omitting correlated error terms. (A complete final SEM model is available from the corresponding author.) As can be seen in Figure 1 and Table 2, World Trade Center Disaster exposure increases the likeli-

Figure 1.
Simplified Depiction of Final Structural Equation Model for Perievent Panic and Major Depression (N=1681)*



*WTCD = World Trade Center Disaster. Year-1 = Baseline survey; Year-2 = Follow-up survey. Other variables in the model include: gender, income, pre-WTCD depression, and pre-WTCD panic. Year-2 Stressors measured by Year-2 Traumas and Year-2 Life Events. Year-2 Psychological Resources measured by Year-2 Self-Esteem and Year-2 Social Support. Year-1 Depression and Year-2 Depression measured by 10 depression items at Year-1 and Year-2, respectively.

hood of a PEP, year-1 depression, and year-2 stressor events (β = .22, $p < .001$). PEP is directly related to year-1 depression (β = .16, $p < .001$), but not to year-2 depression (e.g., β = .03, $p = .189$). It also increases year-2 stressor events (β = .14, $p<.001$) and lowers year-2 psychological resources (β = -.09, $p = .007$). Year-1 depression is positively related to greater year-2 stressor events (β = .24, $p < .001$), negatively related to year-2 psychological resources (β = -.17, $p < .001$), and positively related to year-2 depression (β = .14, $p < .001$). As expected, both year-2 stressor events and year-2 psychosocial resources are associated with year-2 depression (β = .38 and -.39, respectively, $p < .001$).

Further examination of variables in the model (Table 2) shows that both income and pre-disaster depression were associated with greater exposure to the World Trade Center Disaster ($p < .001$). For PEP, income lowered the likelihood of this outcome ($p < .001$), while being female, having pre-disaster depression or panic, and greater exposure to the WTCD increased the likelihood of this psychological problem ($p = .002, .006, .004, .001$, respectively). Income and a history of depression were related to year-1 depression (ps < .001, for both associations), with income negatively related to this endogenous variable. Of the demographic or pre-disaster variables, only pre-WTCD depression was related to year-2 stressor events ($\beta = .086$, p=.013). Being female ($\beta = .072$, p=.025) and having a higher income ($\beta = .428$, p<.001) increased year-2 psychological resources, while pre-disaster depression decreased these resources ($\beta = -.112$, $p = .001$). Finally, none of the demographics or pre-disaster mental health measures was associated with year-2 depression.

Mediation is suggested when an independent variable has an association with a dependent variable and the association between them is significantly reduced after the mediated variable is included in the model. For this study, we only discuss the direct, indirect, and total effects of PEP on year-2 depression, as mediated by year-1 depression, year-2 stressor events, and year-2 psychological resources. The standardized total effect of PEP on year-2 depression is .19, which means that the indirect or mediated effect of this variable on year-2 depression is .16 (.19-.03 = .16). More specifically, individuals who meet criteria for PEP have about a .19 standard deviation increase in the probability of having depression two years after the WTCD. However, that increase is almost entirely due to the fact that those individuals who have a perievent panic attack are also more likely to suffer from year-1 depression, experience more stressor events between year-1 and year-2 post-disaster, and have fewer psychosocial resources two years post-disaster.

DISCUSSION

In this study, we focused on several research questions: First, does perievent panic predict later depression onset after trauma exposure? Second, do pre-existing mental health problems and demographic factors predict traumatic event exposure, PEP, psychosocial resources, and depression? Third, are pre-existing factors and PEP associated with increased post-disaster stressful events and/or lower psychosocial resources, which influence year-2 depression onset? The answer to the first question, related to PEP predicting post-trauma depression, as with our previous work on PTSD and PEP (Adams & Boscarino, 2011; Boscarino & Adams 2009), is no. PEP had no direct effect on later depression onset, once other factors are included in the analytic model. Perievent panic's influence on later depression is almost completely indirect via current depression and later negative life events and psychosocial resources. Thus, there continues to be little evidence that perievent panic directly predicts later mental health status among trauma survivors.

As for the second research question, our SEM model did show that both pre-existing mental health problems and demographic factors affect specific endogenous variables. That is, income and pre-WTCD depression were associated with a person's exposure to the WTCD and all 4 of the pre-WTCD mental health and demographic measures assessed are related to perievent panic (Table 2). Women are more likely to have a PEP attack and the wealthy less likely, while those with pre-WTCD depression or pre-WTCD panic disorder are more likely to have a PEP attack. The predictive value of both demographic and pre-WTCD mental health variables are also revealed for Year-1 depression, Year-2 stressor events, and year-2 psychological resources (Table 2). It is worth noting that unlike most research on stressful events (Thoits 1995), in our study those with higher income reported greater exposure to the WTCD, rather than less, likely an artifact of an attack focused on New York City's financial community.

The interconnection of individual psychological problems within the larger post-disaster context is often discovered in studies of disasters (e.g., Adams & Boscarino, 2005; Adams, Bromet, Panina, Golovakha, Goldgaber, et al., 2002; Adeola, 2009). The same is true when examining who is most likely to experience a traumatic event (Aneshensel, 2009;

Table 2.
Structural Equation Model – Unstandardized Coefficients and Standardized Coefficients for Direct Effects Linking Demographic, Pre-WTCD Mental Health, WTCD Exposure, Perievent Panic, Stressful Events, Psychosocial Resources, and Depression (N=1,681)

Variables in the Model	**WTCD Exposure**	**Perievent Panic**	**Year-1 Depression**	**Year-2 Stressor Events**	**Year-2 Psychosocial Resources**	**Year-2 Depression**
	b (s.e.) Beta	b (s.e.) Beta	b (s.e.) Beta	b (s.e.) Beta	b (s.e.) Beta	b (s.e.) Beta
Gender	-0.098 (.064) -.037^{ns}	0.046 (.014) .075**	0.016 (.012) .030^{ns}	0.070 (.036) .064^{ns}	0.051 (.023) .072*	-0.003 (.013) -.006^{ns}
Year-1 Income	0.066 (.015) .107***	-0.018 (.003) -.122***	-0.009 (.003) -.074***	0.010 (.009) .037^{ns}	0.072 (.007) .428***	0.008 (.005) .061^{ns}
Year-1 Lifetime Depression Pre-WTCD	0.331 (.094) .085***	0.059 (.022) .065**	0.322 (.018) .403***	0.139 (.056) .086*	-0.116 (.037) -.112***	--
Year-1 Lifetime Panic Disorder Pre-WTCD	--	0.064 (.022) .068**	--	--	--	--
Year-1 WTCD Exposure	--	0.050 (.006) .216***	0.024 (.005) .115***	0.064 (.014) .154***	-0.004 (.009) -.015^{ns}	0.007 (.005) .033^{ns}
Year-1 Perievent Panic	--	--	0.144 (.020) .163***	0.242 (.061) .135***	-0.107 (.040) -.093**	0.030 (.023) .033^{ns}
Year-1 Depression	--	--	--	0.496 (.078) .244***	-0.222 (.054) -.169***	0.145 (.031) .140***
Year-2 Stressor Events	--	--	--	--	-0.162 (.039) -.251***	0.193 (.031) .380***
Year-2 Psychosocial Resources	--	--	--	--	--	-0.307 (.047) -.389***
R2 =	**0.022**	**0.074**	**0.235**	**0.174**	**0.374**	**0.501**

*p<.05 ** p<.01*** p<.001, two-tailed t-test WTCD = World Trade Center Disaster; ns = not significant; s.e. = standard error.

Link & Phelan, 1995). Related to our third research question, the answer is yes: findings suggest a sequence of events with demographic factors and pre-trauma mental health factors influencing exposure to a traumatic event, and all of these factors increasing the likelihood of PEP onset, which is associated with lower psychosocial resources and increases in stressor events, leading to later depression onset. These results support Hobfoll's conservation of resources theory (Hobfoll 1989) and the stress proliferation theory (Pearlin, Aneshensel, & Leblanc 1997), in that an initial stressful event (i.e., WTCD) leads to a host of other psychological and interpersonal problems, which proliferate into other areas of life.

This study's conclusions need to be seen in light of its strengths and limitations. A major strength was that our study involved a large-scale random survey among a multi-ethnic urban population. We also assessed a range of psychological and interpersonal measures over a 2-year period using standardized instruments. We also attempted to capture features of our sample that reflect pre-WTCD mental health problems. Finally, we used SEM to examine the multiple pathways in which trauma, psychological resources, and mental health status interrelate.

Potential study limitations include omitting individuals without a telephone, those who were institutionalized, and those who did not speak either English or Spanish. Given that our study's final completion rate was lower than desired, non-response bias also could be an issue affecting our results. However, our weighted data closely matched census data for New York City. We also conducted our study among a population experiencing multiple terrorism events (e.g., the 2001 anthrax scare), which may have affected our results (Boscarino, Adams, Figley, Galea, & Foa, 2006). A further limitation was that several of our measures did not cover the exact same timeframe. Our year-2 measure of social support, for example, covers the year prior to the survey, while our other year-2 psychological resource variable is for "current" self-esteem. Finally, as with most disaster studies, we did not have any pre-disaster measures of mental health status. We did include several retrospective indicators of pre-WTCD panic and depression based on age of onset, but these variables may suffer from recall bias.

Despite these limitations, our study suggests that while PEP seems to have a direct association with post-disaster stressor events and psychosocial resources, it does not have a direct effect on longer-term (i.e., year-2) depression, once other factors are taken into account. PEP does have shorter-term effects on depression, which has consequences for stressor events, psychosocial resources, and long-term depression. These findings are consistent with our earlier PTSD results – the ultimate dependent variable following traumatic exposures (Adams & Boscarino, 2011). Given the results from both of these studies, the predictive value of PEP appears to be clearly limited as an indicator for interventions directed at long-term mental health status. The best predictors for both year-2 PTSD and depression were year-1 PTSD, year-2 stressor events, and year-2 psychosocial resource variables. While PEP may have shorter-term mental health consequences, our findings suggest that interventions focused on improving psychosocial resources and reducing stressor events in the post-trauma period may be more beneficial in reducing longer-term mental health problems. The results also support our hypothesis that both epidemiological and psychosocial perspectives are important in examining the long-term consequences of major community disasters.

REFERENCES

Adams, R.E., & Boscarino, J.A. (2005). Stress and well-being in the aftermath of the World Trade Center attack: The continuing effects of a community-wide disaster. *Journal of Community Psychology, 33*, 175-190.

Adams, R.E., & Boscarino, J.A. (2011). A structural equation model of perievent panic and posttraumatic stress disorder after a community disaster. *Journal of Traumatic Stress*, 24, 61-69.

Adams, R.E., Boscarino, J.A., & Galea, S. (2006). Social and psychological resources and health outcomes after World Trade Center disaster. *Social Science & Medicine, 62*, 176-188.

Adams, R.E., Bromet, E.J., Panina, N., Golovakha, E., Goldgaber, D., & Gluzman, S. (2002). Stress and well-being after the Chornobyl nuclear power plant accident. *Psychological Medicine, 32*, 143-156.

Adeola, F.O. (2009). Mental health and psychological distress sequelae of Katrina: An empirical study of survivors. *Human Ecology Review, 16*, 195-210.

American Association for Public Opinion Research. (2008). *Standard definitions: Final dispositions of case codes and outcomes rates for surveys.* Ann Arbor, MI: American Association for Public Opinion Research.

American Psychiatric Association. (2000). *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition Text Revision*. Arlington, VA: American Psychiatric Publishing.

Aneshensel, C.S. (2009). Toward explaining mental health disparities. *Journal of Health and Social Behavior*, 50, 377-394.

Arbuckle, J.L. (2008). *Amos 17.0 user's guide*. Chicago, IL: SPSS Inc.

Baillie, A.J., & Rapee, R.M. (2005). Panic attacks as risk markers for mental disorders. *Social Psychiatry and Psychiatric Epidemiology, 40*, 240-244.

Boscarino, J.A. (2008). Psychobiologic predictors of disease mortality after psychological trauma: Implications for research and clinical surveillance. *Journal of Nervous and Mental Disease*, *196*, 100-107.

Boscarino, J.A., & Adams, R.E. (2008). Overview of findings from the World Trade Center Disaster Outcome Study: Recommendations for future research after exposure to psychological trauma. *International Journal of Emergency Mental Health, 10*, 275-290.

Boscarino, J.A., & Adams, R.E. (2009). Peritraumatic panic attacks and health outcomes two years after psychological trauma: Implications for intervention and research. *Psychiatry Research*, *167*, 139-150.

Boscarino, J. A., Adams, R. E., Figley, C. R., Galea, S., & Foa, E.B. (2006). Fear of terorism and preparedness in New York City 2 years after the attacks; Implications for disaster planning and research. *Journal of Public Health Management and Practice, 12*(6). 505-513.

Byrne, B.M. (2010). *Structural equation modeling with AMOS: Basic concepts, applications, and programming.* (2nd ed.). New York, NY: Routledge.

Centers for Disease Control and Prevention. (2002). Deaths in World Trade Center terrorist attacks—New York City, 2001. *Mortality and Morbidity Weekly Report*, *51*(Special Issue),16–18.

Freedy, J.R., Kilpatrick, D.G., & Resnick, H.S., (1993). Natural disasters and mental health: Theory, assessment, and intervention. *Journal of Social Behavior and Personality 8*, 49–103 [Special issue: Handbook of Post-disaster Interventions].

Galea, S., Ahren, J., Resnick, H., Kilpatrick, D., Bucuvalas, M., Gold, J., & Vlahov D. (2002). Psychological sequelae of the September 11 terrorist attacks in New York City. *New England of Medicine, 346*, 982-987.

Goodwin, R.D., Brook, J.S., & Cohen, P. (2005). Panic attack and the risk of personality disorder. *Psychological Medicine, 35*, 227-235.

Goodwin, R.D., & Hamilton, S.P. (2002). The early onset fearful panic attack as a predictor of severe psychopathology. *Psychiatry Research, 109*, 71-79.

Groves, R.M., Fowler, F.J., Couper, M.P., & Lepkowski, J.M. (2004). *Survey methodology*. New York, NY: John Wiley & Sons.

Hobfoll, S.E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist*, *44*, 513-524.

Kaniasty, K., & Norris, F.H. (2008). Longitudinal linkages between perceived social support and posttraumatic stress symptoms: Sequential roles of social causation and social selection. *Journal of Traumatic Stress, 21*, 274-281.

Kessler, R.C., Chiu, W.T., Jin, R., Ruscio, A.M., Shear, K., & Walters, E.E. (2006). The epidemiology of panic attacks, panic disorder, and agoraphobia in the National Comorbidity Survey Replication. *Archives of General Psychiatry, 63*, 415-424.

Kessler, R.C., Little, R.J., & Groves, R.M. (1995). Advances in strategies for minimizing and adjusting for survey nonresponse. *Epidemiologic Reviews, 17*, 192-204.

Kline, R.E. (2005). *Principle and practice of structural equation modeling*. New York, NY: Guilford Press.

Lawyer, S.R., Resnick, H.S., Galea, S., Ahern, J., Kilpatrick, D.G., & Vlahov, D. (2006). Predictors of peritraumatic reactions and PTSD following the September 11th terrorist attacks. *Psychiatry, 69*, 130–141.

Link, B.G., & Phelan, J. (1995). Social conditions as fundamental causes. *Journal of Health and Social Behavior*, 35(Extra Issue), 80-94.

Nandi, A., Tracy, M. Beard, J.R., Vlahov, D., & Galea, S. (2009). Patterns and predictors of trajectories of depression after an urban disaster. *Annals of Epidemiology, 19*, 761-770.

Nixon, R.D., Resick, P.A., & Griffin, M. G. (2004). Panic following trauma: The etiology of acute posttraumatic arousal. *Journal of Anxiety Disorders, 18*, 193-210.

Norris, F.H., Friedman, M.J., Watson, P.J., Byrne, C.M., Diaz, E. & Kaniasty, K. (2002). 60,000 disaster victims speak:

Part I. An empirical review of the empirical literature, 1981-2001. *Psychiatry, 65*, 207-239.

North, C.S., Pfefferbaum, B., Tivis, L., Kawasaki, A., Reddy, C., & Spitznagel, E.L. (2004). The course of posttraumatic stress disorder in a follow-up study of survivors of the Oklahoma City bombing. *Annals of Clinical Psychiatry, 16*, 209-215.

Norusis, M. (2009). *SPSS 17.0 Guide to data analysis*. New York, NY: Prentice Hall.

Pearlin, L.I., Aneshensel, C.S., & Leblanc, A.J. (1997). The forms and mechanisms of stress proliferation: The case of AIDS caregivers. *Journal of Health and Social Behavior, 38*, 223-236.

Person, C., Tracy, M., & Galea, S. (2006). Risk factors for depression after a disaster. *Journal of Nervous and Mental Disease*, 194, 659-666.

Picou J.S., Marshall, B.K., & Gill D.A. (2004). Disaster, litigation and the corrosive community. *Social Forces*, *82*, 1493–1522.

Resnick, H.S., Kilpatrick, D.G., Dansky, B.S., Saunders, B.E., & Best, C.L. (1993). Prevalence of civilian trauma and posttraumatic stress disorder in a representative national sample of women. *Journal of Consulting and Clinical Psychology, 61*, 984-991.

Robins, L.N., Cottler, L.B., Bucholz, K.K., Compton, W.M., North, C.S., & Rourke, K.M. (1999). *Diagnostic Interview Schedule for DSM-IV.* St. Louis, MO.: Washington University School of Medicine, Department of Psychiatry. (Revised January 9, 2002).

Rosenberg, M. (1979). *Conceiving the self*. New York, NY: Basic Books.

Rubonis, A.V., & Bickman, L. (1991). Psychological impairment in the wake of disaster: The disaster-psychopathology relationship. *Psychological Bulletin*, 109, 384-399.

Sherbourne, C.D., & Stewart, A.L. (1991). The MOS social support survey. *Social Science & Medicine, 32*, 705-714.

Thoits, P. (1995). Stress, coping and social support processes: Where are we? What Next? *Journal of Health and Social Behavior, 35*(Extra Issue), 53-79.

Turner, R. J., Wheaton, B., & Lloyd, D. A. (1995). The epidemiology of social stress. *American Journal of Sociology, 60*, 104-125.

UMBC TRAINING CENTERS

1442 S. ROLLING ROAD • BALTIMORE, MD 21227-9935 • 443-543-5400
WWW.UMBCTRAININGCENTERS.COM

RESILIENCY SCIENCE INSTITUTES INTERNATIONAL

RESILIENCY SCIENCE INSTITUTES, INTERNATIONAL AT UMBC TRAINING CENTERS

Is interested in recruiting
Psychologists, as well as, HR, EAP, and OD Professionals
Interested in becoming Affiliate Training Faculty in

Resilient Leadership

If ever there was a time that resilient leadership was needed at all levels of society, it is now. Trainers will learn how to teach what we believe are the two "covenants" of resilient crisis leadership as well as the four essential characteristics of resilient crisis leaders. In addition, trainers will learn how to teach the evidence-based crisis and risk communications Resilient Moment Communications Model (RMC), and how to teach the fundamentals of "Psychological Body Armor" as a means of enhancing personal stress immunity and resilience.

For more information email George S. Everly, Jr., PhD, ABPP, RSI Executive Director at rsi@umbctrainingcenters.com.

UMBC
AN HONORS UNIVERSITY IN MARYLAND
Training Centers

International Journal of Emergency Mental Health, Vol. 13, No. 2, pp. 81-90 © 2011 Chevron Publishing ISSN 1522-4821

Working Toward Resilience: A Retrospective Report of Actions Taken in Support of a New York School Crisis Team Following 9/11

Kendall Johnson
California State University, Long Beach

Joanne M. Tortorici Luna
California State University, Long Beach

Abstract: *A retrospective report details external support rendered to a Lower Manhattan school crisis team following the 9/11/01 terrorist attack on the World Trade Center. This analysis occasions an opportunity for consideration of working assumptions, the formative use of data to plan support actions, and the subsequent emergence of a collaborative approach to post-disaster team support in school settings. The nature of assessment and nature of subsequent service delivery illustrates a community resilience-based approach to school crisis management. Recommendations for such work are based upon mixed qualitative and quantitative data gathered from on-scene team members as part of the ongoing support effort. [International Journal of Emergency Mental Health, 2011, 13(2), pp. 81-90].*

Key words: *school crisis teams, disaster, resilience, consultation, September 11, 9/11*

INTRODUCTION

Following the terrorist attacks on the World Trade Center and Pentagon on September 11, 2001, schools in New York City struggled to regain stability in the face of unforeseen calamity. During the chaos of the attack, many schools evacuated. Students and staff were exposed to distressing sights and sounds. Many families faced sudden loss of loved ones and economic support; normal law enforcement and social services were disrupted. Following the attack, students and teachers in South Manhattan had to contend with massive on-going deconstruction and reconstruction of infrastructure. Local school crisis teams assisted staff and students in meeting these challenges and thereby maintaining the educational program.

School crisis teams are usually hybrid in nature; members function in regular school roles and, in addition, function as crisis responders stabilizing other staff and students during emergencies. Thus, situated school crisis response teams struggled with new types and levels of demand during the event itself and the following months. During the months following the attack, the authors of this paper had the opportunity to provide close support to the counselors and teachers comprising one of those teams. This paper recounts and reconceptualizes what was learned during this process regarding the process of providing relevant and effective support. We focus in particular upon the use of formative assessment procedures involving qualitative and quantitative

Correspondence should be addressed to Joanne Tortorici Luna, Professor, Department of Advanced Studies in Education and Counseling, California State University, 1250 Bellflower Boulevard, Long Beach, California 90840. Tel: 562 985 4455

methods of data gathering to inform our support actions.

METHOD

Our support intervention with the team followed several sequential steps in assessment and service provision, each informed by the previous step.

1. In order to base our actions on a collaborative, comprehensive assessment, an initial focus group discussion with the target team was held. This meeting took place in November and sought to provide a forum for the team to relate its experience and allow the needs to emerge. The information revealed in this meeting was supplemented by informal conversations with team members as well as team leaders.
2. Following analysis of the results of the meeting and subsequent review of the literature, questions were formulated and more structured data was gathered from a similar group in order to clarify and strengthen our understanding of the stress suggested in the first meeting.
3. Informed by this expanded understanding, a series of interventions were undertaken in order to meet the team needs identified in step 1 and clarified in step 2. These informed interventions are discussed in the results section below.

Focus group discussion with target team

The focus group discussion followed a semi-structured format facilitated by the authors, utilizing a sequence of five prompts and encouraging cross talk and discussion. The primary purpose of the meeting was not to gather data for research purposes but rather to facilitate the group's collaborative assessment of the impact of the events on the team and what they needed in terms of support from us. Anticipating that perceptions and reactions might be difficult and confusing for team members, cross talk and mutual facilitation was essential. Collaborative narrative allowed participants to explore and expand their understanding during the discussion. Because team members were familiar and comfortable with each other and the facilitators, the information they shared was anticipated to be of a personal nature; thus it was decided not to record the discussion, as that would likely erode trust and lead to inaccuracy. Notes were taken by hand; as a result, the data obtained and reported must be considered general and impressionistic. In keeping with the semi-structured nature of our discussion, the conversation moved through five overarching questions:

- How are you feeling right now?
- What happened and what did you do during the day of 9/11?
- What were your reactions at the time and during the first week?
- Given what you've gone through, what were some of the strengths and limitations of our initial team training in 1992? What were most important and least important elements of that training?
- What do you need most now—in terms of personal support, material, and further training?

The authors—as the meeting facilitators—met and reviewed our impressions at numerous junctures during the sessions and afterward. Further, we conducted periodic member checks with the group as a whole and with several participants separately, as well as the team leaders who were also in attendance during the sessions.

Clarification data gathering from parallel team

Based upon the results of the focus discussion groups we felt we needed to further understand the stress experienced by our teams. Particularly concerning were the indications of a more complex phenomenon that could impact not only the team's well being but also possibly compromise the way in which they work with victims within the schools. Specifically, we wondered if listening to survivor accounts would exacerbate team members' personal post-9/11 reactions and affect their effectiveness.

