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Editor: Robert J. Ursano, M.D.; Associate Editors: Carol S. Fullerton, Ph.D., Ann E. Norwood, M.D.

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
Department of Psychiatry, Uniformed Services University of the Health Sciences
4301 Jones Bridge Road
Bethesday, MD 20814

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Department of Psychiatry, Uniformed Services University of the Health Sciences
4301 Jones Bridge Road
Bethesda, MD 20814

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Individual & Community Needs

From the Conference:

PLANNING for BIOLOGICAL EVENTS:

RESPONSES to TERRORISM & INFECTIOUS DISEASE OUTBREAKS

Friday - Sunday

October 19 - 21

2001

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A Conference Sponsored by:

Center for the Study of Traumatic Stress
Department of Psychiatry
Uniformed Services University of the Health Sciences

and

Center for Mental Health Services
Substance Abuse & Mental Health Services Administration

Responding to Bioterrorism

Individual & Community Needs

Editor
Robert J. Ursano, M.D.

Associate Editors
Carol S. Fullerton, Ph.D.
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Center for the Study of Traumatic Stress
Department of Psychiatry
Uniformed Services University of the Health Sciences
4301 Jones Bridge Road
Bethesda, Maryland 20814-4799

From the Conference

PLANNING FOR BIOLOGICAL EVENTS:

RESPONSES TO TERRORISM & INFECTIOUS DISEASE OUTBREAKS

Editor's Note: This transcript has been edited, however, as in most transcripts some errors may have been missed. The editors are responsible for any errors of content or editing that remain.

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Contents

List of Speakers vii
List of Attendees ix
Preface xi
Executive Summary xiii

1 Introduction 1

2 Learning from the Past: The 1918 Influenza Pandemic 5
Monica Schoch-Spana

3 The Threat of Bioterrorism 17
Randall J. Larsen

4 Biological Agents of Terror & Community Response 45
Ann E. Norwood & Molly J. Hall

5 State & Local Response Plans 67
Moderator: Brian Flynn
Panel: Steven A. Marshall, Robert DeMartino, & Alvin Collins

6 The New York Experience 91
John Oldham

7 Discussion 115
Robert J. Ursano

Appendices: Supplemental Material
Appendix 1 Slides: Learning from the Past: The 1918 Influenza Pandemic. *Monica Schoch-Spana*
Appendix 2 Slides: The Threat of Bioterrorism. *Randall J. Larsen*
Appendix 3 Slides: Biological Agents of Terror & Community Response. *Ann E. Norwood & Molly J. Hall*

SPEAKERS

Alvin Collins
Chief of Staff
Governor Glendening
Annapolis, MD

Robert DeMartino, M.D.
Associate Director, Program in Trauma, Terrorism & Systems Consultation
Rockville, MD

Brian Flynn, Ed.D.
Director, Division of Program Development
Special Populations & Projects
Rockville, MD

Molly J. Hall, M.D.
Associate Professor
Department of Psychiatry
Uniformed Services University of the Health Sciences
Bethesda, MD

Randall J. Larsen
Director
ANSER Institute for Homeland Security
Arlington, VA

Steven A. Marshall, M.Sc.
Bioterrorism Preparedness Coordination
Wisconsin Division of Public Health
Madison, WI

Ann E. Norwood, M.D.
Associate Professor & Associate Chair
Department of Psychiatry
Uniformed Services University of the Health Sciences
Bethesda, MD

John M. Oldham, M.D.
Director, New York State Psychiatric Institute
New York, NY

Monica Schoch-Spana, Ph.D.
Senior Fellow
Johns Hopkins Center for Civilian Biodefense Studies
Baltimore, MD

Robert J. Ursano, M.D.
Professor & Chairman
Department of Psychiatry
Uniformed Services University of the Health Sciences
Bethesda, MD

CONFERENCE PLANNING COMMITTEE

Robert J. Ursano, MD, Conference Chairman

Ann E. Norwood, MD • Carol S. Fullerton, PhD • Molly J. Hall, MD

Alan Radke, MD • Robert DeMartino, MD • Jennifer L. Stecklein

ATTENDEES

William C. Armistead
Department of Mental Health
Richmond, VA

Joseph A. Barbera, M.D.
Co-Director
Institute for Crisis, Disaster & Risk Management
George Washington University,
Washington, DC

Georges C. Benjamin, M.D.
MD Department of Health & Mental Hygine
Baltimore, MD

Barbara Carey, RN, MSN
Mental Hygiene Administration
Baltimore, MD

John Clizbe, Ph.D.
Vice President Disaster Services
American Red Cross
Falls Church, VA

Alvin Collins
Chief of Staff
Governor Glendening
Annapolis, MD

Robert E. DeMartino, M.D.
LCDR, USPHS
Associate Director for Program in Trauma
Terrorism & Systems Consultation
Center for Mental Health Services, SAMHSA
Rockville, MD

Charles C. Engel, M.D.
LTC, MC, USA
Director, Deployment Health Center
Assistant Professor, Department of Psychiatry
Uniformed Services University of the Health Sciences
Bethesda, MD

Brian Flynn, Ed.D.
ADM, USPHS
Director, Division of Program Development
Special Populations & Projects
Center for Mental Health Services, SAMHSA
Rockville, MD

Carol S. Fullerton, Ph.D.
Associate Professor (Research)
Department of Psychiatry
Uniformed Services University of the Health Sciences
Bethesda, MD

Robert Glover, Ph.D.
Executive Director, NASMHPD
Alexandria, VA

Molly J. Hall, M.D.
Col, MC, USAF
Associate Professor, Department of Psychiatry
Uniformed Services University of the Health Sciences
Bethesda, MD

Michael F. Hogan, Ph.D.
Director, Department of Mental Health
Columbus, OH

Harry C. Holloway, M.D.
Professor, Department of Psychiatry
Uniformed Services University of the Health Sciences
Bethesda, MD

Theodore Jarboe, M.S., CEM, EFO
Deputy Chief, Montgomery County
Emergency Management Services
Rockville, MD

Randall J. Larsen
Director
ANSER Institute for Homeland Security
Arlington, VA

Attendees

Robert Malson, J.D.
Executive Director
D.C. Hospital Association
Washington, DC

David H. Marlowe, Ph.D.
Senior Lecturer, Department of Psychiatry
Uniformed Services University of the Health Sciences
Bethesda, MD

Steven A. Marshall, MSC
Bioterrorism Preparedness Coordination
Wisconsin Division of Public Health
Madison, WI

Ann E. Norwood, M.D.
COL, MC, USA
Associate Professor and Associate Chair
Department of Psychiatry
Uniformed Services University of the Health Sciences
Bethesda, MD

Michael Novinski, M.P.A.
New Lenox, IL

John M. Oldham, M.D.
Director, New York State Psychiatric Institute
New York, NY

Roger Peele, M.D.
Chief Psychiatrist, Montgomery County
Rockville, MD

Betty Pfefferbaum, M.D., J.D.
Chairman
Department of Psychiatry & Behavioral Sciences
University of Oklahoma Health Sciences Center
Oklahoma City, OK

Monica Schoch-Spana, Ph.D.
Senior Fellow
Johns Hopkins Center for CivilianBiodefense Studies
Baltimore, MD

Merritt Schreiber, Ph.D.
UCLA Trauma Psychiatry Program
Laguna Niguel, CA

Jon A. Shaw, M.D.
Professor, Director & Training Director
Division of Child & Adolescent Psychiatry
& Behavior Sciences
Department of Psychiatry, University of Miami
Miami, Florida

Thomas R. Thomson, M.Ed.
Disaster Liaison
Department of Mental Health & Substance
Abuse Services
Oklahoma City, OK

Tim Tinker, Dr.PH., M.P.H.
Chief, Communication & Research Branch
Agency for Toxic Substances & Disease Registry
Atlanta Federal Center
Atlanta, GA

Robert J. Ursano, M.D.
Professor & Chairman
Department of Psychiatry
Uniformed Services University of the Health Sciences
Bethesda, MD

Philip Veenhuis, M.D., M.P.H.
Department of Mental Health
Raleigh, NC

Kenneth Waldrup, D.V.M.
Cleburne, TX

PREFACE

In the fall of the year preceding the Sept 11, 2001 terrorist attack on New York City and the Pentagon in Washington, DC, and subsequent bioterrorist anthrax attacks, plans were begun for our conference, "Planning for Biological Events: Responses to Terrorism and Infectious Disease Outbreaks." The goal of this conference was to address the state and local needs in preparation for behavioral and mental health consequence management after a bioterrorist attack. The importance of the conference was evident as it was held in October shortly after bioterrorist anthrax attacks had begun in New York City and Washington, D.C.