While we felt uncomfortable about subjecting our target team members to further scrutiny and possibly undermining their confidence by stigmatizing them with labels, we nevertheless felt that the nature of our support to them and our consultation with their team leaders could be strengthened by confirmation of their focus group perceptions. We determined that normed measures of direct trauma, indirect trauma, and burn-out in a similar team in similar circumstances would strengthen our understanding; thus we set out to select a way to confirm the constructs.

We decided that the CSF (Figley, 1995) and the TSC-40

(Briere & Elliot, 1997) scales would give us a rapid screening to estimate the viability of the constructs, compatible with the test circumstances. Thus normed questionnaires for Compassion Fatigue/satisfaction and for trauma symptoms were administered to a matched crisis team in a second system of similar schools in NYC in January, 2002. These team members served similar roles and functions in similar circumstances as the team we were supporting, had suffered similar exposure to the event, and worked with similar students. A detailed discussion of this confirmatory study is not appropriate here, but is reported elsewhere (Johnson & Tortorici Luna, unpublished). The general results of this study, to the extent they clarify our perceptions drawn from the initial focus discussion with our target team, are discussed below. For clarity, in the rest of this account we will refer to the team we served as the *target team*, and the matched team with whom we did the confirmatory study the *non-target team*.

Ethical considerations and practice

The data presented in this report is not research nor intended to generate scientific knowledge but rather to improve the provision of services to this particular team. Nor is the information provided by participants to be considered a secondary research use of data, asit may or may not be applicable to other teams. It is not the intent of this discussion to characterize all or even most school crisis team members as likely to exhibit the characteristics or concerns that this team expressed.

The information collected was team specific and the team was only one of many operating in Lower Manhattan during that time. Participants in the focused discussion groups described here were fully informed that information disclosed would likely be used in training other crisis teams, and they expressed their willingness that it be used in this way. To ensure the privacy of its members, the identity of the team, the individual team members, and identifying operational specifics remain anonymous.

The intent of this discussion is to enhance team support practice by illustrating the importance of designing support in light of each teams' particular and emergent needs. Any data gathered from the team was used to provide feedback, monitor, and improve the program of team support. The presentation of the information in this report is intended only to illustrate its use in individually tailoring team support activities and materials. It is the expressed position of the authors that team support needs are team specific.

Informed consent forms were obtained from all participants. When primary data were collected, the facilitators were not affiliated with a university or any other institution that included an Institutional Review Board (IRB). A later parallel study, which was conducted under university auspices (Tortorici Luna, 2007) was approved by the university's IRB and carried out according to approved specifications.

RESULTS

The results of the target team focus group discussion, the non-target team confirmatory data, and the subsequent support activities provided to the target team are discussed separately below; however, their importance is intended to be understood as a dynamic, unfolding process leading to appropriate and individualized team support.

Focus group results

The team focus group discussion is summarized in Table 1 below. Key themes included the following:

- The experience of the chaotic and traumatic nature of the events of the day of 9/11 and the inadequacy of complex and sophisticated crisis intervention procedures.
- The usefulness of basic crisis intervention and communication skills that can be applied flexibly in a dynamic and shifting situation.
- The effectiveness of simulation exercises in training.
- The personal difficulty of ongoing professional responsibilities in the ongoing post-event school environment.
- The ongoing need for emergent strategies to meet student needs.
- The need for ongoing communication with all other team members in the post-crisis environment.

The focus discussion group provided clear directions for team support, including, in particular, the need for skill development in handling behavioral emergencies in chaotic situations, defining the proper team role in chaotic situations, and constructing personal stress management and self care plans. In addition, significant questions were raised concerning the extent of traumatic stress experienced by team members as a result of their experiences on the day of 9/11

Table 1.
Focus Group Discussion 11/01

Question	Summary	Most Frequently Repeated Comments	Questions Raised or Direction Set
How are you feeling right now?	Team was having varied intense feelings and arousal signs, partly due to previous day's change of threat status	"I could hardly come in." "This is never going to end." "I ought to be home with my family." "I hate feeling like this." "Terrified." "I may leave." "It's going to happen again." "I've forgotten what things used to be like." "I'm just waiting." "It's just a matter of time."	Need skills for managing distress in order to assist performance of duties
What happened and what did you do during the day of 9/11?	Team met at District Office and deployed to select individual schools to provide general support	"saw terrible things on my way to the school" "everything surreal" "bodies falling" "people walking around like they were sleepwalking" "children stepping over bodies" "students were doing just what they were told" "smell was terrible" "couldn't find the students" "couldn't see" "kids crying" "couldn't believe how teachers still functioned" "didn't know what to say or do" "noise was unbelievable"	Underscored need for skills in managing personal and other's distress during chaotic incidents
What were your reactions at the time and during the first week?	Team reported and evidenced signs of traumatic stress, and signs suggestive of compassion fatigue or burnout.	"felt disconnected" "fearful and anxious" "sick of the ____ (crowding, noise and smells)" "can't go (can't stay) asleep" "afraid of another attack" "reminders cause me anxiety" "noises set me off (like sirens, helicopters)" "feeling depressed" "worried about exposure to toxic chemicals; the city isn't telling us the truth" "painful memories, keep seeing it" "can't concentate" "keep drifting off" "angry at _____ (parents, staff members students)" "need to get away from the city" "it makes me upset to listen to student's and parent's 9/11 stories" "feel guilty and don't know why" "bothered by what the children tell me" "still cry at odd times"	Can constructs for trauma, compassion fatigue, burnout be confirmed as important including in support content?

Question	Summary	"Most Frequently Repeated Comments	Questions Raised or Direction Set
		when they react, I react" "tired all the time" "don't want to hear it" "trouble caring anymore" "shutting down" "_____ (colleague) is here, but not really"	
Given what you've gone through, what were some of the strengths and limitations of our initial team training? What was most important and least important?	<u>Strengths</u> •overview & rationale •generic rapport & intervention skills •simulation exercises <u>Limitations</u> •team role during chaotic, large scale emergency •skills to manage distressed people •on-scene assessment of functioning	"when I knew the general goals I could adapt" "the basics were the most important—how to connect" "how to talk to people who were upset" "the exercises were the best; I knew what to do 'cause I'd done it before." "simulation was like the real thing" "what should the team do when everything was crazy?" "needed to know how to handle really upset people" "how to tell normal upset from serious upset" "when are people out of control?"	Importance of "strength" items is affirmed; future school crisis team trainings should include these content and process considerations. Materials and approaches for the "limitation" items need to be developed.
What support do you need most now—personal, material, and further training?	Perspectives, predictions, materials & approaches, stress management and self care	"more discussions like this" "dealing with our own family" "perspectives we can give to parents" "know what to expect" "don't want to take it home" "controlling fear" "material we can give to teachers" "staying positive" "ways we can deal with stress" "chances to get together" "having someone (like you) sit by me during disaster work"	This set agenda for support needed, including materials and approaches to be developed and provided.

and exposure to other's distress. Clarification was needed regarding the constructs and extent of compassion fatigue and burn-out.

Confirmation results strengthening our understanding

Data gathered from non-target groups provided us with deepened appreciation for our specific team and better direction for tailoring our support activities on their behalf. We expected participants to be contending with a variety of post-trauma conditions including heightened anxiety, depression, dissociation, hyper-vigilance, etc., but we wondered if the raising of the threat levels prior to our focus discussion group meeting in November had temporarily spiked an increase in transient signs of traumatic stress. The results of the closer study of non-target teams three months later suggest that was not the case. We determined that in preparing support materials and activities we needed to assume that individual team members were likely to be traumatized and needed those issues related to direct trauma to be specifically addressed. Importantly, it should be noted that this was not a theoretical assumption; our assumption might not have been the case with team members in differing circumstances.

We had also been concerned with our team's suggestion of more subtle and complex reactions mentioned in the November discussions. At the time they were less prominent than the signs of immediate exposure because of the two month proximity to the event. By February, more time had transpired and the indirect exposure through images, stories, and behavior had built up through the team members (primarily school counselors in lower Manhattan) counseling with survivors and frequent crisis team response with students whose crises may be 9/11 related or at least shaped by the effects of 9/11. The results of the CSF (compassion fatigue, satisfaction, and burnout) supported our observations and indicated that indirect exposure was also an issue for the target team, but because of their direct exposure to the incident, it was difficult determining the effects of direct vs. indirect exposure through victim contact. In any case, the results of this confirmatory study more closely informed the nature of support required by our target team.

Informed support

Informed by the team specific data received in November (focus group discussion with the target team) and clarifying data received in February (quantitative confirmation with the non-target teams), we constructed the support that was rendered to the team from February, 2002 through December, 2003 in three formats: distance consultation (telephone and email consultation, provisions of written materials and resources); direct team support and training; and collaboration with team leadership.

Distance consultation

By far, the most estensive continuing conversations involved telephone and e-mail messages with the team leaders, and less often, team members themselves. For the most part these ranged between personal stress and performance- related issues, and practical concerns about service delivery, given unanticipated circumstances and needs. Much of the stress-related issues had to do with dealing with self-care concerns and team building (both expressed by team leaders and team members).

A second issue concerned issues raised in the initial November session concerning the role of the team and skills needed during the impact phase on and just after 9/11, as well as the recurring student and staff distress due to unanticipated recurrent reminders or unbidden images common to psychological trauma. This prompted the drafting and distribution of materials specific to handling acute stress reactions in the school setting, as well as ensuring the availability of psychological support if needed. Another area of content focus was information flow and rumor management (in our case, particulate contamination). This material was adapted for teachers and subsequently published (Johnson, 2004). Preliminary versions of this material, along with self-care and classroom discussion approaches, were provided to the target team for use in their district, as well as other districts.

A third issue emerged in late Spring, 2002. The team wanted direction in helping their schools plan approaches for dealing with the approaching summer and preparation for memorializing 9/11in the coming September. While summer would mean rest, it would also mean the loss of structure that the school year provided. Additionally, any anniversary memorials would have to take place almost immediately upon resumption of school in September. Arrangements were made to distribute professional self-care journals, created by Mercy Corps, for the use of teachers and team members during the summer, along with strategies to take advantage of the break for integrating experiences (apart from trainings provided,

school staff had little opportunity for sustained reflection all year due to the escalated volume and intensity of post-9/11 job responsibilities). District administrators also used a collaborative needs assessment tool to guide site personnel in planning anniversary actions. This process is more completely described in a related article (Tortorici Luna, 2002).

Direct team support & training

Direct team support was provided through full-team group discussions and training, supplemented by individual consultations face to face. Particular training subjects that were requested by team members included reviewing cases and incidents, class/group strategies to facilitate discussion with students, dealing with agitated or depressed students and parents, facilitating cognitive and emotional processing with students and staff, and approaches to self- and team care. During each training, care was taken to provide open-ended or lightly structured group discussion, as well as having the group discuss their further, specific training needs.

Collaboration with team leadership, including summative evaluation

Each visit on scene was preceded and followed by private meetings with team leadership, allowing them to share the obstacles, difficulties, frustrations and successes they were experiencing. This also gave opportunity for us to gain on-going, formative assessment of our support efforts in a manner that allowed us to shift our strategies according to emerging needs. Of particular note was our response to their half-humorous response to our queries about leadership needs:

Q: "What do you need most?"

A: "To get out of N.Y. now!"

Taking them at their word, we managed to get some of them to take part in joint presentations at educational conferences on the subject of their "insider" N.Y. experiences. This also gave us the chance to have more leisurely and extensive discussion about their personal needs and concerns. One of the leading team members told us these presentations made her again feel like a helper rather than a victim, for the first time since the attacks. During our final visit we asked for an informal summative evaluation—an experience that was very affirming to and appreciated by us.

As the months wore on, we became aware that the focus and balance of our direct consultation had shifted from trauma-specific content to more practical content (direction setting and problem solving). This raised questions regarding our evolving relationship with the team and the way in which we viewed our work. We had begun a process of questioning our assumptions.

DISCUSSION

Prior to 9/11 our crisis team work had been informed by trauma theory adapted to the school setting. (Mitchell, & Everly, 1997; Dyregrov, 1997: Johnson, 1998). Some assumptions underlying this model included presuppositions regarding school crisis team purpose, situational assessments, information prioritization, training, and team support. As months passed, we found that collective, large- scale actions, previously used in war situations, were more appropriate and practical for this task (see Ressler, Tortorici, & Marcelino, 1993; Tortorici Luna, 2002). In short, we began to see the trauma model as medicalizing an inherently community phenomenon, and we shifted our focus to interventions built upon individual, collective, and cultural coping actions.

In retrospect, this more adaptive working theory proved useful, opening up possibilities for more appropriately targeted support. In more recent years such a paradigm has evolved within the larger circle of disaster management, with the National Security Council establishing an Office of National Resilience Policy related to planning for terrorism and disasters, and the Community and Regional Resilience Institute, a collaborative effort between the Department of Homeland Security (Science and Technology Directorate) and Oak Ridge National Laboratory, as well as a number of academic institutions (AUSA, 2009).

Norris and colleagues (2008) define resilience as "a process linking a set of adaptive capacities to a positive trajectory of functioning and adaptation after a disturbance," going on to describe it as "metaphor, theory, set of capacities, and strategy," related to "stress, adaptation, wellness, and resource dynamics" that has great potential in clarifying disaster thinking at multiple levels. They agree with Longstaff (2005) that resilience can be understood as the ability by an individual, group, or organization to continue its existence (or remain more or less stable) in the face of some sort of surprise. Resilience is found in systems that are highly adaptable (not locked into specific strategies) and

have diverse resources. At the community level, Norris and colleagues (2008) consider resilience a product of adaptive capacities in the four areas of information and communication; community competence (such as capacity for collective action, decision making, and empowerment); social capital (such as social networks, attachment to place, and community participation); and economic development.

School crisis teams can help districts and schools directly address information and communication, community competence, and social capital, within the overall context of community disaster response and recovery. When we shifted from a primarily trauma prevention to a primarily resilience model, our support became more useful for the team.

Lessons learned

On the basis of our experience providing support to the target team—and the team members' and leaders' feedback—we found that the resilience model better describes what school crisis teams do best, and opens the way for more adaptive and useful possibilities for team development and performance. Following Norris and colleagues (2008) and Ronan & Johnston (2005), we propose that school crisis teams can be best understood—whatever the effect of their action upon the prevention of trauma, and whether they are intervening with individuals, groups, or the entire school—as strengthening the inherent capacities of school organizations and their communities. Some assumptions underlying this model are summarized and contrasted with the medicalized trauma model in Table 2. These general assumptions are deceptively simple; in fact, they represent a departure from the medicalized, trauma-based assumptions currently guiding most current crisis team preparation and operation, and guide many of the recommendations detailed below.

Specific recommendations for supporting crisis teams

Our experiences consulting with this school crisis and others and subsequent reflection leads us to conclude the following general recommendations for school crisis team planning, training, and support:

- Conceptualize team mission, approaches, and evaluation within the framework of the school and community; consider resilience theory as a guiding principle. This provides both functional coherence and larger systemic fit. Include trauma theory as a necessary and informative but subordinate component.
- Use team members themselves as the primary source of information regarding their individual and team functioning, rather than relying upon preconceived notions of needs or wellness.
- Articulate skill building, team development, and operational planning by following a collaborative, capacity-building approach, rather than a pre-conceived protocol-driven approach.
- In training and planning, prepare for the unforeseen (both in terms of its nature and scope); plan to be self-sufficient for prolonged periods of time.
- Understand the very unique and critical organizational differences that schools present. Especially critical are issues of professional hierarchy, territoriality, public scrutiny, authority, and rumor management.
- Team planning, functioning, and effectiveness should be evaluated according to the host institution purposes.
- Use simulation-based training with shifting conditions to assist planning in novel, shifting, and extreme conditions.
- Include explicit reflection in exploring personal and team processes.
- During large and complex incidents, consider using both quantitative and qualitative measures to assess direction and needs.
- Support (whether crisis team is supporting school personnel, or crisis team is supporting other crisis teams) should be collaborative and exploratory, fitting local needs.
- Provide material for teachers and administrators on school crisis management (see, for example, Johnson, 2002 and 2006, and Tortorici Luna, 2007) that build the team's capacity for effective action under diverse conditions.

Conclusions

The key to effective support for this particular team in these unique circumstances lay in three key elements: careful, appropriate, and collaborative assessment; informed intervention based upon the expressed needs of the specific

Table 2.
Comparison of School Crisis Team Assumptive Models

Team Function	Psychological Trauma Model	Community Resilience Model
Purpose	Trauma prevention	Primarily increasing team, school, and community resilience; secondarily addressing individual issues
Situational Assessments	Expert led, clinically influenced	Local subject as primary source of authority, experts secondary; collaborative in nature
Information Prioritization	Primarily quantitative	Mixed and formative; primarily qualitative, secondarily quantitative
Training	Content: trauma model; well defined, procedural based interventions Process: standardized procedure based; skill building activities, including identification and referral, individual and group intervention activities	Content: community resilience model, including disaster mental health; flexible application of strategies in varying contexts Process: adaptive procedure based, organizational capacity building through individual, group, and broader community intervention skill building activities
Support in Large or Prolonged Incidents	Largely prescriptive, expert driven; facilitating self care	Largely collaborative problem solving focus, capacity expanding, facilitating self- and team-care

team within its community context; and flexibility in adapting to emerging situational realities over the course of the crisis event.

REFERENCES

Association of the United States Army Institute of Land Warfare (2009). Defense Report 09-4 Reforming the National Security Council for the 21st century: Integrating Homeland Security and Transnational threats. Arlington, Va.: Association of the United States Army. Retrieved from: http://www.ausa.org/publications/ilw/Documents/TB_Pacific_June09.pdf.

Briere, J., & Elliott, D.M. (1997). Psychological assessment of interpersonal victimization effects in adults and children. *Psychotherapy: Theory, Research & Practice, 34*, 353-364.

Dyregrov, A. (1997). The process of psychological debriefing. *Journal of Traumatic Stress, 10,* 589-604.

Figley, C. (1995). Compassion fatigue as secondary traumatic stress disorder: An overview. In Figley, C. (Ed.), *Compassion fatigue.* New York: Brunner/Mazel.

Johnson, K. (1998). *Trauma in the lives of children: Crisis and stress management techniques for counselors, teachers, and other professionals*. Alameda, CA: Hunter House.

Johnson, K. (2002). *School crisis management. A hands on guide to training crisis response teams*. Alameda, CA: Hunter House.

Johnson, K. (2004). *Crisis in the classroom: The teacher's guide: Quick and proven techniques for stabilizing your students and yourself*. Alameda, CA: Hunter House.

Johnson, K. and Tortorici Luna, J. (2010). *Working toward resilience: A retrospective analysis of actions taken in support of a New York school crisis team following 9/11*. Unpublished.

Longstaff, P. (2005). *Security, resilience, and communication in unpredictable environments such as terrorism, natural disasters, and complex technology.* Syracuse, New York: Author.

Norris, F.H., S.P. Stevens, B. Pfefferbaum, K.F. Wyche and R. L. Pfefferbaum. (2008). Community resilience as a metaphor, theory, set of capacities, and strategy for disaster readiness. *American Journal of Community Psychology 41*,127-150.

Ressler, E.M., Tortorici, J.M., & Marcelino, A. (1993). *Children in war. A guide to the provision of services*. New York: UNICEF.

Ronen, K. & Johnston, D. (2005). *Promoting community resilience in disasters: The role for schools, youth, and families*. New York: Springer Science and Business Media, Inc.

Tortorici Luna, J. (2002). Collaborative assessment and healing in schools after large scale terrorist attacks. *International Journal of Emergency Mental Health, 4*(3), 201-208.

Tortorici Luna, J. (2007) Collaboratively assessing and stabilizing schools after large-scale terrorist attacks. In Linden, E.V. (Ed.), *Focus on terrorism*. Hauppaugue, New York: Nova Science Publishers, pp. 273-287.

International Journal of Emergency Mental Health, Vol. 13, No. 2, pp. 91-94 © 2011 Chevron Publishing ISSN 1522-4821

Reflections on Ten Years of Clinical Practice in New York City Following the Terrorist Attacks of September 11, 2001

Richard L. Levenson, Jr.
Independent Practice, New York City

Key words: Crisis intervention, CISM, psychotherapy, World Trade Center, law enforcement psychology, September 11

Ten years after the terrorist attack on the World Trade Center, New Yorkers are still anxious about the events of September 11, 2001, as well as the possibility of future attacks. The trauma experienced by the people of the City of New York must be similar to the trauma of those who experienced the attacks on Pearl Harbor that signaled the United States' entrance into the World War II in 1941.

As a clinical psychologist in independent practice in New York City, I volunteered on-site at Ground Zero of the World Trade Center from September 11, 2001 until November, 2002. During that time, it was my role to participate in one-on-one interventions as well as Critical Incident Stress Management (CISM) Defusings and Critical Incident Stress Debriefings(CISD) with groups for members of service in the New York City Police Department (NYPD). I was able to experience, first-hand, the day-to-day lives of emergency personnel who were "on the job" and were asked to come in or came on their own for CISM. About four days per week, not including my occasional presence there on weekends, the mental lives of active duty men and women police officers were subject to CISM intervention to enable them to continue their most important and valuable work. Their work, at that point, consisted mainly of sifting through mostly large debris in order to complete, first, the search and rescue of any living victims and, later, the search and recovery of bodies and/or property associated with those who died as a result of the attack on September 11, 2001.

Automatic pilot has been a term used to describe the ability of emergency personnel to conduct the job they are supposed to do within the confines of a scene that might otherwise by emotionally devastating. It requires significant training and psychological coping mechanisms to block out emotionally overwhelming visual stimuli in order to conduct the work of their profession. Examples of being on automatic pilot might include sifting through debris and finding a victim's hand or some other body part and being able to tag and bag it and continue searching without breaking down emotionally and being unable to function thereafter in their professional role.

CISM debriefings were held to moderate the effects of horrific experiences such as these, and help officers cope with, in general, the thousands of murdered civilians and emergency services worker victims, as well as their own vulnerability as New Yorkers and citizens of the United States. The majority of these officers saw great value in CISM and were fully psychologically functional thereafter. However, some required more intervention, and were so effected by the terrorist attacks that they became overwhelmed and needed a higher level of care; these officers were then put in the hands of licensed mental health clinicians who were skilled

Richard L. Levenson, Jr., Psy.D., CTS, is a New York State licensed psychologist in independent practice in New York City. Dr. Levenson is an Associate Editor for International Journal of Emergency Mental Health, and served as Editor from 2004 – 2008. He is also Department Police Surgeon with the Ulster County Sheriff's Office in Kingston, NY, and Chief Police Surgeon for the Rosendale Police Department in Rosendale, NY. Dr. Levenson is Vice-Chairman of the Badge of Life Psychological Survival for Police Officer's Program (www.badgeoflife.com) based in Sacramento, CA. The author wishes to thank Beth Levenson, PhD, Diane Gwin, and Laurence Miller, PhD, for their insightful comments on an earlier draft of this article. Correspondence concerning this article should be sent to him at: drlevenson@gmail.com

in dealing with police officers in ongoing psychotherapy for potential treatment of Post-traumatic Stress Disorder (PTSD), as well as other conditions such as other anxiety disorders and concomitant depressive disorders.

At the same time, within my independent practice of clinical psychology, my patients reported symptoms associated with PTSD, Generalized Anxiety Disorder, Panic Disorder (with and without Agoraphobia), and Dysthymic Disorder. These patients were profoundly affected by the terrorist attacks of September 11, since coping skills and self-management of crisis and terrorism had not been previously present in their psychological repertoire. Moreover, patients seemed to report constellations of symptoms, as well as fears, which became common or typical across many people. Notable were that many of my patients considered themselves *living victims* of the terrorist attacks that killed nearly 3,000 people.

Initial Reaction Phase

Initially, my patients challenged their world view; overnight it seemed as if their lives had become something different and the search for information on what would happen next and "how am I supposed to live with this over my head?" surfaced as chief inquiries. Notable was that there seemed to be a consensus that life in New York City had changed dramatically and forever, and that the felt experience of this change was shock and abject fear. Television played a major role in their daily re-traumatization as news programs replayed the planes crashing into the World Trade Center Towers as well as actual footage of the buildings falling. Some patients were transfixed on these images, while others actively sought to avoid viewing television news programs and reading newspapers. Their coping skills were more hindered, and their feelings of vulnerability were greater, because they used avoidance as a defense against re-experiencing the pain of the attacks. As a result, their psychotherapeutic treatment was more complicated and required more external interventions, such as anti-anxiety and/or anti-depressant medications.

In the months after the attacks, my patients were uncomfortable leaving their homes and traveling to work; again, television news hypothesized that suicide bombers would next attack people on the subways and buses in New York City, and these alarming concerns raised the level of hypervigilence in many patients. While they had to hold themselves together traveling to and from work and while at work, in my office it was a different matter. There were regressions, both in terms of problems as well as coping mechanisms. Patients were extremely anxious and concerned with their own well-being and that of family members. They saw their children as being at-risk in school while separated from them during the day. While dealing with feelings of anxiety and sadness during the day, at night disruptions in sleep were reported and ranged from difficulty falling asleep and remaining asleep, to dreams in which they were extremely vulnerable, with vivid scenes of running away in panic or, in some cases, being shot or shot at. Apologetically, some patients reported wariness, anxiety, and/or dislike of Middle Eastern people they passed on the street, having fantasies that they were potential terrorists.

Coping and Adaptation

As time went on, there was a lessening of shock and more of a wary acceptance of external events. My patients were becoming conditioned to living in a city that was the center of a changing world. The NYPD was much more visible in its presence and protection of city landmarks; there were groups of heavily-armed officers from emergency service units (ESU) who appeared on-scenes with special weapons and tactics (SWAT) gear, some carrying automatic weapons. They did not immediately blend in as the "cop on the beat" typically did. In treatment, my patients wondered if "something was going on, like another attack," and their anxieties and fears were triggered repeatedly. Reassurance and support often helped to allay these feelings, and the "replacement" idea of seeing ESU officers as protectors tended to calm patients' anxieties about their presence. Moreover, in the ten years since September 11, 2001, seeing NYPD ESU teams on the streets of New York City has become a virtual non-issue as patients seemed to have incorporated them into their own schemas of what constitutes a safe environment. In that regard, patients reported less objection to having their bags and suitcases searched prior to entering subways, or to the thousands of cameras now placed all over New York City. All of these environmental interventions, designed to enhance safety and security, seemed to have consciously and unconsciously played a role in helping patients cope with and make more healthy psychological adaptations to the city and world in which we now live.

About two years after the attacks, my patients began getting back to the business of focusing on the dilemmas and

problems of every-day life. As safety and security needs were believed to be met, a sub-set of patients made radical changes in their lives. Some had children, while others divorced. Some changed professions, while others went back to school. All of these life-changes were precipitated by the experience of being directly affected by the events of September 11, 2001 and, while it is arguable that these normal life events occur everywhere anyway, the patients who underwent these changes actively did so in order to change the course of their lives and to "move on" in new directions. It was part of their psychological solution, therefore, to somehow put the September 11 experience, or that part of their lives, behind them and proceed to something new and different.

Where We Are Today

My independent practice consisted then (and still does) of both civilians and law enforcement personnel. While civilians resumed struggling with the problems of every-day life, many of my law enforcement personnel-patients were physically ill. They were in psychotherapy in order to deal with the effects of having ongoing severe medical conditions. Being known in the law enforcement community from my work at Ground Zero, as well as being a Police Surgeon for several departments, I had an unusual number of very sick patients. All of a sudden, I was in the midst of police officer-patients who had all worked at Ground Zero or the Fresh Kills Landfill on Staten Island (sifting for remains) and who had been diagnosed with cancerous brain tumors, kidney cancers, Non-Hodgkins Lymphoma, seizure disorders, sleep disorders, and various respiratory diseases.

Psychotherapy with police officers having significant physical illness requires examining issues of possible impending death, as well as the effects of their illnesses on occupational status, marital, and family life. Having been stricken with a disease as a result of being a rescue and recovery worker causes much sadness, anger, and bitterness in these patients. Moreover, they view "the job" as being uncaring and unhelpful, indeed, standing in their way of receiving proper information and benefits, such as disability pensions and support for their families.

Most often, however, are concerns and anxieties about their course of illness. Many have illnesses from which they will never recover. Remission is a time of relief but it is also fraught with anxiety and sadness about returning illness. Cancers require ongoing observations and care, including CT-Scans and MRIs at varying intervals. In these cases, there is a build up of anxiety as one returns to the hospital every three to six months in order to determine if his cancer has returned or if the condition has worsened. Patients' thoughts turn to their own mortality and their youthful ages (range: 37 to 44, at present) and there appears to be much rumination on this factor. There is sorrow, sadness, and fear that they will not be around to watch their children grow up. All have posttraumatic stress disorder (PTSD) that is World Trade Center-related, while some also have Dysthymic Disorder and what I term an *Anxiety Spectrum Disorder* as well. Cognitive dysfunction is noted, particularly in short-term memory and attention and concentration. Affectively, patients are likely to be angry, but anhedonic, mostly apathetic with disinterest in things that used to be prominent in their lives (e.g., hobbies; family get-togethers), and have significant lethargy. In other words, their thought content consists mainly of their illness and the real possibility of dying from it. It is essential that contact is maintained between the treating mental health clinician and specialty physicians (e.g., oncologist, neurologist, pulmonologist and, in some cases, neurosurgeon) because changes in the patient's mental status may foretell changes in disease progression. Since it is the mental health clinician who sees these patients on a weekly basis, astute observation of their cognitive and affective functioning is critical. Especially important in terms of cardiac and pulmonological functioning are inquiries by the mental health clinician on sleep dysfunction and possible reports of episodes of apnea and hypopnea. One should always being performing a covert Mental Status evaluation during every session.

Treatment includes supportive concern for activities of daily living and well-being. Medically ill patients need psychotherapy to occur in an atmosphere of optimism and hope, as do all patients. However, with sick police officers, the mental health clinician might find himself fighting an uphill battle – at least in the beginning – as personality traits of officers tend to include doubting, cynicism and, at times, mistrust. In these cases as in all psychotherapeutic relationships, the establishment of rapport, trust, and respect within the working alliance is essential. When these conditions are met, medically fragile police officers make very good patients: they are on-time for sessions, eager and active discussants in sessions, and compliant with "homework assignments." The use of gallows humor is especially noteworthy, at times (as it is used typically in police culture), and probably used as a defense against feelings of extreme vulnerability and anxiety.

Counter-Transference Issues

Needless to say, treating medically ill people in psychotherapy tended to potentiate my role as a care-taker. I noted that taking care of them was gratifying and comforting to me, too, as it might be to a parent taking care of a sick child. Under the professional demeanor, however, there is sadness and a feeling of powerlessness with respect to disease which, at times, resulted in calls from patients after doctor visits or results from C-T Scans or MRIs. Yet these calls seem to be supportive to the therapeutic relationship as well. At other times, there are real worries and sadness that people so young, and while performing their good work, should be so profoundly afflicted after doing a job that others could not possibly do or want to do. More than that, I experienced a sense of irony in that those who we have termed heroes were dying from something they did to protect us.

There is something to be said for the mental health clinician remaining in the office, or in the debriefing room, without ever visiting the scene of the disaster. Clinically speaking, we are on something close to *automatic pilot* when actively listening to a patient in session, but being at Ground Zero, any Ground Zero, can be both psychologically and medically damaging, and should be avoided unless absolutely necessary. Those clinicians who remain on-site for more than a very short time risk not only risk their physical health, but their own mental health and are become vulnerable to their own trauma and stressor-related disorder, including PTSD, a secondary stress disorder, or some other psychological condition pertinent to their own personal experiences.

International Journal of Emergency Mental Health, Vol. 13, No. 2, pp. 95-120 © 2011 Chevron Publishing ISSN 1522-4821

Psychological Interventions for Terroristic Trauma: Prevention, Crisis Management, and Clinical Treatment Strategies

Laurence Miller
Independent Practice, Boca Raton, Florida

Abstract: *Terrorist attacks combine features of a criminal assault, a mass casualty disaster, and an act of war. Accordingly, this article presents a model for prevention, response and recovery from the psychological impact of a terror attack. The nature of terrorism is delineated and the various psychological effects are described, including diagnostic clinical syndromes, as well as individual reactions. Interventions in the immediate aftermath of a terrorist attack include on-scene crisis intervention, short-term psychological stabilization, and longer-term psychotherapeutic approaches. Special techniques are described for individuals, families, children, and large groups of survivors and responders. Finally, the ways that mental health clinicians can serve as valuable consultants to community recovery efforts are discussed. [International Journal of Emergency Mental Health, 2011, 13(2), pp. 95-120].*

Key words: *Crisis Intervention. Mass Casualty Psychology. Psychology of Terrorism. September 11 Anniversary. Terrorism. Trauma Therapy.*

The Nature and Purposes of Terrorism

Terrorism is as old as civilization, and has existed ever since people discovered that they could intimidate the many by targeting the few. However, terrorism has achieved special prominence in the modern technological era, beginning in the 1970s as international terrorism, continuing in the 1980s and 1990s as American domestic terrorism, and apparently coming full circle in the 21st century with mass terror attacks on U.S. soil by foreign nationals (Miller, 2006a, 2006b). Arguably, the two culmination points of domestic and international terrorism in the past two decades have been Oklahoma City and the World Trade Center. Many experts believe that the worst is yet to come (Bolz et al, 1996; Cromartie & Duma, 2009; Keller, 2002).

The word terrorism derives from the Latin *terrere,* which means "to frighten." A terrorist act is rarely an end in itself, but rather is intended to instill fear in whole populations by targeting a small, representative group (Loza, 2007). A major difference in the case of mass terrorism like that on 9/11/01 and the much-feared potential nuclear terrorism of the future may be the terrorists' desire to wreak maximum destruction as an end in itself, going far beyond the symbolic value of the act and turning it into a veritable war of annihilation (Butler, 2002).

Only in the last two decades has terrorism become a significant fact of life for Americans. Accordingly, the body of clinical psychological literature on terrorism has lagged

Laurence Miller, PhD is a clinical and forensic psychologist in Boca Raton, Florida, a consultant to law enforcement and emergency services, and current editor of IJEMH. Dr. Miller can be reached at 561-392-8881 or at docmilphd@aol.com.

behind that of other types of traumatic event. However, as practicing clinicians, we need to realize that good psychotherapeutic technique and wisdom are generalizable skills that may productively be applied to the treatment of a wide range of traumatic disability syndromes (Miller, 1993a, 1998c, 2006d, 2008c).

Terrorist attacks, such as Oklahoma City in 1994 and the World Trade Center and Pentagon in 2001, combine features of a criminal assault, a disaster, and an act of war (Hills, 2002; Miller, 2006a, 2006b, in press). Hence, much of what follows combines therapeutic approaches culled from the more extensive literatures on treating victims of criminal assault, homicidal bereavement, natural and man-made disasters, war and political violence, workplace homicide, and school shootings (Miller, 1998b, 1998c, 1999a, 1999b, 1999c, 1999d, 2001, 2002a, 2002b, 2006d, 2007a, 2007b, 2007d, 2008c, 2009a, 2009b; Miller & Schlesinger, 2000; Pitcher & Poland, 1992; Spungen, 1998), as well as from more recent direct research and clinical work on treating terrorism survivors and their families (Miller, 2003a, 2003b, 2004, 2005). It also includes some insights gained by the author's experience in treating South Florida relatives of slain victims of the New York World Trade Center attack, victims of the 2001 anthrax episode in South Florida, local merchants and community members who reportedly were acquainted with one or more of the 9/11 hijackers (who lived for a time in Delray Beach, Florida), and many airline employees who had been understandably traumatized by the 9/11 events.

Psychological Responses To Terrorist Attacks

Terror: The Ultimate Traumatic Event?

In essence, terrorism is the "perfect" traumatic stressor, because it combines the elements of malevolent intent, actual or threatened extreme harm, and unending fear of the future (Miller, 2003a, 2004, 2005, 2006a, 2006b). Indeed, the very purpose of terrorism fully meets Criterion A of the DSM-IV-TR (APA, 2000) diagnostic classification of posttraumatic stress disorder (see below), of injuring or threatening self or others, and involving "the experience of intense fear, helplessness, or horror."

Several elements appear almost universally in modern terrorist activities (Bolz et al, 1996; Burleigh, 2009; Loza, 2007; McCauley, 2007) that make terrorism a prime traumatic stressor. First, terrorism uses violence as a method of influence, persuasion, or intimidation. In this sense, the true target of the terroristic act extends far beyond those directly affected. The Murrah building in Oklahoma City is bombed to make a point about the intrusive Federal government. An Israeli pizza parlor is blown up to effect withdrawal of settlements in the West Bank. The goals here are to use threats, harassment, and violence to create an atmosphere of fear that will eventually lead to some desired behavior on the part of the target population.

Second, targets and victims are selected for their maximum propaganda value, ensuring a high degree of media coverage. A great deal of thought may go into the symbolic value of the attacks, or the victims may be targets of opportunity. This approach may backfire if the goal is to garner public sympathy and noninvolved innocents are killed along with the symbolic targets. Alternatively, if the aim to inflict as much horror and panic as possible, then indiscriminate slaughter may serve only too well. Traditionally, the aim of most terrorist acts has been to achieve maximum publicity at minimum risk, yet phenomena like suicide bombings show that fanatical devotion will often trump personal caution, and this lack of restraint even for self-preservation is what makes suicide terrorists so frightening.

Third, unconventional military tactics are used in terrorism, especially secrecy and surprise ("sneak attacks"), as well as targeting civilians, including women and children. This is another distinction between a terrorist and a soldier or guerrilla. As noted above, if the goal is to inflict maximum terror, then it makes sense to choose locations that contain the largest number of "innocent" victims. These types of glaring acts are also the most likely to garner media attention.

Fourth, intense and absolutist loyalty to the cause of the organization characterizes most terrorist groups. The ability to commit otherwise unspeakable acts – not to mention giving one's own life – necessitates an absolutist belief that these acts are done in the cause of some overarching, worthy purpose. The very relentlessness of the terrorists' mission of destruction makes their acts all the more frightening and destabilizing for victims.

Toxic, Radiological, and Biological Terrorism

Chemical and biological warfare and terrorism are not new, either (Cromartie & Duma, 2009). Medieval soldiers threw plague-ridden corpses over the walls of besieged cities. Colonizers of the American West gave smallpox-impregnated blankets to Indian tribes. In World War I, lethal gas was

commonly referred to as a "terror weapon." However, in modern industrial society, the fear of potential exposure to hidden harmful agents has achieved an almost mystical quality. Even in ordinary industrial or commercial use, exposure to hazardous substances is often a traumatic event (Baum, 1987; Baum & Fleming, 1993; Baum et al, 1983). Being "poisoned" has a frightening connotation that goes deep into the collective psychological and cultural unconscious of humankind. It conjures up fears of diabolical possession, the casting of evil spells, moral and spiritual uncleanness, ostracism and banishment from the community, and – especially in the context of terrorism – insidious contamination and conspiracy. Further, in the case of toxic and radiological agents, the fears of contamination can extend to future generations (Miller, 1993b, 1995b, 1998c).

In planning for such possible chemical and biological attacks, military and civilian planners are apparently taking such potential *toxic stress casualties* quite seriously (Cromartie & Duma, 2009; Romano & King, 2002). The widespread panic, confusion, and demoralization that might result from such an attack would multiply the casualties occurring from direct exposure to the substances themselves, as well as strain limited medical resources in dealing with them. In fact, the U.S. Army Medical Department notes that, historically, two stress cases have occurred for each actual chemical injury (Stokes & Bandaret, 1997). This analysis suggests several possible origins for these cases.

First, normal physiological stress symptoms may be mistaken for exposure to chemical weapons agents. Even soldiers specifically trained to recognize signs of chemical poisoning often mistake symptoms of physiological arousal – elevated heart rate, breathing difficulties, gastrointestinal distress – as those of actual toxic chemical exposure; how much more susceptible would ordinary untrained civilians be to this type of symptomatic misattribution.

Second, genuine but unrelated illnesses or syndromes – allergies, migraine headaches, gastric ulcers – could be mistakenly attributed to the feared chemical or biological agent, creating further diagnostic confusion and psychological disability. In cases of severe conversion disorder (Miller, 1984, 2002d), the purported toxic exposure could become the focal point for patients' psychological conflicts and distress, causing them to become unshakably convinced of their own mortal peril. Even with actual exposure to the agent, the degree of contact might be minimal and the risks slight, but fear could magnify the psychologically disabling distress, especially when no "safe" dose has been established.

Third, iatrogenic (treatment-related), or self-inflicted casualties may result from medically prescribed or self-administered medications or other substances, ranging from antidotal agents such as atropine and diazepam, to prescribed narcotic drugs, to various "home rememdies," to alcohol and hard drugs of abuse. Any of these may produce disagreeable or disabling symptoms that may be mistaken for, or added to, the symptoms of toxic exposure. For example, self-administration of two types of nerve agent antidote autoinjectors can produce headache, restlessness, and fatigue; these symptoms can be further aggravated in a tired, dehydrated, or stressed person.

Finally, individuals with no actual exposure may malinger or fabricate symptoms in order to obtain otherwise unavailable medical, financial, or other resources and services.

Psychological Responses to Mass Terror Attacks

Aside from Oklahoma City and the World Trade Center and Pentagon, there have no comparable examples on U.S. soil of the kind of mass terror attacks that are feared for the future. Accordingly, most of what we know about psychological responses to mass trauma comes from the study of natural and man-made disasters. The latter, such as dam breachess and nuclear power plant meltdowns, probably come closest to terroristic attacks in the sense of being caused by human beings through the misuse of technology, as opposed to random acts of nature like earthquakes or hurricanes. The difference, of course, is that in the case of a Bhopal or a Chernobyl, the damage to multiple innocent lives comes from human error or, at worst, callous negligence. This may still be a far cry from the willful and malicious intent to do harm that characterizes terroristic attacks (Miller, 1998c).

Characteristics of Disasters

Disasters are traditionally divided into two broad categories. As the name implies, *natural disasters* are those that are the product of errant nature: hurricanes, floods, avalanches, wildfires, earthquakes. *Technological disasters* involve the misworks of man: shipwrecks, plane crashes, building collapses, toxic spills, nuclear reactor leaks. In some cases, the dividing line is not so clear, as in the recent triple-threat earthquake, tsunami, and resultant nuclear reactor malfunction that has afflicted Japan.

Definitional distinctions aside, major disasters share a number of characteristics with mass terror attacks that clearly place both in the category of shared traumatic events (Abueg et al, 1994; Aldwin, 1994; Ursano et al, 1995b; Miller, 1998c, 2007b, 2008d).

First, there is typically little or no warning that the event is about to occur, and even when adequate warning exists, citizens often display a stupefying capacity for denial and minimization. Thus, by the time the threat is unmistakably clear, it may be too late for the most effective action.

Second, disasters generally occur in a relatively short time frame. By the time the full extent of the threat is realized, the worst may be over, yet the aftermath must still be dealt with.

Third, by definition, disasters typically involve extreme physical danger, including loss of life. At the very least, people lose something of value, whether it is their home, treasured keepsakes, their livelihood, friends or family members, or their sense of a secure and predictable world.

Fourth, disasters are psychologically overwhelming, and provide very little chance for people to exert any kind of meaningful personal control. Helplessness magnifies the traumatic effect of disasters. Conversely, engaging in rescue or relief efforts – doing *something* other than sitting around waiting for the next aftershock, explosion, or tidal wave – is typically associated with significantly lower levels of psychological trauma, even if the efforts are exerted after the peak of the disaster has passed.

Finally, disasters happen to many people simultaneously, and it is not unusual for disaster victims to feel like the whole world is coming to an end. On the positive side, the fact that many community members share similar traumatic experiences may facilitate healthy disclosure of fearful thoughts and feelings regarding the trauma. In addition, the community may pull together and provide a higher-than-usual level of social support for victims, which may be therapeutic to those most in need.

The Disaster Response: Clinical Features

Some observers note that the behavioral and psychological responses seen in disasters frequently have a predictable structure and time course (Ursano et al, 1992, 1995a, 1995b). For most individuals, posttraumatic psychiatric symptoms are transitory. For others, however, the effects of a disaster linger long after the event, rekindled by new experiences that remind the person of the past traumatic event. In cases of mass terror attacks, this hypervigilant dread is magnified by the sense that it may never be really "over," and that "the worst is yet to come."

Research shows that the overall magnitude and severity of a disaster is the single best predictor of both probability and frequency of postdisaster psychological disability (Abueg et al, 1994; Green, 1991; Ursano et al, 1995b), with studies suggesting that 10 to 30 percent of highly exposed individuals develop posttraumatic symptomatology. The greatest risk is for persons exposed to life threat, grotesque scenes or activities (e.g. handling human remains), or similar situations evoking intense, overwhelming revulsion or fear. Intrusive thoughts and memories seem to be the most frequently reported posttraumatic symptoms following natural disasters, with avoidance symptoms – feelings of numbness, social withdrawal, and shunning of trauma-related situations or reminders – tending to be less common (Abueg et al, 1994).

Posttraumatic stress disorder (PTSD) per se is not the only psychological disorder associated with disasters (Ursano et al, 1995a, 1995b). Major depression, generalized anxiety disorder, adjustment disorder, and substance abuse have also been diagnosed in individuals exposed to a disaster. Grief reactions are common after all disasters. Single parents may be at a high risk for developing psychological disorders, since they often have few resources to start with and they commonly lose some of these already-meager social supports after a disaster. Over time, when supplies remain limited and employment and postdisaster financial resources are scarce in the community, there is often a sharp increase in domestic violence and child abuse.

Anger as a reaction to bereavement in the aftermath of a disaster – especially a man-made one – may be complicated by the desire to apportion blame and responsibility (Solomon & Thompson, 1995). In the case of mass terror, the offender may be clearly identifiable, or – more likely and more frighteningly – may be shrouded and ill-defined. In such cases, survivor anger may be free-floating and unfocused, and may be displaced onto rescue workers, medical personnel, community officials, or anyone deemed even remotely responsible for, or connected with, the mass terror event or the failure of protective or helping services to prevent or respond quickly enough to the disaster (Lindemann, 1944; Raphael, 1986).

Phases of the Disaster Response

Research and clinical study have shown that in many natural and technological disasters, people's responses often follow a predictable course (Cohen et al, 1987; Weiner, 1992). Recent events have shown this pattern to apply to mass terror reactions, but further study is necessary before conclusive generalizations can be made.

In the immediate *phase of impact,* victims experience a growing fear as the impending threat becomes known. This may pass over into paralyzing fear as the full realization of the danger unfolds. In cases of sudden attack, there may be no preparation at all. In many cases, numbing depersonalization, a kind of psychic anesthesia, may permit the person to "go on automatic," partially ignore his/her pain and fear, and take some constructive action during the emergency.

The impact phase shades over into the *phase of heroism,* in which disaster victims make intense and valiant efforts to protect and save whomever and whatever they can. They often work feverishly, nonstop, for hours or even days at a time, propelled by grit and adrenalin, sometimes valorously distinguishing themselves in ways they never thought possible. However, if the emergency lasts too long, exhaustion, frustration, and disappointment eventually overcome them, especially if they feel their efforts have been in vain.

After the acute danger has subsided, the survivors peek out from their bunkers, and the *honeymoon phase* begins, typically lasting days to weeks. The survivors survey the damage, exchange reminiscences and "war stories," and generally share in the elation of having survived the ordeal. A range of emotions may prevail, from somber mourning of the dead and reflection on the tragedy of the act, to a veritable carnival atmosphere where survivors pat each other on the back, share remaining snacks and drinks, and look forward to imminent rescue, recovery, and rebuilding.

But all too often the reprieve doesn't come soon enough, or it is half-hearted, disorganized, or misapplied – too little, too late. The survivors, waiting and waiting for the relief they feel they've earned, become disillusioned and bitter in this next *phase of disappointment.* The communal spirit begins to fray as survivors bicker over dwindling resources. Tempers flare, people, sicken, and many survivors sink into depression.

Hopefully, however, not for too long. In the *phase of reorganization,* the survivors come to realize that recovery is at least partially in their own hands. They begin to rally around the task of rebuilding their lives, or at least remaining as comfortable as possible until real help can arrive. Some remaining animosity and resentment may mar this renewed spirit of cooperation, but mostly the survivors gamely hold on and look toward the future. In many of these cases, the posttraumatic stress reaction may be delayed for months until it is "safe" to let down one's guard, to drop the numbed psychological survival mode and allow one's true feelings to surface.