The conference brought together national and international experts in disaster mental health, the social sciences and health care and policy planners from states and regions across the nation. The result has been a detailed consideration of the needs of state, local and regional as well as national contributions to mental health care needs after a bioterrorist attack.

Planning for mental health and behavioral consequence management after a bioterrorist attack must address the nation as a whole. The goal of terrorism is to disrupt the continuity of the nation by instilling fear and decreasing safety. This affects not only those who may develop mental health problems but also those who continue to work and care for their families and loved ones while experiencing an altered sense of safety, increased fear and arousal and concern for their future. Consequence management for mental health begins with considering the needs of the nation as a whole and then moves to the needs of those directly exposed and those who may have been vulnerable before a bioterrorist attack and now bear the additional burdens of lost supports and increased demands.

Biological agents are the New Millennium atomic concern. Agents - bacteria, viruses, prions - can create chaos and national disruption. In the current world climate the psychological aspects of biological warfare are often far more effective against us than other aspects of this weapon. The general public has little scientific background upon which to build an understanding of infectious diseases. Public health is now a central component of national security. A swift and effective response by public officials to a bioterrorist attack can prevent negative consequences (e.g., fear, stigma and scapegoating) and promote responsible behaviors by citizens.

Bioterrorism requires different institutions to respond than in other disasters, primarily the public health and medical systems. Therefore, traditional disaster funding may be misdirected. Management of bioterrorism requires a multidisciplinary approach to understanding the effects of these agents on nations, communities, families and individuals. In preparing for bioterrorism and other weapons of mass destruction there is an understandable disparity between the priorities of the nation and those of individual communities. While experts believe that it is highly likely that there will be an attack using weapons of mass destruction somewhere in the nation, the risk of such an event in a given community is quite low.

The recommendations that came out of the conference address policy needs, mental health and behavioral planning, communication programs, education and training and decision support needs for consequence management after a bioterrorist attack. The conference attendees and sponsors are indebted to those who teach us these lessons from their experiences and hope the recommendations will provide guidance to policy and health care planners for limiting suffering and assuring the resiliency of our communities and nation in the face of a new war, bioterrorism.

EXECUTIVE SUMMARY

Bioterrorism differs from natural disasters in a number of fundamental ways. The microbial world is invisible, mysterious, frightening and unknown to many, including leaders, members of the media, and the general public. Bioterrorism is an act of human malice intended to injure and kill civilians and is associated with a higher rate of psychiatric morbidity than are "acts of God". A hurricane is usually an isolated event with subsequent consequences. Bioterrorism, in contrast, due to the incubation period of microorganisms, and evolving echoes of exposure, fear and possible spread of contagion, is a process trauma with consequences spread widely over time. In addition there is the threat of further attacks, announced or covert. Bioterrorism is unbounded by time and space. Global travel can spread infected, asymptomatic individuals widely and quickly. The agents responsible for infectious diseases cannot be discerned by our unaided senses creating uncertainty and a sense of vulnerability and fear.

Bioterrorism causes unfamiliar diseases that are diagnostic and treatment challenges. Today's medical community has limited experience with the diseases produced by bioterrorism agents such as anthrax and smallpox. Naturally occurring outbreaks of infection may be difficult to distinguish from intentional attacks. Patient presentations and the at-risk populations differ in a terrorist attack from naturally occurring outbreaks because of the different routes of dissemination and possibly altered microorganisms.

In contrast to a natural disaster, bioterrorism does not produce a readily apparent disaster scene. The "first responders" to bioterrorism are not the traditional fire and police groups. Command-and-control teams for bioterrorism consequence management are different than those in other disasters. Following bioterrorist events, public health, medical institutions and law enforcement have lead roles. The intelligence and law enforcement communities are essential to preventive efforts. Because bioterrorist attacks are decentralized they require multiple levels of intervention and create additional challenges by inspiring copycats and hoaxes.

Terrorism's primary goal is to destabilize trust in public institutions. Biological terrorism in particular can strike at the public's faith in its institutions and jeopardize the

continuity of society. In the case of contagious agents, neighbors may be perceived as in desperate need and at the same time as a potential source of infection. Although experience with other disasters indicates that most individuals will act with altruism, some will maximize their personal safety. While some individuals may desert the infected, others will expose themselves needlessly to carry out acts of kindness. All of these responses may result in disappointed expectations and unnecessary injury and community disruption. Carefully constructed plans for community guidance and information can organize post-disaster behavior; the absence of such plans invites chaos.

Institutions that must respond to the sudden surge of need following a bioterrorist event are particularly vulnerable to disorganization and breakdown. Although in general panic is rare in disasters, these groups and institutions, which may be overwhelmed by mass casualties and massive demands, are at some risk of panic. An untrained, uneducated, and unprepared staff may also be at risk to panic. Planning and pre-disaster exercises are critical to the prevention of these responses.

Quarantine, forced evacuation, mandatory vaccination, and mandated treatment would curtail many civil liberties. The tendency to use these draconian means increases as fear and anxiety increase. The demand for these actions as well as the failure to use them may contribute to community conflict and erode the public's confidence in the government. Careful analysis of the costs, including social, and benefits of these measures is needed.

Fear of contagion can have devastating consequences for all aspects of daily life after a bioterrorist event. The result may be that some communities become isolated and unable to obtain food and supplies. The lack of personnel due to infection or fear of infection can cripple basic community functions and financial institutions.

Importantly, the economic and mental health impacts of bioterrorism occur in different sequences and phases than in natural disasters. Fear of contamination (warranted or unwarranted) creates second and third order effects such as the collapse of tourism and the flight of business soon after an event. Terrorist attacks will specifically target basic societal infrastructure such as transportation, mail delivery, and communication.

For all of these reasons, the mental health and behavioral effects of bioterrorism present substantial challenges for the health care system. The public health and mental health infrastructures have eroded to the point that they can barely meet requirements under normal circumstances and have very limited surge capacity. Clinical care has been degraded due to the focus on episodic care rather than infrastructure development. Similarly, the recent changes in the delivery of health care have resulted in hospitals that run short of beds during a normal influenza season. The nationwide nursing shortage also hampers effective responses. The limited availability of treatment resources such as vaccines and antibiotics are also impediments to a successful medical response to bioterrorism and to decreasing fear and anxiety. Normal care for hospital patients will necessarily be critically modified in a major bioterrorist attack and elective treatments suspended entirely. Emergency care will be provided using a triage model that maximizes the efficient provision of care and bed utilization.

While education on bioterrorism has begun it is still needed for multiple groups: political leaders, the health care community, and the public, in general. Taking some of the mystery and novelty out of the world of microorganisms can prepare people to respond appropriately rather than irrationally. Community leaders must become aware that all communities are potential targets for terrorism and that complacency ensures an inadequate response.

A number of policy areas require early attention. Monies must be programmed for the long-term to ensure development and sustainment of the mental health and general public health infrastructure for responding to bioterrorism. These actions have a dual purpose, both preparing for bioterrorism and also for infectious disease outbreaks of virulent flu or emerging infections. In the short term, immediate funding should be provided to enable each state to hire a full-time mental health professional to integrate mental health considerations into all plans and responses. This can leverage already existing capabilities at the state and community level. Policies must address the proper balance of federal, state, local and private enterprise in the preparation for and response to bioterrorism.

The recommendations that follow are grouped under 5 headings: Policy; Mental Health and Behavioral Planning; Communication; Education and Training; and Decision Support: Data Acquisition for Health Surveillance and Program Development. Due to the intrinsic relatedness of these areas, there is overlap. Resources must be allocated to all five areas to ensure that preparation and response to bioterrorism is effective and coordinated.

Policy

1. Public health infrastructure must be developed or improved at the national, state, and local levels. National standards for public health practice need to be implemented. Increases in national, state, and local funding will have to be provided. National Health Care reimbursement policy will need to be changed to provide funding for preventive services and a surge capacity in health care facilities.

2. In the wake of recent terrorist events, there is an important need for government at all levels and private enterprise to form new public-private partnerships to address psychological, behavioral and social consequences of bioterrorist attacks as they present in the workplace and affect the continuity of national enterprise and productivity.