Individual Responses to Disasters.

Whether the disaster is natural or technological – and, in the latter case, accidental versus deliberate – may affect the victims' appraisal of, and psychological response to, the catastrophic event (Baum, 1987; Baum & Fleming, 1993; Baum et al, 1983). Realistically, we don't expect to have control over the forces of nature. So as tragic as the effects of floods and earthquakes may be, perhaps we're better able to resign ourselves in a philosophical, will-of-God kind of way. But disasters caused by human folly or negligence are different. Here we often feel that there's been a violation of the trust we implicitly place in those who are supposed to protect us, as in the case of radon-contaminated housing tractsdam ruptures, or nuclear reactor meltdowns.

But even disasters caused by callous neglect or incompetence may be easier for victims to deal with than destruction emanating from the direct intention to do evil that characterizes terrorist attacks. One instructive study comes out of the first World Trade Center terrorist bombing in New York in 1993 (Difede et al, 1997). The most distressing aspect of the survivors' ordeal was the shattering of their fundamental beliefs about themselves (invulnerability, immortality), the world (predictability, controllability, safety), and other people (trust, safety, isolation) that had previously shaped their lives. Many were angry that their fabric of belief in a just world had been rudely shredded. All felt isolated, feeling that others could not possibly understand what they had gone through. Concerns about death and questions about the meaning and purpose of their lives haunted many survivors. Victims who had suffered previous traumas experienced a recrudescence of symptoms from those past events, along with the current traumatic reactions. Several subjects moved out of the New York area "to start over."

A subsequent American Medical Association study of the far more devastating 2001 World Trade Center attack found that 11 percent of all New Yorkers reported symp-

toms of PTSD two months following the incident, almost three times the national average. An intriguing finding was that the degree of PTSD distress was most strongly related to the amount of TV coverage watched. This suggests that potentially vulnerable victims may have attempted to use the acquisition of information through television as a coping mechanism, but instead ended up retraumatizing themselves (Kalb, 2002).

One universal risk factor for more severe posttraumatic reactions appears to be physical exposure to death and the presence of dead bodies and human remains. One component of this is obviously the raw intensity of the exposure itself, i.e. the sights, smells, and sounds of the wounded and dying, proximity to the bodies, or actual physical contact with the dead. Personalization and identification with dead victims – "that could have been me" – appears to be a particular risk factor for later psychological disability. For example, subjects directly exposed to the dead have been found to subsequently show compulsive handwashing and an aversion to eating meat. In most cases, these symptoms abated after several months (Lindy et al, 1981; McCarroll et al, 1993; 1995; Raphael, 1986; Ursano & McCarroll, 1990; Ursano et al, 1995a). In other cases, the most traumatically stressful aspect of a disaster is the legal wrangling that too often ensues as victims and their families seek compensation, justice, or just some straight answers (Underwood & Liu, 1996).

Psychological Effects Of Terrorism

Types of Attacks and Victims

Schmid (2000) has differentiated two types of terrorist victims. *Focused terrorism* specifically chooses its victims. These might be political figures or members of a specific group against which the terrorists are acting. *Indiscriminate terrorism,* in contrast, is directed against random victims who are not specifically selected and are innocent targets of opportunity. One of the most frightening aspects of this type of terrorism is that its victims are most often persons who have no direct connection with the terrorists and no involvement in the issues or ideological activities that motivate the terrorist incident. They are essentially innocent targets of opportunity.

Along these lines, Butler (2002) divides terrorism into two broad categories. *Instrumental terrorism* describes acts carried out to coerce a group into taking some action or complying with a demand. The perpetrators are usually political terrorists who want to effect a tangible, usually political result. Theoretically, at least, the terror will end if and when the demands are met or a compromise is forged. By contrast, there is little that can be done to appease the perpetrators of *retributive terrorism,* who are primarily interested in destroying, not influencing, their enemies. Here, the target is hated not because of what they do, but for the very fact that they exist, so nothing less than their complete eradication will suffice. These are more likely to be religiously or racially motivated attacks.

Another aspect of mass terrorism is its effects on those who are not directly harmed in the incident, but whose lives and fortunes are secondarily affected by it (Kratcoski et al, 2001). For example, attacks on airports or financial institutions can result in losses of millions of dollars to the many persons whose livelihoods depend on travel or commerce. Governments or localities victimized by terrorist attacks must divert otherwise-needed funds for defense, security, medical aid, and other services. Additionally, as much as citizens may be victimized and intimidated by the terrorists themselves, government agencies' efforts to control the terrorism may impose restrictions on the citizens' abilities to move about freely or may compromise basic freedoms and human rights. All of these have been prominent concerns following 9/11.

Posttraumatic Stress Disorder (PTSD)

Although persisting and debilitating stress reactions to wartime and civilian traumas have been recorded for centuries (Trimble, 1981; Wilson, 1994), *posttraumatic stress disorder (PTSD)* first achieved status as a codified psychiatric syndrome in 1980 (APA, 1980). A number of other kinds of psychological syndromes, such as phobias, anxiety, panic attacks, and depression, may follow exposure to traumatic events, but the quintessential psychological syndrome following psychological traumatization is PTSD. Diagnostically, PTSD is a syndrome of emotional and behavioral disturbance following exposure to a traumatic stressor that injures or threatens self or others, and that involves the experience of intense fear, helplessness, or horror. Most often identified in combat settings or in victims of criminal assault, PTSD also may be a sequel of a wide range of civilian injuries, accidents, or disasters (APA, 2000; Meek, 1990; Merskey, 1992; Miller, 1994, 1998c, 2001, 2007d, 2008c; in press; Miller, Miller, & Bjorklund, 2010; Modlin, 1983, 1990; Weiner, 1992). Following a terrorist attack, victims may develop a characteristic set of symptoms, falling into the three diagnostic classifications of *intrusion/re-experiencing, numbing/*

avoidance, and *agitation/hyperarousal.* Expressions of these index symptoms may include the following.

Anxiety. The victim experiences a continual state of free-floating anxiety, and maintains an intense hypervigilance, scanning the environment for impending threats of danger. Every low-flying plane or sound of a police siren may induce panic.

Physiological arousal. The victim's nervous system is on continual alert, producing increased bodily tension in the form of muscle tightness, tremors, restlessness, heightened startle response, fatigue, heart palpitations, breathing difficulties, dizziness, headaches, or other physical symptoms.

Irritability. There is a pervasive edginess, impatience, loss of humor, and quick anger over seemingly trivial matters. Friends and coworkers get annoyed and shun the victim, while family members may feel abused and alienated. Daily interactions with other people may grow testy and lead to unwanted confrontations.

Avoidance/denial. The victim tries to blot out the event from his mind. He avoids thinking or talking about the traumatic event, and shuns news items, conversations, TV shows, or even other victims that remind him of the incident. Part of this process is a deliberate, conscious effort to avoid trauma-reminders, while part involves an involuntary psychic numbing that blunts incoming threatening stimuli.

Intrusion. Despite the victim's best efforts to keep the traumatic event out of her mind, the disturbing incident pushes its way into consciousness, typically in the form of intrusive images or flashbacks by day, and/or frightening dreams at night.

Repetitive nightmares. Sometimes the victim's nightmares replay the actual traumatic event; more commonly, the dreams echo the general theme of the trauma, but miss the mark in terms of specific content. The emotional intensity of the original traumatic experience is retained, but the dream may partially disguise the actual event.

Impaired concentration and memory. Friends and family may notice that the trauma victim has become a "space cadet," while supervisors report deteriorating work performance because the person "can't concentrate on doing his job." Social and recreational functioning may be impaired as the victim has difficulty remembering names, loses the train of conversations, or can't keep her mind focused on reading material or games.

Withdrawal/isolation. The trauma victim shuns friends, workmates, and family members, having no tolerance for the petty, trivial concerns of everyday life. The hurt feelings this engenders in those rebuffed may spur resentment and counteravoidance, leading to a vicious cycle of mutual rejection and eventual social ostracism of the victim.

Acting-out. More rarely, the trauma victim may walk off his job, wander out of his neighborhood, or take unaccustomed risks by driving too fast, gambling, using substances, or associating with unsavory characters, thereby putting himself or others at unnecessary risk.

Psychological Interventions For Terrorist Crises

Qualified mental health clinicians have an important role to play at all phases of a terrorist attack, from the immediate crisis, to the evolving scope of the trauma, and through the short- and long-term recovery efforts.

On-Scene Crisis Intervention

The initial point of contact between first responders and terrorist victims is often at the crime scene itself. Here, the first responder – who may be a law enforcement officer, emergency medical technician, or mental health crisis counselor – is confronted with a victim whose emotional behavior may run the gamut from numbed unresponsiveness to raw panic. Aside from providing medical and psychological first aid, a frequent practical task of first responders is to obtain as much information as possible from the victim about the terroristic crime itself in order to maximize the possibility of apprehending the perpetrator(s), preventing further violence, and planning for coordinated aid to other potential victims. Balancing concern for victim welfare and the need to obtain detailed information is thus a delicate task and typically requires substantial interpersonal skill on the part of the investigator. It is here that mental health clincians can work collaboratively with other first responders to ensure that investigators obtain valuable data, while victims receive optimal care. Many of the following recommendations for on-scene intervention with terror victims have been adapted from work with victims of crime, disasters, and mass casualty accidents (Clark, 1988; Miller, 1998b, 1998c, 1999d, 2001, 2002c, 2003a, 2003b, 2004, 2005, 2007c, 2008c; Miller & Schlesinger, 2000).

First, introduce yourself to the victim and bystanders. Even if you are in uniform, are wearing a picture ID tag, or "look like a doctor," the victim may be too distraught to understand who you are. You may need to repeat the introduction several times. Remember that victims who are still in shock may respond to you as if you are a perpetrator, especially if you arrived quickly on the scene. Children traumatized by adults may respond with fear to any new adult in their environment.

Avoid even unintentional accusatory or incriminatory statements such as "What were you doing in that building so late at night?" These not only needlessly upset and retraumatize the victim, but also erode trust, making further interview and treatment attempts extremely difficult. Avoid platitudes such as "It's okay" or "Everything will be all right," which will doubtless sound hollow and insincere to a victim whose world has just been shattered. Better are concrete statements such as "We're here to treat your injuries," or "We're going to take you to a safe hospital."

Avoid statements or body language indicating to a child or adolescent victim that you think he/she should "act your age," or to adult victims that they should "pull yourself together." Most people don't behave normally when they've been victimized, and many adult and adolescent victims may revert to childlike behavior immediately after the incident. In such cases, simple, nonjudgmental statements such as "I can understand why you're upset" or "What can I do to help?" can ease the victim's distress.

If you are a medical treatment provider, explain what you're doing, especially when you are touching the victim or performing an invasive or otherwise intimate procedure, such as putting in an IV, applying a breathing mask, or cutting away clothing. If possible, let the victim help you treat her if she wants. This may be as simple as having her hold a bandage on her arm or letting her undo her own clothing, but it can offer a much-needed quick restoration of a sense of control in a situation where the victim is otherwise reeling in a state of helpless disorientation. In particular, many children respond well to this "helping" maneuver.

Also related to restoration of control is respect for the victim's wishes whenever reasonable. If, for example, the victim wants a family member or friend to remain with her during treatment or questioning, let that person stay. Don't take offense if the victim is reluctant to let you touch, treat, or even talk to her; you may look, act, speak, or smell like the perpetrator(s). Youthful victims are often unable to express their fears and may just flail or shout, "Get away from me!" Perhaps another member of the emergency response or law enforcement team can treat or interview the patient more comfortably.

Listen to the victim if he wants to talk, even if he digresses, rambles, or strays off topic. Let him express emotion if he has to "get it all out." Even the most hardboiled investigator or seasoned EMT should understand that a sympathetic, supportive, and nonjudgmental approach can do much to restore the terrorist victim's trust and confidence and thereby facilitate all aspects of the case. At this stage, don't press for more detail than necessary for purposes of immediate treatment or case investigation – victims of terror will be forced to tell their stories again and again as the aftermath of the crisis proceeds.

On-Scene Mass Casualty Intervention

In mass terror attacks, surviving victims may be multiplied by dozens, hundreds, or thousands. In such cases, mental health interventions will resemble those used in many kinds of mass disaster situations (Miller, 1998c).

Physical Care and Safety

We mental health clinicians like to think of ourselves as specializing in "psychological" forms of treatment, but what disaster victims often need first is down-to-earth, practical provision of basic services. Somebody's got to help clear the debris and hand out the sandwiches before we can even think of getting survivors to pay attention to stress management lectures and coping skills groups. One way to look at this is to remember that, in times of disaster, physical care *is* psychological care, and initial postdisaster interventions must focus on establishing safety, providing nourishment and medical treatment, and affording protection from the elements, not to mention from possible continued or subsequent attacks (Kinston & Rosser, 1974; Ursano et al, 1995b).

Information and Education

Once mass terror survivors feel they're out of immediate danger, once they've been fed, clothed, bandaged, and sheltered, then they usually want answers. Lack of accurate information is itself potentially traumatic, and may be physically harmful if wild rumors result in panic or deprivation of services. Key points of information include the nature and

effects of the terrorist event itself and the progress of any ongoing or forthcoming response and relief efforts.

It is important to reestablish communication networks in the traumatized community as soon as possible. Where functional, radio, television, cell phones, the Internet, and even printed bulletins can provide information as well as emotional help. Rumor management is an important task of community leaders and an area in which mental health personnel can assist. Fears of loss and separation should be addressed by establishing reliable communications, including casualty identification and notification procedures. Basic information should be provided about sanitation and medical care (Ursano et al, 1995b).

Moving to the psychological realm, victims of disaster appear to benefit from basic, understandable information about the onset and course of posttraumatic symptoms. The key is to normalize the traumatic stress experience while discouraging an alarmist expectation of severe psychological disability to come. Victims should know what to expect, but not be "talked into" unnecessary distress.

Community Responses

For many mental health workers, mass terror and disaster psychology requires a shift from the traditional individualistic focus on psychopathology. Ursano et al (1995b) have adapted preventive medicine's epidemiological model in infectious disease and toxicology as the paradigm for psychological disaster intervention. This model includes determining the individual's level of exposure to emotion-laden stimuli, such as gruesome scenes or the experience of having family members killed or injured. It also involves identifying individuals at higher risk for traumatic disability and monitoring behavioral and psychological responses over both the short and long term.

Mental health consultation to the community can facilitate recovery and limit disability following a catastrophic event (Pitcher & Poland, 1992; Ursano et al, 1995b). In the wake of a terroristic disaster, the mental health consultant attempts to identify high-risk groups and behaviors, foster recovery from acute stress, decrease the prevalence of serious disorders, and generally minimize pain and suffering. Both acute and long-term effects of the disaster must be considered. Initial interventions include consultation to the affected community's leaders, clinicians, teachers, clergy, law enforcement, and other care providers to maximize their understanding of the responses to trauma and disaster.

Because many mass terror victims can't or won't present themselves to traditional mental health services, psychological care must be organized around outreach programs in the community. Identifying high-risk groups is thus one of the most important aspects of disaster consultation (Pitcher & Poland, 1992; Ursano et al, 1995b). The consultation team in the affected community must integrate smoothly into the disaster environment at a time when outsiders are often experienced as intrusive.

Death Notification

A frequently neglected topic in the criminal justice and mental health treatment process is the nature of proper notification of family members that a loved one has been killed or that the body of a missing relative has been located and identified. Mass terror attacks like those on 9/11/01 can multiply this task by the thousands. Here again, mental health clinicians can aid the efforts of law enforcement, military, and emergency personnel to provide exquisite sensitivity and support in breaking this worst of all possible news to families.

A practical death notification protocol is as follows (Miller, 2006d, 2008a, 2008c; Spungen, 1998). To begin with, always go in person. Unless there is absolutely no other choice, death notification should never be made over the phone. Go in pairs, and decide who will be the lead person, whose job it will be to actually say the words and give the bad news. The other team member provides backup support, monitors the survivors for adverse reactions, and provides temporary supervision of young children during the notification, if needed. If no one is home when you get there, wait a reasonable amount of time. If you are queried by a neighbor, ask about the family's whereabouts, but don't reveal the purpose of your visit to anyone but the immediate family. If the family still doesn't show up, leave a card with a note and a number to call. When the call comes, return to the family's home to make the notification.

Needless to say, make sure you have the correct family and residence. This may seem obvious, but where multiple victims are involved in the aftermath of a mass terror attack, it is easy to confuse one victim's name or address with another, so be careful. When you do arrive, ask for permission to enter. Suggest that family members sit down face-to-face with you. Get to the point quickly and state the information simply and directly. If the facts are clear, don't leave room for doubt or false hope. You needn't be brutally blunt or insensitive, but try to use straight language and avoid euphemisms. Use the

deceased's name or his/her relationship to the family member being informed, for example, "We're sorry to have to bring you this terrible news, Mrs. Jones. Your daughter, Mary, was killed in that bus explosion by suspects who we're actively trying to apprehend. Mary and her personal effects are at Municipal hospital."

Allow time for the news to sink in. It may be necessary to repeat the message several times in increasingly clear and explicit terms. Tolerate silence and be prepared for the calm to be broken by sudden explosions of grief and rage. Intense reactions should be physically restrained only if there is some danger to self or others. In the face of outright denial, be as gentle as possible, but make it clear that the death has in fact occurred. Answer all questions tactfully and truthfully, but don't reveal more information than is necessary at that time. Repeat answers to questions as many times as necessary. Try to be as calm and supportive, as comforting and empathic, as possible. Let the tone and cadence of your voice register the appropriate amount of respect and dignity, but don't become overly maudlin or lose control yourself.

Offer to make phone calls to family, friends, neighbors, employers, clergy, doctors, and so on. Ask family members if they want you to get someone to stay with them. Respect the family's privacy, but don't leave a family member alone unless you're sure they're safe. High emotionality can impair memory, so give pertinent information and instructions in writing. Provide family members with the names and telephone numbers of a victim advocate, prosecutor, medical examiner, social service agency, and/or hospital; try to consolidate all the information onto one sheet.

Explain to family members what will happen next, e.g. body identification, police investigation, and criminal justice procedures. If this is a high-profile case, brief them on how to handle the media. Give family members as much information as they ask for, without overwhelming them. Repeat the information as many times as needed.

Determine if the family members require some means of traveling to the medical examiner's office, hospital, or police station. Offer to drive them or arrange for a ride if they have no transportation. Be sure to provide a ride back home, and try to assist them with babysitting arrangements and other needs. If the notifying team is made up of police personnel and a victim advocate or social service worker, the latter may remain with the family members after the police leave (Miller, 2006d, 2008a, 2008c; Spungen, 1998).

Body Identification

The finality of identifying the deceased's body can have a paradoxically dual effect. On the one hand, there is the confrontation with the victim's remains and the final shattering of any hope that he or she may still be alive. On the other hand, the actual sight of the deceased often provides a strange sort of reassuring confirmation that the victim's death agonies may actually have fallen short of the survivor's imagined horrors, and even if not, the physical presence of the body at least means that the victim's suffering is finally over (Rynearson, 1988, 1994, 1996; Rynearson & McCreery, 1993). Outcome studies of relatives after a death from natural causes report shorter periods of denial and higher total recall of the deceased in mourners who were able to view the body prior to burial (Sprang & McNeil, 1995).

Referring specifically to the 9/11 World Trade Center attack, Boss (2002) hypothesizes that seeing the remains of a loved one provides a certain cognitive certainty of death, and allows defenses to be let down, permitting the survivors to unyoke their self-image from that of the heretofore missing person. In this respect, survivors may yearn for some form of physical remains because, paradoxically, having the body enables them to let go of it. Otherwise, what Boss (2002) calls *ambiguous loss* can result in rigidity of defenses and constriction of life. There appears to be a primitive, visceral need to be in the presence of physical remains – even a particle of bone or a microscopic swab of DNA – before one is able to ultimately succeed in separating psychologically from the lost person.

Some useful guidelines for helping survivors through the process of body identification (Miller, 2006d, 2008a, 2008c; Spungen,1998) are as follows. Unless there is a legal requirement, let survivors make the choice as to whether they want to view their loved one's remains. Some family members may be anxious or intimidated about making or declining such a request or articulating their wishes, so ask them. In cases where it is forensically essential to involve the family in the identification process, as when the victim has been missing for a long time, be sure to provide the appropriate support.

Family members may want to touch the deceased. For some, it may be a way of beginning to accept the reality of the death, a way of saying a final goodbye. If the victim's body is mutilated, dismembered, burned, decomposed, or disintegrated, identification may have to be made through dental records, personal effects, etc. Explain to the family

members why this is necessary and give them the choice of whether or not to view the remains. Again, provide the appropriate support.

Where no body has been recovered, state this plainly. If there is hope that remains may yet be found, state this, but try to be as realistic as possible about the odds. There is, in fact, some precedent for this. Ships sunk at sea or planes immolated in crashes rarely produce remains. In such cases – as with victims crushed in the ruins of the collapsed twin towers of the World Trade Center – notify the family of whatever identification procedures may be occurring, such as DNA-matching, and direct them to the proper authorities. Also, if artifacts from the victim are found at the scene, such as a pair of glasses, a piece of jewelry, or a child's toy, these might be in police custody for use as evidence in later prosecution. Let the family know this, and explain to them the procedures for reclaiming these hierlooms, should they wish to do so (Spungen, 1998).

When no definitive remains are found, "symbolic remains" may serve as a surrogate. For example, an urn of ashes from Ground Zero was offered by the City of New York to each family of a missing person. Boss (2002) quotes the brother of a man missing in the World Trade Center debris as "choos[ing] to believe that part of my brother's body is in these ashes." Through this symbolic device, he was able to relinquish the ambiguous hope for his brother's return and move on to accepting his death. Yet this was not enough for the wife of that same missing man – she needed to wait for definitive proof of death, even a DNA match, and seemed to be prepared to hold on for as long as it took.

Boss (2002) observes that a well-developed capacity for dialectical thinking and a higher level of ambiguity tolerance in general tend to characterize people who can resolve the issues of ambiguous loss. These individuals are able to hold two opposing ideas in their mind at the same time, such as "My son is gone, but he is also still here and always will be in some way." Or, "I'm moving forward with my life but I won't stop looking for him." In this way, when there is no clear answer, the only way to stave off total despair is to hold on to the possibilities of both absence and presence.

Short-Term Crisis Intervention Protocols

After the emergency has passed, the kind of interventions that take place in the next few post-trauma days can make an important difference to the long-term mental health of survivors. Two of the most widely used models of short-term mental health crisis intervention are *critical incident stress debriefing (CISD)* and the *National Organization of Victim Assistance (NOVA)* program.

Critical Incident Stress Debriefing (CISD)

Critical incident stress debriefing (CISD) is a structured group intervention designed to promote the emotional processing of traumatic events through the ventilation and normalization of reactions, as well as preparation for possible future crisis experiences. Although initially designed for use in groups with law enforcement and emergency services personnel, variations of the CISD approach have also been used with individuals, couples, and families who are crime or disaster victims or co-victims (Everly et al, 1999; Miller, 1998c, 1999e, 2006d, 2007c, 2008c; Mitchell & Everly, 1996). CISD is actually one component of an integrated, comprehensive crisis intervention program spanning the critical incident continuum from precrisis, to crisis, to postcrisis phases, subsumed under the heading of *critical incident stress management (CISM)*, which has been adopted and modified for law enforcement and emergency services departments throughout the United States, Britain, and other parts of the world (Davis, 1998/99; Dyregrov, 1989; Everly et al, 1999; Reese, 1991).

A critical incident debriefing is typically a peer-led, clinician-guided process, although the individual roles of clinicians and peers may vary from setting to setting. The staffing of a debriefing usually consists of a mental health clinician and one or more peer debriefers, i.e. fellow police officers, firefighters, paramedics, or other crisis workers who have been trained in the CISD process and who may have been through critical incidents and debriefings in their own careers. For civilians, the group may be led by the mental health professional or civilian peer-debriefers.