3. Policies must be developed that ensure that the public health and mental health infrastructure remain funded. Historically, it has been difficult to sustain sufficient funding in the absence of further catastrophic events. Since the war against terrorism is expected to last decades, it is imperative that adequate funding be a high priority.

4. Roles and responsibilities for mental health, mental illness and behavioral response consequence management need to be delineated at the state, local and national level. National resources can be used for the development of models and templates of new

mental health care and interventions for the expected new patient populations and distressed communities. In order to conserve resources, it may be most efficient for the general education, training, preparation, and response templates to be developed at the federal level and modified to meet requirements at the state and local levels.

5. There is a need for a national information policy and local implementation plan that is developed in coordination with the states including rural representatives.

6. Funding decisions should reflect the critical role of mental health in assuring the continuity of society. The goal of terrorism is the degradation and destruction of the nation's social capital – morale, safety, and productivity. The continuity of an effective social and community organization must be given high priority. This is essential to preventing pathological psychological and behavioral responses to bioterrorism. The maintenance of economic viability is critical. Severe economic downturns have been associated with increased rates of psychiatric illness and suicide. Unfortunately, in times of lost revenues, state and local mental health services are usually among those agencies most highly affected, resulting in a decreased ability to provide services in the face of increased need.

7. Mental health infrastructure should be funded for surge capacity in the face of catastrophic mental health challenges like bioterrorism.

8. The role of Employee Assistance Programs associated with both governmental agencies and private businesses should be developed to provide additional resources to assist with public health and mental health interventions. In the case of bioterrorism, buildings remain intact but employees may fear returning to them resulting in increased rates of absenteeism and sick leave. Public and private business policies should be developed to facilitate a rapid recovery in the workplace following a biological attack.

9. Mental health interventions should be conceived, developed, and funded in a community support context. For example, the provision of instrumental support, e.g. assistance in finding childcare or alternative travel arrangements, represents an important opportunity to sustain resilience.

10. Policies related to reimbursement of health care providers and the use of volunteers are needed now. This requires the development of a consensus with health insurers.

11. Policies must reflect the medical infrastructure, logistical capacities and personnel availability. These matters will determine the medical community's ability to respond. These include: a critical shortage of nurses nationwide; accreditation requirements for disaster response; mandatory overtime; the capacity to expand beds, distribute medication in and out of hospital; and maintenance of records in mass casualty situations.

12. State and local policies must address the psychological and behavioral consequences of instituting quarantine, distributing limited resources, mandatory treatment and the use of investigational drugs. Legal, political and medical issues will interact to create opportunities for chaos and conflict.

13. Mental health and behavioral expertise and planning are needed in preparation for potential agricultural bioterrorist attacks. The effects of foot and mouth disease in the UK demonstrate the important role of mental health programs for veterinarians, farmers, and ranchers where economic and emotional losses result from bioterrorist attacks.

14. Coordination between health care resources, political offices, and public affairs is needed in an ongoing and sustained program. After a bioterrorist attack tensions will be high between the scientific world and the political world, e.g., in the scientific community, good science is a goal whereas for politicians, good will is the goal. Effective collaboration will require a history of cooperation.

15. Training scenarios should include multiple attacks on multiple targets, for example, bioterrorism in association with cyberterrorism to model likely behavioral and mental health effects on communities and locales.

16. A relatively small investment in the states directed to coordination of activities can be leveraged to produce effective planning and response. For example, earmarking funds for each state to hire a full-time mental health person to design and participate in planning would further the incorporation of sound psychological and behavioral knowledge.

17. The current crisis can provide an opportunity to more closely integrate research with programmatic needs of clinical care for bioterrorism. Institutions like the Center for Disease Control (CDC) and the National Institute of Mental Health (NIMH), the National Institute of Occupational Safety and Health (NIOSH), the Veterans Association (VA), and the Department of Defense (DoD) could collaborate in joint ventures designed specifically around bioterrorism preparation, response, and health care needs.

18. The CDC's epidemiological investigation service should be augmented to include behavioral scientists (to include psychiatrists, psychologists, social workers, and others) to provide observational data and, where possible, mental health surveillance instruments for those most affected or at risk.

Mental Health & Behavioral Planning

1. Public officials should anticipate community beliefs in conspiratorial theories after a bioterrorist attack. These will extend beyond the objective evidence provided by the investigation of the attack and intelligence agencies. Scapegoating, paranoia, and stigmatization are expected reactions to a terrorist attack.