A typical debriefing takes place within 24 to 72 hours after the critical incident and consists of a single group meeting that lasts two to three hours, although shorter or longer meetings may be dictated by circumstances. Group size may range from a handful to a roomful, the determining factor usually being how many people will have time to fully express themselves in the number of hours allotted for the debriefing; a typical meeting will have up to 15-20 participants. Where large numbers of victims or emergency personnel are involved, such as at mass casualty sites, several debriefings may be held successively over the course of

days to accommodate all the personnel involved (Mitchell & Everly, 1996).

The formal CISD process – often referred to as the *ICISF model,* after its association with the International Critical Incident Stress Foundation – consists of seven key phases, designed to assist psychological processing from the objective and descriptive, to the more personal and emotional, and back to the educative and integrative levels, focusing on both cognitive and emotional mastery of the traumatic event:

1. *Introduction phase.* The introduction phase of a debriefing is the time when the team leader – either a mental health professional or peer debriefer, depending on the composition of the group – gradually introduces the CISD process, encourages participation by the group, and sets the ground rules by which the debriefing will operate. Generally, these involve confidentiality, attendance for the full session, unforced participation in the discussions, and the establishment of a noncritical atmosphere.

2. *Fact phase.* During this phase, the group members are asked to briefly describe their job, role, or personal experience during the incident and, from their own perspective, provide some facts about what happened. The basic question is: "What did you do?"

3. *Thought phase.* The CISD leader asks the group members to discuss their first and subsequent thoughts during the critical incident: "What went through your mind?"

4. *Reaction phase.* This phase is designed to move the group participants from a predominantly cognitive mode of processing to a more cathartic, emotional level: "What was the worst part of the incident for you?" It is usually at this point that the meeting gets intense, as members take their cues from one another and begin to vent their distress. Clinicians and peer-debriefers keep a keen eye out for any adverse or unusual reactions among the participants.

5. *Symptom phase.* This begins the movement back from the predominantly emotional processing level toward the cognitive processing level. Participants are asked to describe cognitive, physical, emotional, and behavioral signs of distress that appeared immediately at the scene or within several hours of the incident, a few days after the incident, and continuing up to the time of the debriefing: "What have you been experiencing since the incident?"

6. *Education phase.* Continuing the move back toward intellectual processing, didactic information is provided about the nature of the stress response and the expected physiological and psychological reactions to critical incidents. This serves to normalize the stress and coping responses and provides a basis for questions and answers.

7. *Re-entry phase.* This is the wrap-up, during which any additional questions or statements are addressed, referral for individual follow-ups are made, and general group bonding is reinforced: "What have you learned?" "Is there anything positive that can come out of this experience that can help you grow personally or professionally?" "How can you help one another in the future?" "Anything we left out?"

This is not to suggest that these phases always follow one another in an unvarying, mechanical sequence. I've found that in practice, especially for civilian groups, once the participants feel comfortable with the debriefing process and start talking, there is a tendency for the fact, thought, and reaction phases to blend together. Indeed, as Mitchell & Everly (1996) recognize, it would seem artificial and forced to abruptly interrupt someone expressing emotion just because "it's not the right phase." As long as the basic rationale and structure of the debriefing are maintained, the therapeutic effect will usually result. Indeed, on a number of occasions, previously silent members have spoken up at literally the last moment, when the group was all but getting up to leave. Clinician team leaders typically have to step in only when emotional reactions become particularly intense, or where one or more members begin to blame or criticize others (Miller, 1999e).

NOVA Model of Group Crisis Intervention

The *National Organization for Victim Assistance (NOVA)* provides another model for group crisis intervention, geared more specifically for disaster victims (Strebnicki, 2001; Young, 1988, 1994). This model uses a similar protocol to that of the CISD model and is comprised of three phases of intervention which can typically be accomplished in one 90-minute session. The strategies and approaches used to facilitate group debriefings allow crisis responders to work with large groups of both primary and secondary survivors.

NOVA has adopted the term "group crisis intervention" rather than "group debriefing" because the term "debriefing" is often used in military and law enforcement contexts, potentially creating confusion among civilian survivors of traumatic incidents.

Group crisis interventions often take place at or near the site of the critical incident. Strategies in this model allow group facilitators to consider group size as well as sociocultural aspects of the population being served. Separate peer groups should be held with direct victims and survivors who were closest to the traumatic epicenter. Those who were more indirectly affected by the critical event, such as rescue teams, trauma counselors, or other crisis response personnel should be debriefed in a separate group. Timing of the group crisis intervention is also important, as some groups may respond best within hours of the crisis, while others may need several days to decompress sufficiently for therapeutic intervention to take hold.

The NOVA model contains three basic intervention phases:

1. *Safety and security.* This first phase usually begins with introductions of the group facilitator(s), as well as setting the groundwork for a therapeutic environment based on trust, safety, confidentiality, and personal disclosure. The goal of this phase is to provide a safe environment for survivors to release intense emotions after a traumatic event. This seems to correspond to the Introduction phase of the CISD model.

2. *Ventilation and validation.* The second phase allows survivors to ventilate and review physical, emotional, and sensory experiences they associated with the critical incident. Some key questions that the group facilitator(s) may use during this phase include: "Where were you when this incident happened? Who were you with? What did you see, hear, smell? What did you do next? How did you react at the time? This phase of the intervention provides an opportunity for survivors in the group to become aware that others have had similar experiences. This is also an opportunity to educate the survivors on common emotional reactions to extraordinary stressful and traumatic events, reinforcing the belief that they are not "going crazy" and that other people in the group have similar feelings and emotions. During this phase, survivors should be provided with factual information regarding the traumatic event that has taken place to dispel any misinformation and counter any myths or rumors. This second phase of the NOVA program apparently incorporates the Fact, Thought, Reaction, Symptom, and Education phases of the CISD model. A second set of questions that would be beneficial in this phase includes: "Since the time of the event, what are some of the memories that stand out for you? What has happened in the last 48 hours? How has this event affected your life?"

3. *Prediction and preparation.* The final NOVA phase is be a time for group members to try and cultivate seeds of hope for the future. Survivors should be encouraged and instructed on how to prepare for future emotions and identify any critical life areas that would hinder their recovery. This is also a time for survivors to identify resources and supports that will facilitate coping and healing. The affinity here is with the Re-entry stage of the CISD model. The third series of questions that group facilitators may pose includes: "After all that you have been through, what do you think will happen in the next few days or weeks? Do you think that your family, friends, and community will continue to be affected? Do you have any concerns about what will happen next?"

Individual Therapy

Beyond the crisis intervention and immediate post-traumatic stages, many survivors of terroristic trauma will require longer-term psychotherapy or other forms of mental health counseling (Miller, 2003a, 2003b, 2004, 2005, 2008c). Often, an interval of time must pass before survivors will be receptive to this form of intervention. In some cases, a year or more must go by in order for the survivor to live through anniversary reactions to the event. As noted above, most effective psychotherapeutic treatment modalities for victims of terroristic trauma combine features of crime victim and disaster survivor strategies.

It might be assumed that the enormity of a nationwide trauma like 9/11 might provide a kind of reality check, helping some patients put their own idiosyncratic crises and preoccupations into perspective, and actually aiding them in coping – a kind of "there but for the grace of God go I" reaction. Instead, it has been my clinical experience that, if

anything, many people's personal tragedies were actually magnified by the national trauma: "Here I am, struggling with my alcohol abuse, or my social phobia, or my dysfunctional work behavior, or my chronic pain syndrome, or my lousy marriage, or my rotten kids – and now I have to deal with *this, too?*"

On a positive note, for a number of patients, this cumulative stressor effect has been the stimulus that impelled them to begin or resume therapy, this reaction seeming to say: "Well, the world might be coming to an end, so this is as good a time as any to take care of my personal stuff." In several cases, this has had a positive effect on family and social functioning as well. In other cases, it has led to family dissolution and employment self-termination, as disaffected spouses or workers decide that it's finally time to stop waffling about their unhappy relationships or jobs and "do something about it." In each case, the therapist must make a careful assessment as to whether such decisions represent a courageous leap in the face of fearful circumstances, or an ill-advised impulsive act to bind anxiety or express smoldering anger.

Sprang & McNeil (1995) have presented a phased treatment model for survivors of murder victims that can productively be applied to the treatment of survivors of terroristic homicide. An initial evaluation and debriefing phase occurs immediately following the traumatic event and focuses on crisis intervention and stabilization of the individual's emotional, social, and physical environment. At this stage, the therapist should be careful about challenging the patient's defenses; if anything, self-protective defenses may have to be shored up to forestall complete psychological decompensation. Appropriate interventions include empathic support, validation, and normalization of the patient's reaction to the traumatic loss.

The importance of intact, adaptive defenses at this point is highlighted by the need to prepare survivors for the multiple losses – emotional, financial, practical, and social – that follow the terrorist killing of a family member. Therapists should encourage a graded and dosed ventilation of emotion and provide the necessary support. Then they should gradually begin to educate family members as to what they can expect, and try to dispel unrealistic expectations. Other aspects of this educative process include providing concrete information about such victim resources as the Red Cross, NOVA, Crime Victims Compensation Fund, employee EAP programs, and so on. At each step, the therapist should monitor patients' reactions to avoid overwhelming them with too much information too quickly (Sprang & McNeil, 1995).

When trust and therapeutic rapport have developed, the therapist should help the patient identify symptoms of distress. These should be explained, normalized, demystified, depathologized, and validated to the patient. Pertinent relaxation, biofeedback, desensitization, and other effective cognitive-behavioral or psychophysiological techniques should be applied to symptom management. Opportunities should be provided, arranged, or planned for patients to take back some control of their lives, for example, by helping and educating others or running support groups. Psychodynamically-oriented therapists may use transference dynamics as a vehicle for enabling patients to adaptively seek and obtain support from significant others in their social environment (Miller, 1994b, 1998a, 1998b, 1998c, 2008c; Miller & Schlesinger, 2000; Sprang & McNeil, 1995; Young, 1988, 1994).

The patient should be helped to reduce self-blame through the use of cognitive therapy or existential treatment approaches. Psychological mastery over the traumatic bereavement can be encouraged by asking patients to describe the future: "If you were not struggling with your grief anymore, what would you be doing?" In the early stages, such a question may elicit little more than angry incredulity from patients, who may bridle at the suggestion that there could ever be a time when they were not consumed by unrelenting emotional pain. Accordingly, one sign of recovery may be the ability to even entertain this kind of question. A related process involves helping the patient say a psychological "goodbye" to the slain loved one, realizing that there will always be painful memories, but that the survivors have a right to continue their own lives (Sprang & McNeil, 1995; Spungen, 1998).

An important point here is that the therapist's or other caregiver's role is not to encourage survivors to "get over it." Family members will never "get over" the malicious annihilation of a loved one, and the memory will continue to sting them periodically for the rest of their lives. Perhaps less obviously, therapists should not state or imply, even well-meaningly, that survivors "should be doing better by now" or "should be able to stop thinking about the person already." This is unrealistic and sets the patient up for failure because he or she may never be able to meet the imposed standard of "getting over it." A far more productive therapeutic approach involves validating the survivors' pain, while supporting their strengths and helping them to live as normalized a life

as possible, albeit a life that will be radically different from the one they led before (Schlosser, 1997; Shorto, 2002; Spungen, 1998).

Some survivors, especially in the early stages, may have difficulty expressing their pain to a therapist or anyone else; for them, speaking about the victim's death "out loud" concretizes it and symbolically makes it real. For such patients, Spungen (1998) recommends keeping a daily diary or journal and writing down their thoughts and feelings about the murder and about their deceased loved one. This notebook should be portable enough to carry around so that patients can jot down their thoughts as they occur. A modern version of this would be some type of personal recorder, although the physical act of writing – internally reflecting upon and conceptualizing what you're thinking in order to transcribe it in an externally communicable form – seems to have a more beneficial effect; clinicians will recognize this as the technique of *journaling* or *narrative therapy.* Spungen (1998) has found that some co-victims may create several volumes of such notes before they realize they have made progress. The only caveat is that this exercise not become a prolonged obsessive preoccupation to the exclusion of other therapeutic strategies and participation in life generally.

In the case of victims of mass casualty terrorism, such as Oklahoma City or the World Trade Center, what most mental health professionals think of as traditional psychotherapy will usually play its most effective role after basic safety and comfort needs have been met, the rescue efforts completed or well underway, or even later, when survivors have salvaged what they can, settled insurance claims and other practical matters, and perhaps moved on and resettled in a different locale. Now with the opportunity for reflection and the prospect of rebuilding a life, the full impact of the traumatic terrorist attack may come flooding back in a delayed reaction.

In other cases, where the patient is the direct surviving victim of the terrorist attack, the trauma memories or their emotional charge remain choked off from consciousness, and the patient reacts to traumatic cues and reminders with disturbing somatic symptoms or uncharacteristic deterioration in behavior. In these cases, the traumatic experience and the patient's reaction to it may first have to be elicited and uncovered by careful probing on the part of the clinician. Such contextually conditioned fear cues can best be obtained through careful questioning regarding the terror victim's experiences at the height of the crisis. By simply asking what the victim saw, heard, felt, touched, smelled, or tasted, the clinician opens additional channels of information and facilitates additional narrative working-through. Proprioceptive and kinesthetic cues can draw forth intense elaborations of the terror attack experience, such as being crushed, pinned, confined, or burned (Abueg et al, 1994). In skilled hands, the careful use of assistive techniques, such as relaxation and hypnosis, may be helpful in individual cases (Miller, 1994b).

Guilt – being at the "wrong place at the wrong time" or not "doing enough" during the attack – may be a pervasive theme following mass terror attacks. The therapist must help the survivor explore such themes as feeling that he or she didn't help out enough during the crisis, froze under pressure, made a mistake during the recovery phase, or somehow was responsible for some unfortunate consequence. Once the history of these events is pieced together, information on what to expect, cognitive-behavioral restructuring of deleterious thoughts and actions, and skill-building in desensitization to feared imagery can be implemented. In this regard, therapists can assist patients in modifying distorted attributions, e.g. "It's all my fault – if only I had insisted that my husband not go to New York that week, he wouldn't have been in Tower II when the plane hit" (Abueg et al, 1994; Ursano et al, 1995b).

One important goal of psychotherapy that is basic to all trauma therapy is increasing the terror victim's or surviving family member's sense of controllability and predictability. In this regard, the construction of meaning from adversity is an active process that appears to affect the outcome of the traumatic experience and recovery. The meaning of any kind of catastrophe to a particular individual emerges from the interaction of his or her past history, present life circumstances, and the idiosyncratic interpretation of the traumatic event. The ascribed meaning will then direct individual behaviors of what to do, what to fix, and whom or what to blame. Remember that the "meaning" of any given traumatic event is dynamic, not static; it changes over time as the individual's psychosocial context changes (Abueg et al, 1994; Ursano et al, 1995; Ursano et al, 1992; Ursano and McCarroll, 1990).

Hanscom (2001) describes a treatment model that emerged from her work with survivors of torture, and that may be applied to victims of terrorism. In this model, an essential condition of healing of survivors of torture and trauma is the reestablishment of the experience of trust, safety, and the ability to have an effect on the world. This relearning relies less on particular therapeutic techniques and procedures than on the compassionate human interaction and therapeutic

alliance between the survivor and a counselor who is willing and able to listen effectively.

Hanscom (2001) describes what she calls the *HEARTS model,* which is an acronym for the following:

H = Listening to the HISTORY. This includes providing a gentle environment, listening with body language, attending the flow of speech; hearing the voice and tone of the speaker, observing the speaker's movements and reactions, looking at facial expressions, remaining quietly patient, and listening compassionately. Clinicians will recognize this as a basic description of "active listening."

E = Focusing on EMOTIONS and Reactions. This involves using reflective listening, asking gentle questions, and naming the emotions.

A = ASKING About Symptoms involves using your own personal and therapeutic style to investigate current physical symptoms, current psychological symptoms, and suicidality.

R = Explaining the REASON for Symptoms. This includes showing how the symptoms fit together, describing how the body reacts to stress and trauma, explaining the interaction between the body and mind, and emphasizing that these are normal symptoms that normal people have to a very abnormal event.

T = TEACHING Relaxation and Coping Skills involves instructing the patient in relaxation skills, such as abdominal breathing, meditation, prayer, imagery, visualization, and others, and discussing coping strategies, e.g. recognizing how the patient has coped in the past, reinforcing old and healthy strategies, and teaching new coping skills.

S = Helping with SELF-CHANGE. This involves discussing the person's world view – the original view, any changes, adaptations, or similarities – and recognizing the positive changes in the self.

Family Therapy

Whether it is a single family member who is hurt or killed in a terrorist attack, or a mass casualty incident where hundreds of families are killed, injured, or displaced, family members can have both exacerbating and mitigating influences on one another in their efforts to cope with the trauma. Accordingly, a key therapeutic task often involves turning vicious cycles of recrimination and despair into positive cycles of support and hope.

Family therapists will recognize that the effects of successive traumas are often cumulative, (Alarcon et al, 1999; Catherall, 1998; Figley, 1998; Miller, 1994, 1998b; Weiner, 1992), and therapy for terroristic bereavement may have to deal with unresolved traumatic material from the past, which will almost certainly be re-evoked by the more recent trauma of the family member's murder. Also, other aspects of life cannot automatically be put on hold when the death occurs, so therapy must address coexisting issues such as school and job problems, marital conflict, substance abuse, or other preexisting and coexisting family stresses. This may require some prioritization by the therapist in terms of what are "front-burner" vs. "back-burner" issues (Spungen, 1998).

Throughout the course of therapy, the supportive nature of the clinical intervention and the therapeutic relationship are essential elements in the traumatic resolution for families. The nature of the therapeutic relationship may serve to buffer the effects of the trauma, increase self-esteem, and alter the family's role functioning, thereby helping to mitigate the traumatic impact of the event (Miller, 1993a, 1994a, Sprang & McNeil, 1995).

Spungen (1998) cites Getzel & Masters' (1984) delineation of the basic tasks of family therapy after bereavement by homicide. These involve helping the family understand and put into perspective the rage and guilt they feel about their loved one's murder. Therapy can also help survivors examine their grief reactions and other people's availability to them so that they can regain some confidence in the social order. Families must learn to accept the death of their relative as something irrevocable yet bearable. This will be facilitated by assisting members of the immediate and extended kinship systems to establish a new family structure that permits individual members to grow in a more healthy and fulfilling manner.

In cases of individual and family therapy for parents of murdered children – the daycare center at the 1994 Oklahoma City Murrah Building bombing would be a stark example – Rynearson (1988, 1994, 1996) cautions against pushing the cathartic narrative too quickly, especially in the early stages of treatment. A common defense against overwhelming emotional turmoil for many bereaved family members is to adopt what appears to be either an unnatural flippancy or a hyperrational "just-the-facts" attitude, which others may

mistake for unconcern or callousness. If, immediately following the terroristic homicide, some family members cope better by using the twin emotional crutches of avoidance and denial, this should be provisionally respected by the therapist. Remember, even in orthopedics, the useful and legitimate function of a "crutch" is to support a limb until sufficient healing occurs that will allow more active rehabilitation and independent action (Miller, 1998c, 2008c).

When the therapeutic narrative does begin to flow, psychotherapy for terroristic bereavement combines many of the features of individual PTSD therapy and family therapy modalities. The clinician should inquire about individual family members' private perceptions of death. Nihilism and despair are common early responses, and helping patients and families to recover or develop sustaining spiritual or philosophical beliefs or actions can buffer the destabilizing and disintegratory effects of the murder. Therapeutic measures may involve exploring the family members' concepts of life and death, as well as encouraging both private meditative and socially committed activities, such as support groups or constructive political or religious activities (Rynearson, 1996). Many Oklahoma City and World Trade Center survivors, including a few of my patients, have started or joined various charitable or social service foundations as a way of memorializing their slain loved ones.

Pictures and other mementos of the deceased can serve as comforting images. In reviewing family picture albums together, the therapist and survivors can try to summon nurturant, positive imagery that may counterbalance the grotesque recollections of the terroristic homicide. Similar memorializing activities include writing about the deceased or creating a scrapbook. Again, this should not become an unhealthy, all-consuming preoccupation, although in the early stages, some leeway should be afforded to allow the memorializers to "get it out of their system." If possible, family members should collaborate in these personalized memorial rituals and projects as a way of forging a renewed sense of meaning and commitment within the family structure (Rynearson, 1996; Spungen, 1998).

Children should be included in these memorialization activities, albeit at an age-appropriate level. They should be part of both the planning process and presentation of memorial services. Children may write poems or stories, draw pictures, create a scrapbook, plant a tree, or create some other memorial. This can be done either as an individual or family project, or both (Sprang & McNeil, 1995; Spungen, 1998).

Once the psychological coping mechanisms of self-calming and distancing from the homicide event have been strengthened, therapy can begin to confront the traumatic imagery more directly. Less verbally expressive family members, especially children, may be asked to draw their perception of the scene of death in order to provide a non-verbal expression of reenactment that can be directly viewed by and shared with the therapist. Family members can then be encouraged to place themselves within the drawn enactment to allow the process of abstract distancing to take the place of mute avoidance. In these exercises, family members often portray themselves as defending, holding, or rescuing the deceased (Rynearson, 1996).

Finally, the sad truth is that some members of a given family may be more willing and/or able than others to leave the grim past behind and move on; some family members just can't let go. In such cases, family separations may be necessary for some members to escape the stifling emotional turmoil of unhealthy family enmeshment and misery in order to make a fresh start and find their own way back into the world of the living (Barnes, 1998; Miller, 1998b, 1999b, 2008c).

In this regard, clinicians need to remind themselves of the limited therapeutic goals in most cases of homicidal bereavement, including terrorism. Don't expect families to totally "work through" the trauma of a murdered loved one, and don't tell them they'll "get over it" – they won't. The bereaved family will always maintain an attachment to the slain loved one, especially a child, and it would be a mistaken therapeutic objective to insist on complete decathexis. Instead, it is hoped that the bereaved family will learn to maintain involvement with others, while always retaining an internalized relationship with the slain child's, parent's, sibling's, or spouse's image (Miller, 1998b, 1999a; Rynearson, 1996).

The therapist's task, then, is first, to keep the family members from destroying themselves and one another, and second, to restore some semblance of meaning and purpose in their lives that will allow them to remain productive, functioning members of their community. Often, the crucial first step is to get the family members to believe in one simple fact: "You can live through this." In the best of cases, family members may "grow" from such a horrendous experience as the brutal murder of a loved one, but such cases are the blessed exceptions, not the rule, and most families do well just to survive (Miller, 1998b, 1998c, 1999a, 2008c).

Psychotherapeutic Strategies with Children

If family functioning of adult caretakers is impaired, it is likely that children also will be directly and indirectly traumatized (Miller, 1998c, 1999a, 1999b, 2008c). Often, during and following any kind of disaster, parents, teachers, and community leaders notice how eerily quiet the children are and may be thankful, given the adults' own level of distress, that these children seem to be "taking it so well." However, the unnatural inhibition of children's normal spontaneous activity is usually an indicator of a great deal of underlying turmoil. In other cases, children's distress is more evident, showing clinging, crying, and behavioral regression. In addition, the distress of parents, teachers, and other adults usually spreads quickly to children and increases their fear and disorientation.

The stresses on families, particularly the persistent postdisaster problems of lost income, employment, and housing, result in increased feelings of powerlessness and loss of control, which often lead to increased rates of child and spouse abuse. This is why the provision of information, education, and basic services, although not usually thought of as "therapy" per se, is often an indispensable part of improving the mental health of families after any kind of disaster (Ursano et al, 1995b).

Accordingly, interventions with parents and their families should be directed at assisting the child to regain a sense of safety, validating the child's emotional reactions rather than discouraging or minimizing them, strengthening the sense of security and control in the family environment, anticipating and providing additional support during times of heightened distress (such as anniversaries of the event), and minimizing secondary stresses (Johnson, 1989; Pitcher & Poland, 1992; Ursano et al, 1995b).

Young children may ask the same questions repeatedly until they are able to process and understand all the information. Therapists should advise adult caregivers to be patient and respond to the child's questions, in an age-appropriate manner, as many times as necessary (Spungen, 1998). Contrary to the impression of many adults, children often have a more sophisticated notion of the concept of death than is first appreciated (Yalom, 1980). Since children of the same age may differ widely in terms of their psychodevelopmental maturity, adults should take their cue from the cognitive level and personality of the individual child in providing information and explanations.