2. Rapid and accurate tests to diagnose illness are significant ways to diminish the anxiety that ripples through the nation after a bioterrorist attack. To the degree there are clinical symptoms that distinguish bioterrorism and the usual organisms that create

illness, the public can be educated so they can assess the need to seek medical assistance. In the absence of such discriminators, reassurance will be much more difficult and may prove to be false.

3. If bioterrorist events create significant damage to the economy, there will be a second surge of mental health consequences affecting a much broader spectrum of people. Studies of severe economic downturns have demonstrated that they generate substantial mental health morbidity.

4. The number of conditions under which quarantine is effective is small. In view of the profound behavioral and social difficulties that may result from such actions, guidelines should be developed that delineate under what circumstances it will be used and how it will be instituted as part of bioterrorism preparation. These deliberations will be more effective if public constituencies are included to help develop the plans and articulate the multiple behavioral responses that will occur.

5. Mental Health acute surge capacity and ongoing service resources must be evaluated. Disasters also produce a surge of health care need from those suffering from psychiatric disease as support systems are lost and stressors increase. Resources must be available when endemic psychiatric illnesses present for care in surge form. Such high-risk groups require specific preplanned community interventions. Children and the elderly are also at high risk. Counseling resources from schools, EAP personnel, and retired mental health professionals should be included in state and local response plans as supplemental professional caregivers.

6. The purpose of terrorism is to create terror. Strategies are needed to mobilize positive action as in past civil defense programs in order to promote resiliency and recovery.

7. The mental health skill sets for interventions following bioterrorist attacks need to be specified across the various mental health provider disciplines. Training and education programs must be developed. Where possible, these should be based on evidence-based practices and should span the continuum from early crisis counseling interventions to longer-term care for those who develop psychiatric disorders.

8. The mental health community should determine how existing hotline models can be adapted and used for effective interventions with an anxious public.

9. Interventions should target promoting group cohesion and solidarity. Frightened people can frequently be reassured if provided the opportunity to help others. People who are terrified worry only about themselves and are isolated. Viewing one's self as part of a high functioning group facilitates effective responses that are balanced between one's own good and the good of others. Local institutions and help groups can be vehicles for this program to foster social cohesion and decrease fear.

10. Methods of delivering mental health care that minimize requirements for logistical support must be developed. The use of video teleconferencing for consultation, telephone therapy, telepsychiatry and other means of providing care from a distance

should be examined. These methods of providing support may be particularly useful in the case of an attack with a contagious organism.

11. All plans should include contingencies for providing care in circumstances in which electrical power and complex technology is not available or not functioning.

12. Mental health interventions should include broadly conceived individual and group interventions and policies for improving function, fostering resilience and providing hope. The design of memorial services and when and how to return workers to an anthrax-exposed workplace are examples of this broader context.

13. Prior planning, education, and realistic training drills are needed to reduce the risk of panic in professional groups. While panic is rarely seen following a disaster, small professional groups managing the bioterrorism response may confront overwhelming demands and be at high risk for group breakdown and panic.

14. The mental health community should work closely with the clergy. Members of the clergy are an integral part of the medical and mental health disaster response teams. The clergy, like other caregivers, should be particularly prepared to help victims bear the unbearable.

Communication

1. Physicians require education on working with the media in order to establish comfort and credibility in advance of a bioterrorist attack. This expertise must be developed in the nation's small communities as well as at the regional and national levels. To this end, it is incumbent on those who will serve in these roles to limit their comments to topics in which they possess professional expertise. Physicians must develop relationships with the media in advance of an attack so that trust and familiarity is already in place.

2. Communications with the public must be bi-directional. "Bottom-up" grassroots solutions, as well as top down solutions are always needed. Experts need to engage the public in dialogue.

3. Different communication strategies should be developed for those who are affected by multiple events that occur over time in contrast to single, time-limited catastrophic events. Communities which have suffered multiple catastrophic events, e.g., those living in the NYC and the Washington DC area who experienced the terrorist plane attacks and then the anthrax attacks, have different information needs than those living in more distant areas.