Due to a combination of developmental factors and response to traumatization, children may have particular difficulty in verbalizing their reactions to the traumatic bereavement. Individual group therapies with children, therefore, necessarily need to be more participatory and experiential. Worksheets, games, play therapies, skits, puppet shows, music, storytelling, and art modalities should be integrated into the therapeutic program for traumatized children (Beckmann, 1990; James, 1989; Spungen, 1998).

Children should be included in any memorialization activities, albeit at an age-appropriate level. They should be part of both the planning process and presentation of memorial services. Children may write poems or stories, draw pictures, create a scrapbook, plant a tree, or create some other memorial. This can be done either as an individual or family project, or both (Sprang & McNeil, 1995; Spungen, 1998).

Several, large-group, mostly school-based, postdisaster interventions for children and adolescents have been reviewed by Abueg et al (1994); these may productively be applied to cases of mass terroristic trauma. Stewart et al (1992) describe an intervention following a hurricane that used both large and small groups in a single 2-hour session, designed to lower levels of disaster-related distress and enhance social support among students. The intervention incorporated physical activity and group-enhancing activities. The didactic portion helped explain to students the relationship between unmet needs and stress and also attempted to normalize stress-related symptoms.

Weinberg (1990) describes a large-group intervention program to help adolescents deal with school traumas such as accidents or suicides in which grief and loss issues predominate. Students meet in a school assembly, which fosters a familiar, supportive atmosphere. Healthy grief is described and emotional expression is encouraged. Students who appear especially upset, are identified as particularly at risk, or attempt to leave the group meeting are met either individually or in small-group sessions.

A school-based approach explicitly modeled on the critical incident stress debriefing (CISD) protocol (Mitchell & Everly, 1996) is described by Johnson (1989). This adaptation for children and adolescents involves a postcrisis group debriefing that incorporates an *introductory phase,* in which the goals and purposes of the group are spelled out; a *fact phase,* in which the children each describe what happened to them in the disaster; a *feeling phase,* in which the children may express the emotions and reactions they have

had to the crisis; a *teaching phase,* in which the group leader educates the children as to the nature of stress symptoms and the course of recovery; and a *closure phase,* in which the children are encouraged to develop some plan of action to facilitate improved coping in the future.

Johnson (1989) emphasizes that the group's sense of security and normal routine needs to be reestablished at the conclusion of the debriefing. Even class debriefings, designed to help students adjust in a familiar setting and structure, can be upsetting. To the extent possible, a sense of continuity should be provided by a return to some semblance of a normal schedule of activities. After the debriefing process has fulfilled its therapeutic purpose, the leader lets the students know that the time has come to resume a normal routine.

Another CISD model of intervention for use in the schools is presented by Ritter (1994). This approach encourages schools to act proactively to establish a working relationship with CISD teams in the local community, instead of waiting for a disaster to occur and then trying to play catch-up by throwing something together. Schools have utilized CISD team resources effectively in connection with student suicides, homicides, hostage incidents, natural and manmade disasters, motor vehicle deaths, and sports event deaths. Protocols for the effective use of CISD-type resources require flexibility, cooperation, and coordination of local and regional debriefing resources. They also may require additional expenditures to coordinate different groups and individuals and bring them all up to speed on such topics as trauma, death and dying, grief, the CISD process, and other therapeutic and psychosocial interventions (Ritter, 1994).

Harris (1991) describes a family-based crisis intervention model designed for use within one week following a disaster. Initial sessions are designed to elicit open expression of feelings and the development of rapport with the therapist. Cognitive restructuring is used to when appropriate to correct distortions and irrational thinking on the part of the family members. Next, issues requiring immediate attention are identified. Communication skills are taught and social-support is then encouraged to take concrete, positive problem-solving action to create a sense of movement and progress toward goals.

Vernberg & Vogel (1993) describe a disaster intervention protocol that divides intervention strategies into four phases. The *predisaster phase* primarily involves incorporating mental health services into local or regional disaster plans. Interventions in the immediate *impact phase* of the disaster include ensuring support for help providers at affected sites, gathering and disseminating accurate information, and making initial contact with children who have been affected by the traumatic disaster event. *Short-term adaptation phase* interventions include classroom strategies that allow emotional expression and cognitive processing of the traumatic events through group discussions, drawing, play therapy, and other appropriate outlets. Interventions during this phase also include family approaches such as providing information and education, absenteeism outreach, and brief family therapy. It also includes individual modalities, such as one-on-one debriefing, individual psychotherapy, and pharmacological approaches, if appropriate. Finally, *long-term adjustment phase* interventions include more extensive individual and family psychotherapy, as well as the use of communal rituals and memorials.

Cutting across the interventions in this category is an emphasis on providing the maximum degree of adaptive recovery and normalization with a minimum of therapeutic intrusion and overload, while at the same time identifying those at-risk children and families at each stage who may require more intensive and extensive treatment and support (Miller, 1999a, 2002b, 2003b).

Helping The Helpers

Not to be neglected are the psychological needs of those first responders, emergency service workers, and clinicians – police officers, firefighters, paramedics, rescue and recovery workers, mental health professionals – who are called to the frequently grim and grueling task of helping victims of catastrophic terror. This topic has been dealt with in detail elsewhere (Miller, 1995a, 1998a, 1998c, 1999e, 1999f, 2000a, 2000b, 2002c, 2006d, 2007c, 2008c). For the present purposes, it should be noted that proper attention to one's own mental status is a prerequisite not only for avoiding vicarious traumatization and burnout, but also for being able to provide competent and effective aid where needed. Clinicians must sensitive to their own stress levels, as well. Being a supportive crisis counselor or psychotherapist can set you up for vicarious traumatization, even if you were not involved in the original incident. Know when to get help for yourself (Ackerly et al., 1988; Cerney, 1995; Figley, 1995; Miller, 1993a, 1998a, 1998c, 2000b, 2008b, 2008c; Pearlman & MacIan, 1995; Saakvitne & Pearlman, 1996; Talbot et al., 1995).

Community And Societal Responses To Terroristic Trauma

By definition, mass-casualty terroristic disasters are community events, and there is much that community leaders can do to offer support and increase therapeutic and social morale. Interventions require building relationships within the community through police, mental health professionals, school teachers and administrators, business managers and executives, and spiritual and religious groups.

Community Responses

Symbols are an important part of the recovery process. Commendations and awards to rescue workers and others who have distinguished themselves are important components of the community recovery process. Memorials to the victims of the terroristic disaster are part of the healing process and should be encouraged. Leaders are powerful symbols in and of themselves. Local and regional leaders should be encouraged to set an example of expressing their own grief in a healthy and mature way, in order to lead the community in recognizing the appropriateness of constructive mourning (Ursano et al, 1995b).

More broadly, the recognition of a disaster by outside authorities, such as the governor or president, is also an important part of recovery. When a distressed community is acknowledged, its members feel less alone and more in communion with the world at large. This support – as in the famous "We are all New Yorkers now" statement shortly after 9/11 – is a necessary component of the healing process. Such outside support networks offer the hope of additional resources as well as emotional support. Interventions require building relationships within the community through police, mental health professionals, schools, teachers, and administrators, as well as spiritual and religious groups. The mental health consultant, who may at first feel like an outsider, fills some of these same functions, serving partly as an emissary of the larger world's concern, providing hope for the return to normal or semi-normalized life, and allowing a brief respite from the ongoing issues of disaster stress and recovery (Kratcoski, 2001; Strebnicki, 2001; Ursano et al, 1995b).

Returning to Work After Terroristic Trauma

One of the defining characteristics of both Oklahoma City and the World Trade Center attacks is that the victims were struck while they were at their jobs. Even if we don't particularly like our bosses or schedules, for most of us, the workplace is supposed to be a comfortable, or at least predictable, second community, aside from our families. When trauma occurs at work – either from a homicidal shooter or a terrorist attack – the traumatic effect may resonate throughout this "second family."

The topic of workplace violence has been covered in detail elsewhere (Miller, 1998c, 1999d, 2002a, 2007b, 2008d). For the present, Strebnicki (2001) offers some useful suggestions and strategies for organizations and employers to support terrorist victims and survivors, which resonate with recommendations for recovering from any workplace violence episode.

First, recognize that, following such a critical incident, most employees will have a difficult time focusing on job performance. Second, allow the survivors time to transition back to the day-to-day work routine, providing for adequate pacing and dosing of the workload until they hit their productive stride. Third, allow employees to ventilate and discuss fears and concerns about the return-to-work environment, perhaps offering regular meetings to deal with such concerns. Fourth, emphasize the survivors' strengths and validate their efforts at remaining productive despite the ordeal they have endured and will continue to struggle to overcome.

In general, be sensitive to the emotional needs of survivors during work. As a manager or company executive, it is not your job to be a professional therapist, but you can always be a good listener and source of support – after all, you probably know this employee better than an outside clinician. If professional help is required, be familiar with and promote educational and wellness resources for survivors. Be aware of employees who may be at particular risk for psychological distress, and provide coverage and time off to address legitimate mental health concerns.

National and International Responses

Oklahoma City was an Oklahoman crisis, but it was also an American tragedy. September 11 was an attack on New York and Washington, but it was also a national crisis and an international trauma with worldwide consequences for the mental health and stability of the whole planet's inhabitants. The 2004 Madrid train bombings and 2005 London bus bombings were Spanish and British catastrophes, but their effects likewise reverberated around the civilized world. We have come to understand that in cases of mass terrorism, the mental health response may well have to involve international

coordination and cooperation (Kratcoski et al, 2001).

According to the United Nations Commission on Crime Prevention and Criminal Justice, a comprehensive victim services program must include immediate crisis intervention; short- and longer-term counseling; victim advocacy; protection and support during the investigation and prosecution of terroristic and other violent crimes; adequate training for allied professionals on victim issues, violence prevention and intervention strategies; and public education and awareness. An immediate clinically-grounded community based response to victimization is needed, which involves developing a mental health plan for disaster and terrorism victims to provide immediate and long-term services. A mechanism should be established for providing readily available crisis intervention services whenever and wherever they are needed in terrorism incidents (Kratcoski et al, 2001).

Finally, from the perspective of justice, laws must be enacted to specifically set penalties for terroristic crimes, and to provide for the swift apprehension, extradition, prosecution, and sentencing of the offenders and their supporting and sponsoring parties. This process continues to evolve.

CONCLUSIONS

We have entered a perilous age. Not since the days of the Cuban missile crisis and the Mutually Assured Destruction doctrines of the Cold War have Americans felt so personally threatened. Skilled, trained, and experienced mental health clinicians will be vital resources in combating the psychological disruption of our society in the wake of future terrorist attacks. The intended destructive effect of terrorism is, after all, primarily a psychological one, and from individual therapy to mass interventions involving tens of thousands, the potential contribution of psychology to mitigating the worst effects of this assault on our national psyche can be immeasurable.

REFERENCES

Abueg, F.R., Drescher, K.D. & Kubany, E.S. (1994). Natural disasters. In F.M. Dattilio & A. Freeman (Eds.), *Cognitive-behavioral strategies in crisis intervention* (pp. 238-257). New York: Guilford.

Ackerly, G.D., Burnell, J., Holder, D.C. & Kurdek, L.A. (1988). Burnout among licensed psychologist. *Professional Psychology: Research and Practice, 19,* 624-631.

Alarcon, R.D. (1999). The cascade model: An alternative to comorbidity in the pathogenesis of posttraumatic stress disorder. *Psychiatry, 62,* 114-124.

Aldwin, C.M. (1994). *Stress, coping, and development.* New York: Guilford.

American Psychological Association (1980). *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed.). Washington DC: American Psychological Association.

American Psychological Association (1994). *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.). Washington DC: American Psychological Association.

American Psychological Association (2000). *Diagnostic and Statistical Manual of Mental Disorders* (4th ed-text revision). Washington DC: American Psychological Association.

Bard, M. & Sangrey, D. (1986). *The crime victim's book.* New York: Brunner/Mazel.

Barnes, M.F. (1998). Understanding the secondary traumatic stress of parents. In C.R. Figley (Ed.), *Burnout in families: The systematic costs of caring* (pp.75-89). Boca Raton: CRC Press.

Baum, A. (1987). Toxins, technology, and natural disasters. In G.R. VandenBos & B.K. Bryant (Eds.), *Cataclysms, crises, and catastrophes* (pp. 5-53). Washington DC: American Psychological Association.

Baum, A. & Fleming, I. (1993). Implications of psychological research on stress and technological accidents. *American Psychologist, 48,* 665-672.

Baum, A., Fleming, R. & Singer, J.E. (1983). Coping with victimization by technical disaster. *Journal of Social Issues, 39,* 117-138.

Beckmann, R. (1990). *Children who grieve: A manual for conducting support groups.* Holmes Beach: Learning Publications.

Bolz, F., Dudonis, K.J. & Schultz, D.P. (1996). *The counter-terrorism handbook: Tactics, procedures, and techniques.* Boca Raton: CRC Press.

Boss, P.G. (2002). Ambiguous loss: Working with families of the missing.*Family Process, 41,* 14-17.

Bowman, M.L. (1997). *Individual differences in posttraumatic response: Problems with the stress-adversity connection.* Mahwah: Erlbaum.

Bowman, M.L. (1999). Individual differences in post-traumatic distress: Problems with the DSM-IV model. *Canadian Journal of Psychiatry, 44,* 21-33.

Burleigh, M. (2009). *Blood and rage: A cultural history of terrorism.* New York: Harper/HarperCollins.

Butler, P. (2002). Terrorism and utilitarianism: Lessons from, and for, criminal law. *Journal of Criminal Law and Criminology, 93,* 1-22.

Carson, L. & MacLeod, M.D. (1997). Explanations about crime and psychological distress in ethnic minority and white victims of crime: A qualitative explanation. *Journal of Community and Applied Social Psychology, 7,* 361-375.

Cerney, M.S. (1995). Treating the "heroic treaters." In C.R. Figley (Ed.), *Compassion fatigue: Coping with secondary traumatic stress disorder in those who treat the traumatized* (pp. 131-149). New York: Brunner/Mazel.

Clark, S. (1988). The violated victim: Prehospital psychological care for the crime victim. *Journal of Emergency Medical Services,* March, pp. 48-51.

Cohen, R., Culp, C. & Genser, S. (1987). *Human problems in major disasters: A training curriculum for emergency medical personnel.* Washington DC: USGPO.

Cromartie, R.S. & Duma, R.J. (2009). *High-tech terror: Recognition, management, and prevention of biological, chemical, and nuclear injuries secondary to acts of terrorism.* Springfield, IL: Charles C Thomas.

Davis, J.A. (1998/99). Providing critical incident stress debriefing (CISD) to individuals and communities in situational crisis. *Trauma Response, 5,* 19-21.

Difede, J., Apfeldorf, W.J., Cloitre, M., Spielman, L.A. & Perry, S.W. (1997). Acute psychiatric responses to the explosion at the World Trade Center: A case series. *Journal of Nervous and Mental Disease, 186,* 519-522.

Dyregrov, A. (1989). Caring for helpers in disaster situations: Psychological debriefing. *Disaster Management, 2,* 25-30.

Everly, G.S., Flannery, R.B. & Mitchell, J.T. (1999). Critical incident stress management (CISM): A review of the literature. *Aggression and Violent Behavior, 5,* 23-40.

Figley, C.R. (1995). Compassion fatigue as secondary traumatic stress disorder: An overview. In C.R. Figley (Ed.), *Compassion fatigue: Coping with secondary traumatic stress disorder in those who treat the traumatized* (pp. 1-20). New York: Brunner/Mazel.

Getzel, G.S. & Masters, R. (1984). Serving families who survive homicide victims. *Social Casework: The Journal of Contemporary Social Work, 65,* 138-144.

Green, B.L. (1991). Evaluating the effects of disasters. *Psychological Assessment, 3,* 538-546.

Hanscom, K.L. (2001). Treating survivors of war trauma and torture. *American Psychologist, 56,* 1032-1039.

Harris, C. (1991). A family crisis-intervention model of treatment of post-traumatic stress reaction. *Journal of Traumatic Stress, 4,* 195-207.

Hills, A. (2002). Responding to catastrophic terrorism. *Studies in Conflict & Terrorism, 25,* 245-261.

James, B. (1989). *Treating traumatized children: New insights and creative interventions.* New York: Free Press.

Johnson, K. (1989). *Trauma in the lives of children: Crisis and stress management techniques for counselors and other professionals.* Alameda: Hunter House.

Kalb (2002). How are we doing? *Newsweek,* August 19, p. 53.

Keller, B. (2002). Nuclear nightmare. *New York Times Magazine,* May 26, pp. 22-29, 51, 54-55, 57.

Kinston, W. & Rosser, R. (1974). Disaster: Effects on mental and physical state. *Journal of Psychosomatic Research, 18,* 437-456.

Kratcoski, P.C., Edelbacher, M. & Das, D.K. (2001). Terrorist victimization: Prevention, control, and recovery. *International Review of Victimology, 8,* 257-268.

Lindemann, E. (1944). Symptomatology and management of acute grief. *American Journal of Psychiatry, 101,* 141-148.

Lindy, J.D., Grace, M.C. & Green, B.L. (1981). Survivors: Outreach to a reluctant population. *American Journal of Orthopsychiatry, 51,* 468-478.

Loza, W. (2007). The psychology of extremism and terrorism: A Middle-Eastern perspective. *Aggression and Violent Behavior, 12*, 141-155.

MacLeod, M.D. (1999). Why did it happen to me? Social cognition processes in adjustment and recovery from criminal victimization and illness. *Current Psychology, 18,* 18-31.

McCarroll, J.E., Ursano, R.J. & Fullerton, C.S. (1993). Traumatic responses to the recovery of war dead in Operation Desert Storm. *American Journal of Psychiatry, 150,* 1875-1877.

McCarroll, J.E., Ursano, R.J. & Fullerton, C.S. (1995). Symptoms of PTSD following recovery of war dead: 13-

15 month follow-up. *American Journal of Psychiatry, 152,* 939-941.

McCauley, C. (2007). Psychological issues in understanding terrorism and the response to terrorism. In B. Bongar, L.M. Brown, L.E. Beutler, J.N. Breckenridge & P.G. Zimbardo (Eds.), *Psychology of terrorism* (pp. 13-31). New York: Oxford University Press.

Meek, C.L. (1990). Evaluation and assessment of post-traumatic and other stress-related disorders. In C.L. Meek (Ed.), *Post-traumatic stress disorder: Assessment, differential diagnosis, and forensic evaluation* (pp. 9-61). Sarasota: Professional Resource Exchange.

Merskey, H. (1992). Psychiatric aspects of the neurology of trauma. *Neurologic Clinics, 10,* 895-905.

Miller, H.B., Miller, L., & Bjorklund, D. (2010). Helping military parents cope withparental deployment: Role of attachment theory and recommendations for mentalhealth clinicians and counselors.*International Journal of Emergency MentalHealth, 12*,231-235.

Miller, L. (1984). Neuropsychological concepts of somatoform disorders. *International Journal of Psychiatry in Medicine, 14,* 31-46.

Miller, L. (1993a). Who are the best psychotherapists? Qualities of the effective practitioner. *Psychotherapy in Private Practice, 12*(1), 1-18.

Miller, L. (1993b). Toxic torts: Clinical, neuropsychological, and forensic aspects of chemical and electrical injuries. *Journal of Cognitive Rehabilitation, 11*(1), 6-20.

Miller, L. (1994a). Civilian posttraumatic stress disorder: Clinical syndromes and psychotherapeutic strategies. *Psychotherapy, 31,* 655-664.

Miller, L. (1994b). Biofeedback and behavioral medicine: Treating the symptom, the syndrome, or the person? *Psychotherapy, 31,* 161-169.

Miller, L. (1995a). Tough guys: Psychotherapeutic strategies with law enforcement and emergency services personnel. *Psychotherapy, 32,* 592-600.

Miller, L. (1995b). Toxic trauma and chemical sensitivity: Clinical syndromes and psychotherapeutic strategies. *Psychotherapy, 32,* 648-656.

Miller, L. (1998a). Our own medicine: Traumatized psychotherapists and the stresses of doing therapy. *Psychotherapy, 35,* 137-146.

Miller, L. (1998b). Psychotherapy of crime victims: Treating the aftermath of interpersonal violence. *Psychotherapy, 35,* 336-345.

Miller, L. (1998c). *Shocks to the system: Psychotherapy of traumatic disability syndromes.* New York: Norton.

Miller, L. (1999a). Treating posttraumatic stress disorder in children and families: Basic principles and clinical applications. *American Journal of Family Therapy, 27,* 21-34.

Miller, L. (1999b). Posttraumatic stress disorder in child victims of violent crime: Making the case for psychological injury. *Victim Advocate, 1*(1)*,* 6-10.

Miller, L. (1999c). Posttraumatic stress disorder in elderly victims of violent crime: Making the case for psychological injury. *Victim Advocate, 1*(2), 7-10.

Miller, L. (1999d). Workplace violence: Prevention, response, and recovery. *Psychotherapy, 36,* 160-169.

Miller, L. (1999e). Critical incident stress debriefing: Clinical applications and new directions. *International Journal of Emergency Mental Health, 1,* 253-265.

Miller, L. (1999f). Tough guys: Psychotherapeutic strategies with law enforcement and emergency services personnel. In L. Territo & J.D. Sewell (Eds.), *Stress management in law enforcement* (pp. 317-332). Durham: Carolina Academic Press.

Miller, L. (2000a). Law enforcement traumatic stress: Clinical syndromes and intervention strategies. *Trauma Response, 6*(1), 15-20.

Miller, L. (2000b). Traumatized psychotherapists. In F.M. Dattilio & A. Freeman (Eds.), *Cognitive-behavioral strategies in crisis intervention* (2nd ed., pp. 429-445). New York: Guilford.

Miller, L. (2001). Crime victim trauma and psychological injury: Clinical and forensic guidelines. In E. Pierson (Ed.), *2001 Wiley expert witness update: New developments in personal injury litigation* (pp. 171-205). New York: Aspen.

Miller, L. (2002a). How safe is your job? The threat of workplace violence. *USA Today Magazine,* March, pp. 52-54.

Miller, L. (2002b). Posttraumatic stress disorder in school violence: Risk management lessons from the workplace. *Neurolaw Letter, 11,* 33, 36-40.

Miller, L. (2002c). Law enforcement responses to youth violence: Psychological dynamics and intervention strategies.

In R.S.S. Moser & C.E. Franz (Ed.), *Shocking violence II: Violent disaster, war, and terrorism affecting our youth* (pp. 165-195). New York: Charles C. Thomas.

Miller, L. (2002d). What is the true spectrum of functional disorders in rehabilitation? In N.D. Zasler & M.F. Martelli (Eds.), *Functional disorders* (1-20). Philadelphia: Hanley & Belfus.

Miller, L. (2003a). Psychological interventions for terroristic trauma: Symptoms, syndromes, and treatment strategies. *Psychotherapy, 39,* 283-296.

Miller, L. (2003b). Family therapy of terroristic trauma: Psychological syndromes and treatment strategies. *American Journal of Family Therapy, 31,* 257-280.

Miller, L. (2004c). Psychotherapeutic interventions for survivors of terrorism. *American Journal of Psychotherapy, 58,* 1-16.

Miller, L. (2005). Psychotherapy for terrorism survivors: New directions in evaluation and treatment. *Directions in Clinical and Counseling Psychology, 17,* 59-74.

Miller, L. (2006a). The terrorist mind: I. A psychological and political analysis. *International Journal of Offender Rehabilitation and Comparative Criminology, 50,* 121-138.

Miller, L. (2006b). The terrorist mind: II. Typologies, psychopathologies, and practical guidelines for investigation. *International Journal of Offender Rehabilitation and Comparative Criminology, 50,* 255-268.

Miller, L. (2006c). Critical incident stress debriefing for law enforcement: Practical models and special applications. *International Journal of Emergency Mental Health, 8,* 189-201.

Miller, L. (2006d). *Practical police psychology: Stress management and crisis intervention for law enforcement.* Springfield, IL: Charles C Thomas.

Miller, L. (2007a). School violence: Effective response protocols for maximum safety and minimum liability. *International Journal of Emergency Mental Health, 9,* 105-110.

Miller, L. (2007b). Workplace violence: Practical policies and strategies for prevention, response, and recovery. *International Journal of Emergency Mental Health, 9,* 259-279.

Miller, L. (2007c). Crisis intervention strategies for treating law enforcement and mental health professionals. In F.M. Dattilio & A. Freeman (Eds.), *Cognitive-behavioral strategies in crisis intervention* (3rd ed., pp. 93-121). New York: Guilford.

Miller, L. (2007d). Traumatic stress disorders. In F.M. Dattilio & A. Freeman (Eds.), *Cognitive-behavioral strategies in crisis intervention* (3rd ed., pp. 494-527). New York: Guilford.

Miller, L. (2008a). Death notification for families of murder victims: Healing dimensions of a complex process. *Omega: Journal of Death and Dying, 57,* 367-380.

Miller, L. (2008b). The practice of crisis intervention. In J. Krzyzowski (Ed.), *Emergency psychiatry: Concepts and principles* (pp. 69-90). Warsaw: Medyk.

Miller, L. (2008c). *Counseling crime victims: Practical strategies for mental health professionals.* New York: Springer.

Miller, L. (2008d). *From difficult to disturbed: Understanding and managing dysfunctional employees.* New York: Amacom.

Miller, L. (2009a). Family survivors of homicide: I. Symptoms, syndromes, and reaction patterns. *American Journal of Family Therapy, 37,* 67-79.

Miller, L. (2009b). Family survivors of homicide: II. Practical therapeutic strategies. *American Journal of Family Therapy, 37,* 85-98.

Miller, L. (2010). On-scene crisis intervention: Psychological guidelines and communication strategies. *International Journal of Emergency Mental Health, 12,* 11-19.

Miller, L. (in press). *Criminal psychology: Nature, nurture, culture.* Springfield, IL: Charles C Thomas.

Miller, L. & Schlesinger, L.B. (2000). Survivors, families, and co-victims of serial offenders. In L.B. Schlesinger (Ed.), *Serial offenders: Current thought, recent findings, unusual syndromes* (pp. 309-334). Boca Raton: CRC Press.

Mitchell, J.T. & Everly, G.S. (1996). *Critical incident stress debriefing: Operations manual.* (rev. ed.). Ellicott City: Chevron.

Modlin, H.C. (1983). Traumatic neurosis and other injuries. *Psychiatric Clinics of North America, 6,* 661-682.

Modlin, H.C. (1990). Post-traumatic stress disorder: Differential diagnosis. In C.L. Meek (Ed.), *Post-traumatic stress disorder: Assessment, differential diagnosis, and forensic evaluation* (pp. 63-89). Sarasota: Professional Resource Exchange.

North, C.S., Tivis, L., McMillan, J.C., Pfefferbaum, B. Spitznagel, E.L., Cox, J., Nixon, S., Bunch, K.P. & Smith, E.M. (2002). Psychiatric disorders in rescue workers after the Oklahoma City bombing. *American Journal of Psychiatry, 159,* 857-859.

Parkes, C.M. (1975). Determinants of outcome following bereavements. *Omega: Journal of Death and Dying, 6,* 303-323.

Parkes, C.M. & Brown, R. (1972). Health after bereavement: A controlled study of young Boston widows and widowers. *Psychosomatic Medicine, 34,* 449-461.

Pearlman, L.A. & MacIan, P.S. (1995). Vicarious traumatization: An empirical study of the effects of trauma work on trauma therapists. *Professional Psychology: Research and Practice, 26,* 558-565.

Pitcher, G.D. & Poland, S. (1992). *Crisis intervention in the schools.* New York: Guilford.

Quinn, K.M. (1995). Guidelines for the psychiatric examination of posttraumatic stress disorder in children and adolescents. In R.I. Simon (Ed.), *Posttraumatic stress disorder in litigation: guidelines for forensic assessment* (pp. 85-98). Washington DC: American Psychiatric Press.

Raphael, B. (1986). *When disaster strikes: How individuals and communities cope with catastrophe.* New York: Basic Books.

Reese, J.T. (1991). Justifications for mandating critical incident aftercare. In J.T. Reese, J.M. Horn & C. Dunning (Eds.), *Critical incidents in policing* (rev. ed., pp. 213-220). Washington DC: USGPO.

Ressler, R.K., Burgess, A.W. & Douglas, J.E. (1988). *Sexual homicide: Patterns and motives.* New York: Free Press.

Rinear, E.E. (1984). *Parental response patterns to the death of a child by homicide.* Unpublished Doctoral Dissertation, Temple University.

Ritter, R. (1994). Critical incident stress debriefing teams and schools. In R.G. Stevenson (Ed.), *What will we do? Preparing a school community to cope with crises* (pp. 169-174). Amityville: Baywood.

Romano, J.A. & King, J.M. (2002). Chemical warfare and chemical terrorism: Psychological and performance outcomes. *Military Psychology, 14,* 85-92.

Rynearson, E.K. (1988). The homicide of a child. In F.M. Ochberg (Ed.), *Posttraumatic therapy and victims of violence* (pp. 213-224). New York: Brunner/Mazel.

Rynearson, E.K. (1994). Psychotherapy of bereavement after homicide. *Journal of Psychotherapy Practice and Research, 3,* 341-347.

Rynearson, E.K. (1996). Psychotherapy of bereavement after homicide: Be offensive. *In Session: Psychotherapy in Practice, 2,* 47-57.

Rynearson, E.K. & McCreery, J.M. (1993). Bereavement after homicide: A synergism of trauma and loss. *American Journal of Psychiatry, 150,* 258-261.

Saakvitne, K.W. & Pearlman, L.A. (1996). *Transforming the pain: A workbook on vicarious traumatization.* New York: Norton.

Schlosser, E. (1997). A grief like no other. *Atlantic Monthly,* September, pp. 37-76.

Shorto, R. (2002). A life of crime. *New York Time Magazine,* August 25, pp. 28-31.

Silver, R. & Wortman, C. (1980). Coping with undesirable life events. In J. Garber & M. Seligman (Eds.), *Human helplessness* (pp. 279-340). New York: Academic Press.

Solomon, M.J. & Thompson, J. (1995). Anger and blame in three technological disasters. *Stress Medicine, 11,* 199-206.

Sprang, G. & McNeil, J. (1995). *The many faces of bereavement: The nature and treatment of natural, traumatic, and stigmatized grief.* New York: Brunner/Mazel.

Spungen, D. (1998). *Homicide: The hidden victims. A guide for professionals.* Thousand Oaks: Sage.

Stebnicki, M.A. (2001). The psychosocial impact on survivors of extraordinary, stressful, and traumatic events: Principles and practices in critical incident response for rehabilitation counselors. *Directions in Rehabilitation Counseling, 12,* 57-72.

Stewart, J.S., Hardin, S.B., Weinrich, S. McGeorge, S., Lopez, J. & Pesut, D. (1992). Group protocol to mitigate disaster stress and enhance social support adolescents exposed to Hurricane Hugo. *Issues in Mental Health Nursing, 13,* 105-109.

Stokes, J.W. & Bandaret, L.E. (1997). Psychological aspects of chemical defense and warfare. *Military Psychology, 9,* 395-415.

Strentz, T. (1987). A hostage psychological survival guide. *FBI Law Enforcement Bulletin, 56,* 1-8.

Talbot, A., Dutton, M. & Dunn, P. (1995). Debriefing the debriefers: An intervention strategy to assist psychologists after a crisis. In G.S. Everly & J.M. Lating (Eds.), *Psychotraumatology: Key papers and core concepts in post-traumatic stress* (pp. 281-298). New York: Plenum.

Trimble, M.R. (1981). *Post-traumatic Neurosis: From railway spine to whiplash.* New York: Wiley.

Underwood, A. & Liu, M. (1996). "Why are you doing this?" *Newsweek,* August 12, pp. 46-47.

Ursano, R.J., Fullerton, C.S., Bhartiya, V. & Kao, T.C. (1995a). Longitudinal assessment of posttraumatic stress disorder and depression after exposure to traumatic death. *Journal of Nervous and Mental Disease, 183,* 36-42.

Ursano, R.J., Fullerton, C.S. & Norwood, A.E. (1995b). Psychiatric dimensions of disaster: Patient care, community consultation, and preventive medicine. *Harvard Review of Psychiatry, 3,* 196-209.

Ursano, R.J., Kao, T.C. & Fullerton, C.S. (1992). Posttraumatic stress disorder and meaning: Structuring human chaos. *Journal of Nervous and Mental Disease, 180,* 756-759.

Ursano, R.J. & McCarroll, J.E. (1990). The nature of the traumatic stressor: Handling dead bodies. *Journal of Nervous and Mental Disease, 178,* 396-398.

Vernberg, E.M. & Vogel, J.M. (1993). Interventions with children after disasters. *Journal of Clinical Child Psychology, 22,* 485-498.

Weinberg, R.B. (1990). Serving large numbers of adolescent victim-survivors: Group interventions following trauma at school. *Professional Psychology: Research and Practice, 21,* 271-278.

Weiner, H. (1992). *Perturbing the organism: The biology of stressful experience.* Chicago: University of Chicago Press.

Wilson, J.P. (1994). The historical evolution of PTSD diagnostic criteria: From Freud to the DSM-IV. *Journal of Traumatic Stress, 7,* 681-698.

Yalom, I.D. (1980). *Existential psychotherapy.* New York: Basic Books.

Young, M.A. (1988). Support services for victims. In F.M. Ochberg (Ed.), *Posttraumatic therapy and victims of violence* (pp. 330-351). New York: Brunner/Mazel.

Young, M.A. (1994). *Responding to communities in crisis: The training manual of the crisis response team.* Washington DC: National Organization for Victim Assistance.

International Journal of Emergency Mental Health, Vol. 13, No. 2, pp. 121-125 © 2011 Chevron Publishing ISSN 1522-4821

Collateral Damage in Disaster Workers

Jeffrey T. Mitchell
Emergency Health Services Department
University of Maryland Baltimore County

Abstract: *Disaster workers are not immune to the negative personal and professional effects of their services at a disaster. For the purposes of this article, the intra and interpersonal disturbances that arise from disaster work are called "collateral damage." The harmful effects may range from, among other reactions, feelings of disappointment, confusion, resentment, anger, and lack of appreciation to the more serious reactions such as anxiety attacks, severe social withdrawal, substance abuse, and Post Traumatic Stress Disorder. This article reviews some of the causative factors of personal distress and disruptions to teamwork in disaster relief operations. It suggests a variety of practical methods to reduce the potential of collateral damage among disaster response personnel. [International Journal of Emergency Mental Health, 2011, 13(2), pp. 121-125].*

Key words: *crisis, crisis intervention, crisis management, crisis support, Critical Incident Stress Management, CISM, disaster, disaster management, disaster relief, disaster workers, emergency services personnel, Federal Emergency Management Agency, psychological risks, social risks.*

INTRODUCTION

Most natural and human/technological disasters produce overwhelming disruptions to the social, familial, political, economic, and physical structures of the impacted communities. Disasters require an immediate, coordinated, complex, flexible, multi-jurisdictional, and multi-organizational response under conditions that are often demanding, chaotic, and potentially dangerous to the responders. Hidden psychological and social risks for disaster workers are plentiful and these may distract them during disaster relief operations or interfere with readjustment to ordinary life in the aftermath of the disaster.

There are expectations in many communities that all disaster workers are well trained, well organized, and appropriately managed by sophisticated and experienced disaster specialists. Indeed, that is true of many disaster response personnel, especially those who work within the Federal Emergency Management Agency and within state and local emergency management agencies. The reality is, however, that a disaster response is typically made up of a wide array of professional and volunteer organizations with varying levels of disaster expertise and experience. Quite often, the people providing disaster response leadership have limited experience in general management and even less experi-

Jeffrey T. Mitchell, Ph.D. is a Clinical Professor of Emergency Health Services, at the University of Maryland and President Emeritus of the International Critical Incident Stress Foundation. He is an adjunct faculty member with the Federal Emergency Management Agency. Additionally, he is an Expert Consultant to the UN Department of Safety and Security Working Group on Stress. Correspondence regarding this article should be directed to jmitch@umbc.edu

ence in the management of the complexities of a large scale incident. Some lack the "people skills" that are so essential for effective leadership under extraordinary circumstances.

Perhaps to bolster their own feelings of personal well-being in the confusion and disorder associated with a disaster, many people cling to the flawed belief that disaster response personnel are so physically and mentally prepared to withstand the rigors of disaster work that they are immune to harmful personal effects (American Psychiatric Association, 1964). In reality, disaster workers are vulnerable human beings who respond to the call to work during a disaster incident while bearing many of the same frustrations, concerns, anxieties, and life issues as the ordinary people they serve in their disaster work. They, like everyone else caught up in a demanding and overpowering situation, become fatigued, overwhelmed, and emotionally battered by the enormity of the disaster (Artiss, 1963). Their feelings get hurt when they are disregarded, treated unfairly, or unappreciated by their supervisors. Previously positive working relationships, teamwork, and even friendships may be temporarily or permanently impaired or disabled. Even crisis intervention specialists, such as members of Critical Incident Stress Management (CISM) teams, may experience feelings of neglect, resentment, frustration, competition, and jealously. The negative effects associated with disaster work can have serious personal and professional manifestations. In some cases, crisis support personnel have either reduced their activity on crisis intervention teams or have withdrawn from those teams entirely. In other words, crisis management specialists may sustain substantial collateral damage as a result of their participation in disaster relief services.

What Disaster and Trauma Experiences Indicate

Both the traumatic stress and disaster response literature contain numerous articles that describe the short- and long-term negative effects of helping others in the aftermath of a disaster. Both bodies of literature also suggest that there are a variety of supportive interventions that reduce distress and restore people to adaptive functions. Forstenzer (1980) and, later, Mitchell (1982) discussed the psychological wounds encountered by aircraft rescue personnel. Dyregrov (1989) points out that those who help out in disasters may require care from others. Myers and Wee (2005) suggest that as many as 50% of disaster workers may experience significant distress after working at a disastrous event. Jenkins (1996) presented evidence that emergency medical personnel were seriously stressed by their exposure to a shooting disaster in Texas. She also demonstrated that structured small group support was quite helpful in restoring emergency personnel to normal functions. The fact that emergency services personnel experience a high degree of stress in disaster work prompted the US Department of Health and Human Services and the Centers for Disease Control to publish at least three pamphlets to guide emergency personnel in preventing and managing stress (US Department of Health and Human Services, undated; Centers for Disease Control, 2002).

In a series of studies, Flannery and his colleagues (Flannery, Anderson, Marks, & Uzoma, 2000) identified strong stress reactions among hospital employees who were exposed to violence and other traumatic circumstances. He developed a highly successful intervention program to assist distressed employees (Flannery, 2001). The Western Management Consultants firm in Edmonton, Alberta, Canada found, in an extensive study, that health care providers in northern Canada who experienced small and large traumatic events encountered significant levels of distress. They experienced relief from stress symptoms while participating in a structured support program (1996).

Boscarino (2005) worked with employees who were exposed to the World Trade Center attacks on September 11, 2001. High levels of stress were indicated in the employees, but most experienced a significant reduction in stress symptoms when employer-sponsored support programs were introduced to the employees. There are many lessons learned from the support services that have been offered to the victims of the disaster, but which also have application to disaster workers.

Examples of Collateral Damage Among Disaster Workers

There are numerous examples of collateral damage among disaster response personnel. Care is taken here to present only broad, general examples to avoid focusing attention on any individual or on specific organizations.

In the first example, a young woman volunteer disaster relief worker accepted an assignment to a major disaster just a few days after the death and burial of her mother. She felt overwhelmed with grief, but thought helping others would assist her in managing her own grief. On the second day of work in the disaster, she was asked to drive to a disaster

relief center about 15 miles from the main relief center to assist the staff in that facility. She became hopelessly lost in the unfamiliar territory, abandoned the car she had been provided, and was found several hours later sitting on the front steps of a partially destroyed home. She was sobbing uncontrollably, showed signs of mental confusion, and was uncertain of the circumstances that caused her to abandon the vehicle she had been assigned. When she was found, she was completely uncertain as to what support she needed from others to help her through the crisis. She was confused as to what she needed to do or where she had left the vehicle. She was transported back to the main relief center and evaluated by a mental health professional. She was immediately released from disaster duties and was returned to her home the next day. Later she sought out psychotherapy to help her recover from the loss of her mother as well as her intense reactions to disaster work.

The second example involves a man who initially showed great dedication and proficiency in his work in a large-scale disaster. He worked long, productive hours and demonstrated great skill in managing his assignments. Supervisors began to select him for choice assignments that brought him to the attention of the media. Furthermore, they openly praised him before his colleagues who began to resent him because of the attention he received. Tensions arose between the individual and his colleagues. Cooperation among team members deteriorated. Without the support of his fellow workers, the man subsequently experienced some embarrassing failures. He suspected that his fellow workers set him up for failure. He withdrew from disaster support services and refused any additional assignments. He ultimately changed jobs to avoid future work in disasters. A talented individual was lost to the disaster relief field.

In this final example, a crisis intervention team was engaged in disaster relief services. The work was intense and fast-paced. The circumstances in which the team's personnel were working were constantly changing. There were two key leaders of the team who were long time friends. Communications from the team leaders to their team members were frequently confused and contradictory. Neither one stopped long enough to clarify and correct the communications. Each leader felt his way to deal with things was the best way. Communications between the leaders became difficult. Factions following one leader or the other evolved. Misunderstandings, misinterpretations, and misrepresentation of the facts became frequent. The effectiveness of the team was compromised; the friendship between the team's leaders crumbled and the cohesiveness of the team members was fractured. The team members in both factions expressed a desire to prematurely stop their disaster service and return home. Most returned home feeling angry and resentful. No team meetings were held to resolve the team's internal conflicts. The leaders stopped talking to each other entirely. Within the next several months, the crisis intervention team dissolved.

Causative Factors in Collateral Damage Among Disaster Response Personnel

In the opinion of this author, collateral damage to disaster workers occurs in almost every disaster because of one or more of the following factors.

- Failure of the leadership to screen out disaster workers who may be unqualified or who are physically or emotionally unable to provide disaster relief services.
- The failure of crisis workers, who are suffering through intensely painful personal situations, to remove themselves from disaster work. Their personal problems distract them from effective disaster relief work and complicate relationships with their leaders and with fellow disaster workers.
- Inadequate training and preparation to face the difficulties and uncertainties that are common to disaster work.
- Leaders with wildly unrealistic expectations of what their teammates can accomplish.
- Failure to plan for a strategic response to the situation.
- Failure to communicate effectively with colleagues. Included in this factor would be leaders who do not make sufficient efforts to correct misunderstandings and misinterpretations or to clarify and confirm instructions to one's fellow disaster workers.
- Arbitrary decisions without input from fellow disaster workers.
- Showing favoritism to certain colleagues over other equally qualified personnel.
- Fatigue. Long, pressure-filled hours in unusually demanding or unfamiliar circumstances. Blend fatigue with alterations in food and water and add disturbed

sleep patterns and the individual becomes considerably more vulnerable to collateral damage from the disaster.

- Assigning multiple, simultaneous, and, sometimes, conflicting tasks to disaster workers.
- Too many people to simultaneously supervise (greater than 7).
- Excessive exposure to stressful conditions such as gory sights and sounds and environmental hazards.
- Failure to recognize the talents and capabilities of one's team members.
- Assignment to tasks for which one is not properly trained.
- Failure to thank disaster workers for their contributions and the personal sacrifices they have made.

Recommendations for the Prevention and Mitigation of Collateral Damage Among Disaster Workers

The reverse of the 15 factors outlined above will go far to limit the negative impact of disaster work on relief workers. Excellent disaster response leaders, however, can do a great deal more to mitigate the potential that their colleagues and those they supervise will be impaired by a disaster's collateral damage. The following recommendations can prevent or alleviate a disaster's collateral damage on the dedicated workers who are trying so hard to make a difference in the lives of others.

- Plan for a disaster response well in advanced of an actual mobilization and deployment.
- Develop clear written protocols and procedures.
- Include all of the team members in the development of the procedures document.
- Assure that all team members are adequately trained to perform their duties during a disaster response.
- When called to service, gather as much information as possible regarding the nature and magnitude of the disaster and the types of services that will be required of the support team members. Also gather as much up-to-date information as possible regarding the "on the ground" circumstances that the team will be working under.
- Develop a clearly defined leadership cadre.
- Determine if there are factors that would prohibit participation of some of your team members in the disaster response.
- Model the structure of your team on the structure presented in the Incident Command System of the National Incident Management System. It is easier to work within the Incident Command System if your team is already structured in the same fashion (NIMS, 2007).
- Establish appropriate sub teams that do not exceed the recommended span of control (1 leader handling about 5 personnel and certainly no more than 7).
- Develop and maintain open lines of communications between all team members. Encourage people to ask questions about their assignments and to clarify their specific responsibilities.
- Leaders should be open to challenges from their team members for the purpose of clarifying information and deciding on a strategic approach to the disaster services.
- Develop a strategic plan and a set of tactics that help to achieve the strategy.
- Brief personnel before they are deployed and discuss their experiences when they return from their assignments.
- Be flexible and alter the approach as circumstances evolve.
- Communicate actively with team members several times a day.
- Check on the welfare of you team members frequently.
- Work to resolve misunderstandings and frustrations as soon as they arise.
- Bring together team members who are in conflict and assist them in resolving their differences.
- Listen to personal issues brought up by team members.
- Rest work teams and make sure they are adequately nourished and hydrated.
- Insist that team members get adequate sleep.

- When possible, rotate assignments among team members to help alleviate boredom and frustration.
- Acknowledge and validate team member contributions to the disaster relief efforts.
- Provide small group support sessions upon return of the team to their home base.
- Provide a variety of post action staff support services (Polk and Mitchell, 2009; Potter and La Berteaux, 2000)
- Thank people for what they do on behalf of the team and for the benefit of the disaster victims.

CONCLUSION

Maintaining the health and effective functions of both individual disaster relief workers and the teams that provide disaster support services should be a high priority among disaster management personnel. The maintenance of unit cohesion and unit performance among disaster support teams deserves a considerable amount of attention. If the care providers do not receive sufficient support, their ability to serve a community wounded by a disaster will be seriously impaired. Training, preparation for disaster deployment, and enhanced interpersonal communications are essential for the success of disaster relief services. They will also reduce the potential that disaster workers will become victims of a disaster's collateral damage.

REFERENCES

American Psychiatric Association (19+64). *First aid for psychological reactions in disasters*. Washington, DC: American Psychiatric Association.

Artiss, K. (1963). Human behavior under stress: From combat to social psychiatry. *Military Medicine, 128*, 1011-1015.

Boscarino, J., Adams, R. and Figley, C. (2005). A prospective cohort study of the effectiveness of employer-sponsored crisis interventions after a major disaster. *International Journal of Emergency Mental Health. 7* (1), 31-44.

Centers for Disease Control, National Institute for Occupational Safety and Health (2002) *Traumatic Incident Stress: Information for emergency response workers*, DHHS (NIOSH) Publication Number 2002-107.

Dyregrov, A. (1989). Caring for helpers in disaster situations. *Disaster Management, 2*, 25-30.

Flannery, R.B., Jr., Anderson, E., Marks, L. & Uzoma, L. (2000). The Assaulted Staff Action Program (ASAP) and declines in rates of assaults: Mixed replicated findings. *Psychiatric Quarterly, 71*, 165-175.

Flannery, R.B., Jr. (2001). Assaulted Staff Action Program (ASAP): Ten years of empirical support for Critical Incident Stress Management (CISM). *International Journal of Emergency Mental Health*, *3*, 5-10.

Jenkins, S.R. (1996). Social support and debriefing efficacy among emergency medical workers after a mass shooting incident. *Journal of Social Behavior and Personality, 11,* 477-492.

Forstenzer, A. (1980). Stress, the psychological scarring of air crash rescue personnel. *Firehouse*, July, 50-52; 62.

Mitchell, J.T. (1982). The psychological impact of the Air Florida 90 Disaster on fire-rescue, paramedic and police officer personnel. In R Adams Cowley, Sol Edelstein and Martin Silverstein (Eds.) *Mass casualties: A lessons learned approach, accidents, civil disorders, natural disaster, terrorism*. Washington, DC: Department of Transportation (DOT HS 806302), October, 1982.

National Incident Management System Integration Center (2007). *National Incident Management System (NIMS-National Standard Curriculum Training Development Guidance-FY07)*. Washington, DC: US Department of Homeland Security.

Potter, D. and LaBerteaux, P. (2000). Debriefing the debriefers: Operational Guidelines. In G.S. Everly and J.T. Mitchell, *Critical Incident Stress Management: Advanced group crisis interventions, a workbook.* Ellicott City, MD: International Critical Incident Stress Foundation.

Myers, D. and Wee, D. (2005). *Disaster mental health services: A primer for practitioners.* New York: Brunner-Routledge.

Polk, D, and Mitchell, J.T.(2009). *Pre-hospital behavioral emergencies and crisis response*. Boston: Jones and Bartlett.

U.S. Department of Health and Human Services. *Emergency mental health and traumatic stress: Tips for emergency and disaster response workers*.

Western Management Consultants. (1996). *The Medical Services branch CISM evaluation report.* Vancouver, B.C.: Author

Empowered Learning Presents: jeffmitchell

Elearn1 productions and Dr. Jeff Mitchell have developed a variety of new video based training programs on critical incident stress management. Go to www.DrJeffMitchell.com to view DVD samples and purchase online.

FEATURED DVD:

Critical Incident Stress Management

Strategic Planning On the Street!

An intense training program featuring Dr. Jeff Mitchell discussing why good CISM is based on a strategic plan, and how to create that plan.

Three scenarios are accompanied by questions for discussion.

The program opens with suggestions on training applications for team leaders.

ALSO AVAILABLE:

Crisis Management Briefing

Dr. Jeff Mitchell offers information about the nature and uses of a CMB, and then conducts a demonstration with a group of traumatized employees in a business setting.

Debriefing

Dr. Mitchell explains the rationale for using a CISD and describes, in detail, the seven steps in the process. Following a Crisis Management Briefing demonstration, he leads a traumatized group of business executives through a CISD.

Lessons From Experience

In this series, CISM professionals share their experiences and lessons with Dr. Jeff Mitchell. Program One concentrates on working with schools and working in circumstances where the event is separated from the intervention.

Defusing

Dr. Jeff Mitchell describes the defusing process and it benefits. Following a crisis management briefing, he conducts a demonstration of a defusing with a small group of business executives.

Each program includes study questions that can be used for discussions among CISM team members.

Selected Annotated Journal Resources

Jennifer Marx Vacovsky, Psy.D.

Boscarino, J. A., Adams, R. E., & Galea, S. (2006). Alcohol Use in New York After the Terrorist Attacks: A Study of the Effects of Psychological Trauma on Drinking Behavior. *Addictive Behaviors 31*, 606-621.

TYPE OF ARTICLE

- Original Empirical Investigation

OBJECTIVE/PURPOSE OF THE ARTICLE

- To examine the relationship between alcohol use and the September 11, 2001 World Trade Center disaster (WTCD).
- Specifically, to determine if alcohol use and misuse was related to exposure of the WTCD-related events, for up to two years after the WTCD, independent of other risk factors such as stress life events, history of traumatic exposures, or demographic characteristics.

METHODS

Participants

- Participants were gathered from a 2-wave longitudinal panel study of English and Spanish speaking adults living in New York City on the day of the WTCD and on the day of their interview. The W1 survey (the baseline survey) was completed by 2368 individuals and 1681 completed the W2 survey (follow-up survey). The W1 cooperation rate was 63%, and 71% of participants were successfully re-interviewed for W2.

Materials

- Measures of alcohol consumption, binge drinking, and alcohol dependence were the outcomes. In the survey respondents were asked how many times in the past year they had consumed 6 or more alcoholic drinks on one occasion. The respondents were also asked about consumption of alcohol based on the CAGE criteria for alcohol dependence, which is a widely used and validated scale. The CAGE survey consists of four questions about drinking (e.g. drank first thing in the morning), where alcohol dependence was defined as two or more positive answers. Respondents were defined as alcohol dependent if they met the CAGE criterion in the 24 months between the WTCD and the W2 follow-up survey, while not meeting the criterion was defined as the reference group.
- Based on alcohol consumption, an increase in drinking measure was created, which was the difference between the number of drinks per day for W2 minus the number of drinks per day for W1. The sample was divided into those who had an increase of 2 or more drinks per day and those who had less than a 2 drink increase, no change, or a decrease in drinking. Responses were multiplied to calculate drinks per month.
- The alcohol consumption measure was created based on the number of drinks per month, which was the combination of questions asking how many days in the past month they drank alcoholic beverages and how many drinks they had on the days they drank. The responses were multiplied to calculate drinks per month.
- The final measure of alcohol use included the number of drinks per day the respondent had on days he or she drank.
- Three stress measures were also used. A WTCD exposure scale was created based on the sum of experience of 14 possible events that the participant could have experienced during the WTCD. The negative life event scale was also used, which is based on the sum of eight experiences the respondent may have had in the 12

months before the WTCD (e.g. death of spouse, divorce, etc.). The third stress measure involved the experience of 10 lifetime traumatic events, other than the WTCD which could have happened to the respondent (e.g. being attacked with a weapon, forced sexual contact, etc.).

- A history of anti-social behavior was also measured using two survey questions: self-reports of ever being homeless or of ever being arrested.
- Social support was measured by the sum of four questions in the survey about emotional, informational, and instrumental support.
- The Rosenberg self-esteem scale was used to measure levels of self-esteem.
- PTSD was measured by meeting the criteria in the DSM-IV.

Procedure

- Both waves of the survey panel could be considered as random and representative samples of residents who were living in NYC on the day of the WTCD since a sampling weight was used for each wave to correct for potential selection bias for the number of telephone numbers and persons per household, and for the over-sampling of participants receiving or seeking treatment. Demographic weights were also used for W2 data to adjust for slight differences in response rates by different demographic groups.
- Questionnaires were translated into Spanish and then back-translated into English by bilingual Americans to ensure cultural and linguistic appropriateness of items.
- A telephone survey was conducted one year after the attacks between October and December 2002 using random-digit dialing in order to obtain the baseline (W1). Interviewers obtained verbal consent from participants and then determined the area of residence. When more than one eligible adult lived in the household, interviewers selected the person with the most recent birthday for participation.
- People who reported receiving mental health treatment in the year after the fact were over-sampled for the overall study. The sample was stratified proportionally according to the five NYC boroughs.
- An attempt was made to re-contact all W1 participants one year later between October 2003 and February 2004 (2 years after the WTCD) for the follow-up survey (W2). The procedures were the same as for W1.
- The mean duration of interviews was 45 minutes for W1 and 35 minutes for W2. Trained interviewers used a computer-assisted telephone interviewing system, and interviewers were supervised and monitored by the survey contractor. A protocol was followed to provide mental health assistance to participants who required counseling.
- When statistical analyses were conducted, predictor variables included demographic factors of age, education, marital status, race/ethnicity, gender, and income, self-esteem, social support, WTCD exposure, negative life events, lifetime traumatic events, antisocial behavior, and PTSD diagnosis. Dependent variables included binge drinking, alcohol dependency, and increase of drinks per day.

RESULTS

- Changes in alcohol use from one year prior to the WTCD to two years post-WTCD were small and statistically nonsignificant increases in binge drinking and alcohol dependence.
- Approximately 14% of the sample reported drinking six or more drinks on one occasion at least once a month before the WTCD, and this percentage increased to 16% one year post-WTCD and decreased slightly to 15% two years after the WTCD.
- The percentage of participants meeting criteria for alcohol dependence ranged from 1.6% to 2.8%, with a statistically significant increase in the amount of alcohol consumed during this period.
- About 12% of participants reported and increase of two or more drinks per day between W1 and W2. The mean number of drinks per month and drinks per day also significantly increased post-WTCD and between W1 and W2.
- Men, Whites, college graduates, younger individuals, the unmarried, those with higher income, those with greater exposure to WTCD events, those with a history of antisocial behavior, and those with more social support consumed more alcohol per month two years after the WTCD as compared to women, non-Whites, older individuals, the less educated, lower income individuals, those who were more socially conforming, those experiencing fewer WTCD events, and those with lower social support.

- Post-WTCD, individuals more prone to binge drinking were males, Latinos, younger people, those with greater exposure to WTCD events, and those with a history of antisocial behavior.

CONCLUSIONS/SUMMARY

- Overall, alcohol consumption, binge drinking, and alcohol dependence were associated with exposure to WTCD events after controlling for other risk factors.
- There was no association between drinks per day, binge drinking, or alcohol dependence and meeting criteria for PTSD.
- Traumatic stress reactions are complex phenomena which are associated with a broad range of outcomes and influenced by biological, psychological, and behavioral causal pathway. Alcohol self-medication can result from PTSD-related psychological states such as anxiety and depression. This supports the findings that alcohol consumption did increase with more exposure to the WTCD events.
- Possible limitations of the study include omitting potential participants without phones and those who do not speak English or Spanish. Due to this limitation, the study may have missed vulnerable individuals and groups. However, the sample matched the 2000 Census for NYC, so there does not appear to be systematic bias. Generalizations in the associations between alcohol use and well-being to non-English and Spanish speaking groups are limited, however. Additionally, all measures of alcohol use, well-being, and mental health status were based on self-report. Conclusions are also limited because the study is retrospective, as data was not collected before the WTCD. The WTCD itself may have altered perception or recall of pre-disaster alcohol use or well-being.

CONTRIBUTIONS/IMPLICATIONS

This study expands upon the original work by Boscarino, Adams and Figley that was published in this Journal (see Vol. 7, pages 9-22).

- The strength of this study was increased by the large, random, representative sample of NYC residents, the use of standard scales and measurements to assess well-being, the use of different alcohol measures, and the occurrence of a specific community-wide disaster event.
- The results of the study suggest a possible link between population-level increases in alcohol consumption and exposure to a large-scale traumatic event.
- Further studies might focus on exploring possible links between other large-scale traumatic events and problematic drinking, as well as the WTCD or other large-scale traumatic events with the use of other substances, such as illegal narcotics.

The Ethics of Terrorism: Innovative Approaches From an International Perspective (17 lectures), Eds.

Thomas Albert Gilly, Yakov Gilinsky, Vladimir A. Sergevnin
Springfield, IL, Charles C. Thomas, (2009), 223 pages, plus table of contents and contributors 5 pages, plus indices 10 pages. $62.95/100, H.C.

Reviewed by H.H.A. Cooper, LLB, MA

The literature in the field of terrorism has expanded exponentially over the past four decades. It poses considerable challenges for the impartial, informed reviewer. This is particularly the case with the numerous offerings generated post 9-11. The research, as evidenced by the content, the bibliographies, and the indices, leaves much to be desired. Works on terrorism tend to be written by highly-opinionated people and their presentations can hardly be expected to be free from one kind of bias or another. That being said, the task of the reviewer has to be focused, primarily, on the utility of the work for the prospective audience to which the review is directed. Ideally, it should answer the reader's questions: Why should I read this book? What is in it of interest for me? Addressed to an extensive, varied audience, those questions are susceptible of a number of answers, some more helpful than others. The challenge presented by this book is especially acute for a reviewer seeking to be impartially helpful to the wide-ranging readership of this Journal. In short, there is a little something written in it for everyone regardless of discipline or professional preference. Conversely, there is much that, as a consequence, would likely be dismissed less on grounds of academic merit than of relevance to a particular reader's needs.

This book is a very ambitious undertaking. It links together, not always very harmoniously, the essays of seventeen authors of widely differing backgrounds, experience, and ethnic provenance. That, in itself, is a major challenge, both for the editors as well as any reviewer. Some contributions are distinctly more relevant to the overall theme than others. Of notable concern, in the present context, is the absence among the contributors of any mental health professional. There are many interesting questions raised by this work that would have benefitted from a serious presentation of the perspective of one deeply versed in both the mental health field and terrorism. One such, who receives but the briefest of mentions, , is that great Italian psychiatrist, the late Franco Ferracuti. Another, who might usefully have found a mention, is the late Dr. David Hubbard (The Skyjacker: His flights of fantasy, 1973). There are, happily, among the living a number who could have filled the bill. There is, consequently, an unfortunate lack of proper attention to the psychological make-up of the terrorist personality, which has a significant bearing on ethical issues both from the perspective of the perpetrator and those seeking to understand his or her motivation.

Similarly, the treatment of the gender issue here seems to have been distorted not merely by a lack of specialist perspective but also by an inadequate familiarity with the literature on the subject, (Gilly, pages 159/160), "With few exceptions…. in recent research, criminologists have demonstrated little concern about the participation of women in terrorist activities." Women's participation in terrorism certainly did not begin with the recent suicide bomber, or the Chechen "black widows." It commanded the attention of terrorism specialists more than thirty years ago. Serious ethical issues going back to Old Testament times are posed, for example, by the tragic career of Nora Astorga. A noteworthy issue arises out of this with respect to terrorism research generally. However useful the Internet for locating relevant sources of data, it is no substitute for the laborious reading of such works as that presently reviewed in order to evaluate their worth.

Anthologies always pose a difficult problem for the reviewer; selection of particular contributors for attention is often dictated by subjective preference rather than individual merit. Some of these essays, while worthwhile perhaps in

their own expressed field of reference, must be judged to have but tangential connection with either ethics or terrorism and only rarely a significant relationship to both. A notable exception is Chapter 14, titled Ethics of Terrorism by Valdimir Baloun. This contribution is outstanding, scholarly, and, perhaps, the only one that truly hews to the theme expressed in the book's title. It is, despite its necessary emphasis on "Islamic terrorism," remarkably open-minded, especially in its examination of the reactions of those exposed to it. He poses a number of pertinent questions of an ethical nature in this regard, (page 179). He deals, courageously and perceptively, with The Holocaust and anti-Semitism and the way both phenomena have, in Hegelian terms, shaped subsequent actions and reactions to them. He comments that "It would seem that if Europe had not had its Jews it would have had to invent them, "(page 181). His treatment of the tenets of Islam, though necessarily constrained by its brevity, is cogent and pertinent as a lead-in to its relationship to modern terrorist manifestations. Few would disagree with the observation that "Islam is a very strict religion, which a priori can't find common ground with this new ethics of the West." But, on both sides, there has been an increasing disinclination to find any livable accommodation between the two. In particular, the Palestinian/Israeli struggle has become "owned" by fanatics on both sides, (p. 184). It is a truism that those unaffected directly by acts of terrorism see the phenomenon as somewhat remote….."until terrorism hits Europe or the United States, the reaction is more or less indifferent, "(p. 185). Ethical analysis of the topic is obviously colored by propinquity.

Of special interest from a mental health perspective are Dr. Baloun's observations under Terrorism Motivated by Religion, (page 185). Referring to perpetrators from bin Laden's organization, "….they work themselves into an almost psychotic state," and "…in this it's possible to detect real signs of megalomania." This, as the author points out, is not confirmed solely to the adherents of Islam. He speaks of "Devout fanatic terrorists," …inhabiting… "a psychotic world while outwardly they become machines, which can be likened to schizophrenic forms of mental illness," (p. 185). Justification is sought by the device of "….verses of the Koran taken out of context," (page 186). It is not only deluded terrorists who resort to this stratagem, but, often enough, those who seek to understand them. The "unthinking fanatic," (page 186), is as much deluded by him or herself as by the machinations of others. Dr. Baloun, following a well-centered philosophical discussion, observes, "I also believe that fanaticism of any kind cannot be fought with armies in the sense of a 'normal, war,' (page 189). " In particular, following Heidegger, he takes the view of conscience and its application as being a very personal experience involving choice, (also a Koranic precept), and "In ethical discussions there remains the open question whether the "absence of conscience" is limited only to psychopathic individuals as the traditional understanding implies," (page 186). He raises further the interesting interrogatory, "Does every person necessarily perceive that terrorism, slavery, and so forth are morally wrong?" (page 188). Thus, "…judging any ethics of Islamic 'terrorism' is extremely difficult," (page 189). Or, it might be added, of any other kind of terrorism.

Selection of contributors, save for such as Dr. Mengele, is an invidious task. That other contributions have not received a similar, extended notice by this reviewer ought not to be interpreted as meaning, in any way, that they are dismissed as irrelevant or unmeritorious. Rather is it that choice has been mediated by assumed readership preferences. A review, rather like the donut sample offered upon entry to Krispy Kreme, is an enticement, and invitation to proceed to a more sumptuous consumption of the book itself. A review is not a substitute for such an exercise. A diligent reader will discover his or her own points of interest, areas of agreement, or dispute. "The mine is always bigger than the gem."

Professor H.H.A. Cooper, former Director of the Criminal Law Education and Research Center, (CLEAR), NYU and Deputy Director of the NYU Center of Forensic Psychiatry, was Staff Director of the National Advisory Committee Task Force on Disorders and Terrorism, U.S. Department of Justice, (1974/1977). He has taught at The University of Texas at Dallas for the past 26 years. He is inter alia, the author of Ethics and Assassination, published in the Journal of Applied Security Research, 2009.

High-Tech Terror: Recognition, Management, and Prevention of Biological, Chemical, and Nuclear Injuries Secondary to Acts of Terrorism

By Robert Samuel Cromartie, III & Richard Joseph Duma
Springfield, IL: Charles C Thomas, 2009

Reviewed by Laurence Miller, PhD

Some books inform us, some instruct us, others warn us, and a few try to prepare us for the worst. Then there are those books that do all of these things while scaring the bejeezuz out of us, and *High-Tech Terror* will snap you to attention from the first page. This slim volume packs a megaton wallop of data on the "NBC" triad of nuclear, biological, and chemical weapons that threaten our civilization in the 21st century. Actually, as the book makes clear, NBC terrorism has a long history, dating back to at least the middle of the 20th century in the case of nuclear terrorism, and perhaps as early as the 18th and 19th centuries for biological and chemical warfare. There seems to be a malevolent side of human inventiveness that, when we discover a new technology, our first impulse is to weaponize it.

The book begins with a discussion of biological agents and disease organisms, explaining how they infect the human body, their signs and symptoms, and what primary, secondary, and tertiary steps can be taken to mitigate their effects on individuals and populations. The whole microbial rogue's gallery is here: anthrax, botulism, tularemia, smallpox, ricin, pneumonic and bubonic plague, and others. In a style that manages to be both chilling and clinical, the authors painstaking explain how to identify the effects of each agent and what actually happens to us if and when we get infected.

Next up are chemical warfare agents, which can be roughly divided into choking agents, blistering agents, or nerve agents. Not sure which you'd rather die of? Don't worry, you may not have to make a choice because some chemical agents have two or all three of these properties. Again, the effects of each agent are described, along with available treatment and mitigation strategies.

The newest kids on the block are the nuclear weapons – and not just the kind that blow up cities. These chapters in this section explain how radiation affects the body, and describe in detail the nature of acute radiation syndrome (ARS), as well as both the short-term and long-lasting effects of radiation on individual health and the general environment.

The crisp narrative text is further aided by informative charts and tables, and by a few black-and-white photographs. One of the major virtues of this book is that the authors manage to informatively distill and summarize a vast universe of information into less than 200 pages, which means that there is really no excuse for any professional in the medical, mental health, or emergency services field *not* to read this book. Indeed, what comes across in these pages is just how damn inevitable it is that we will soon face new crises involving NBC terrorism. *High-Tech Terror* provides the fundamental clinical and empirical knowledge base that is key to effective preparation.

INTERNATIONAL JOURNAL OF
EMERGENCY MENTAL HEALTH

Instructions For Contributing Authors

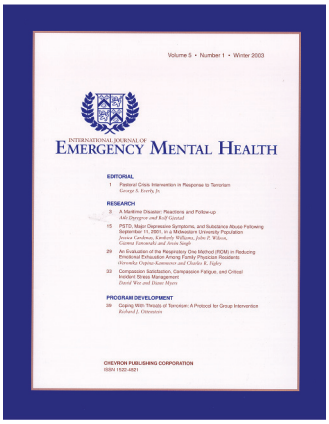
1. The *International Journal of Emergency Mental Health* provides a peer-reviewed forum for researchers, scholars, practitioners, and administrators to report, disseminate, and discuss information relevant to the goal of improving practice and research within the field of emergency mental health. Editorials, special articles or invited papers may not be peer-reviewed.
2. The *Journal* publishes manuscripts on topics relevant to emergency mental health including psychological trauma, disaster psychology, traumatic stress, crisis intervention, rescue services, Critical Incident Stress Management (CISM), war, terrorism, emergency medicine and surgery emergency nursing, burnout and compassion fatigue, occupational stress and crisis, employee assistance programs, suicidology and violence.
3. The *Journal* publishes manuscripts which fall into eight major categories:
   - original research
   - book reviews
   - case studies
   - empirical reviews
   - commentaries
   - theoretical reviews
   - continuing education updates/reviews
   - program development
4. The *Journal* will not consider manuscripts which are under concurrent review for publication elsewhere, or manuscripts which have been previously published.
5. For purposes of author-editor communication, a phone number, fax number, e-mail address, and a postal address should be included with the manuscript. Manuscripts without this contact information may not be accepted for review.
6. **The following guidelines must be followed for manuscript preparation:**
   - **Manuscripts must be double spaced and prepared in accordance with the most current *Publication Manual of the American Psychological Association.***
   - **Manuscripts must include a 100 to 200 word abstract and a suggested running headline.**
   - **A list of three to seven key words or phrases must be provided for indexing purposes.**
   - **The corresponding author must be clearly indicated with the street address, telephone number, fax number, and email address.**
   - **Camera-ready figures and illustrations must be provided separate from the text.**
   - **Generic or chemical names should be used when indicating specific medications.**
7. Authors are responsible for all statements made within the manuscript. They are responsible for the accuracy of their work and for obtaining any necessary permissions prior acceptance.
8. Upon acceptance, all authors must assign the copyright for the manuscript to the publisher.
9. Blind review for manuscripts is available upon the specific request of the author.
10. Upon acceptance, all manuscripts will be retained by the publisher.
11. Authors will receive page proofs for review prior to publication. For timely publication, page proofs must be returned within three days.
12. There are no page publication charges.
13. Reprints may be ordered directly from the publisher. A reprint order form will be included with the page proofs.
14. Manuscripts should be submitted in electronic version in Word format should be sent as an attachment to Laurence Miller, PhD at:

    docmilphd@aol.com

The email should be clearly labeled with the author(s)' name, manuscript title, and date.

CHEVRON PUBLISHING CORPORATION • PO Box 6274 • Ellicott City, MD 21042 USA
Telephone: 410.418.8002 • Fax: 410.418.8006 • Email: chevronpublishing.com

Subscribe Now!



INTERNATIONAL JOURNAL OF
EMERGENCY MENTAL HEALTH

A peer-reviewed forum for researchers, scholars, clinicians, and administrators to report, disseminate, and discuss information with the goal of improving practice and research in the field of emergency mental health. Published quarterly, topics include: psychological trauma, disaster psychology, traumatic stress, crisis intervention, emergency services, critical incident stress management, war, occupational stress and crisis, employee assistance programs, violence, terrorism, emergency medicine and surgery, emergency nursing, suicidology, burnout and compassion fatigue.

Check one only:

Individual Subscription (Four Issues)

- ❑ USA Only ..... $ 82.00 / year
- ❑ International ..... $128.00 / year

Institutional Subscription (Four issues)

- ❑ USA Only ..... $390.00 / year
- ❑ International ..... $485.00 / year

Subscribe by returning this form with your payment to Chevron Publishing, PO Box 6274, Ellicott City, MD 21042; fax this form with a purchase order to [410.740.9213] or order on-line from our Web site with a credit card. No company or institution checks can be accepted for individual subscriptions.

A limited number of back issues are also available for $15.00 each. Visit our Web site for a complete table of contents for each issue or email [office@chevronpublishing.com] for more information.

Subscription For

(Please Print Clearly):

Name/Institution_____

Address _____

_____

City/State/Zip/Country _____

E-Mail (for confirmation) _____

Method of Payment

❑ Check or Money Order (in U.S. funds)
(Payable to Chevron Publishing Corp.)

❑ MasterCard ❑ VISA ❑ AMEX

Expiration Date:_____

Name on Card: _____

Card No.: _____

Signature: _____