4. The mental health community must work to ensure that journalists have ready access to recognized experts in order to help them discriminate amongst the outpouring of "experts" that inevitably occur after a disaster. The media play a prominent role in

disseminating information. For journalists there will always be a tension between accuracy and speed. Similarly, for public health officials there is a tension between the need to be in control and the chaos that is inherent in a terrorist attack. These groups must work together to ensure that accurate information is released to the public.

5. The influenza and chickenpox seasons offer an opportunity for the medical community to assist the public in self-triage and to establish workable messages that are effective for various populations with fears of infection and contagion.

6. Efforts must be made to develop health-related slogans that can be useful to the public in preparation for natural and deliberate infectious disease outbreaks, e.g. "Wash your hands and stay healthy". Specifically there is an urgent need to develop a proactive ad campaign against terrorism. Historically, slogans have captured the public's imagination with simple advice (e.g., "Loose lips sink ships", "Only you can prevent forest fires").

7. Journalists are at high risk for psychological trauma through their coverage of violent events or as targets of terrorism, themselves, as in the recent anthrax attacks. Efforts should be made to work with the media in ways to promote resiliency and facilitate their ability to report objectively and accurately.

8. Multiple and often not considered information vehicles are important for information distribution before and after a bioterrorist attack. The media is more than primetime news, mainstream newspapers, and radio. Additional audiences obtain their information by watching WWF, MTV, reading tabloids, and accessing the internet.

9. There is a pressing need for repeated retreats and ongoing dialogues with journalists in order to facilitate candid exchanges where concerns about bioterrorism can be examined. These opportunities can provide physicians and public health care providers useful insights about communicating with the public. The goals of such a meeting should include developing a common strategy for controlling false rumors, and developing educational messages for the public.

10. Educational experiences should be offered for journalists on the issues of biological, chemical, and radiological/nuclear threats. Ideally, these experiences should include "hands on" training. For example, wearing protective gear worn by first responders or working in a laboratory to see how anthrax testing works.

11. Local and national public information strategies should be built around the journalistic formula, "Who, what, when, where, why, and how?" (i.e., What's the message?; To whom?; What do we want the public to do?; What do the people want to know?; and How can people be empowered to contribute and overcome their own sense of helplessness?).

12. State and local agencies should provide a central website that offers links to the best internet information about bioterrorism health issues. This central site requires ongoing updates if it is to be of maximum value. Continuous information about the accuracy of websites is needed.

13. Funding is needed to adapt information developed at national conferences for states and communities. Local mental health providers can become linked with the local media, for example appearing on local talk shows and call-in radio programs.

14. Local, state and regional authorities need to identify local authorities/experts who are seen as highly credible in their communities and link them with local media, talk shows/call-in programs.

15. Attention must be paid by public officials and business leaders to using language that is helpful to responding during the current war. Those killed in terrorist attacks should be referred to as "casualties" rather than "the dead". This reinforces the fact that in the war on terrorism, all Americans are integral to defending the homefront. Better terms can be developed than "return to normalcy" which contributes to the public's sense of mixed messages and "worried well" which may lead to stigmatization and improper triage.

Education & Training

1. Leaders at the local, state, and national levels need to be educated about mental health and behavioral issues in preparing and responding to bioterrorist attacks.

2. Education of local leaders must address the widely held belief, "It may happen in major cities, but it won't happen here".

3. Leadership at local, state and regional levels as well as in the private sector requires education about the psychological and behavioral implications of crisis management. For example, they need to explicitly recognize the long-term consequences of manning decisions and the negative consequences of overdedication to work in a disaster (e.g., exhaustion leading to errors of decisions and behaviors that put people at risk).

4. Education and training of primary care providers on psychological and behavioral responses to bioterrorism is a critical priority. The direct effects of traumatic events on mental health and the effects of chronic stress on most medical problems (e.g., diabetes, heart disease) are important for accurate primary care health provision.

5. Leaders must be educated about the challenges of bioterrorism for the current mental health system and its lack of surge capacity. They must also be taught the importance of sustaining support for the long term to assure social cohesion and continuity of the community and the nation especially during times of fiscal crisis.

6. Public leaders, the media, and entertainers need to be educated about the expected problems produced by stigmatization and conspiratorial theories in the wake of catastrophic events. For example, jokes about Arabs may contribute to stigmatization against certain groups of Americans rather than channeling anger at terrorists.

Decision Support: Data Acquisition for Health Surveillance & Program Development

1. Mental health surveillance must be a standard part of post-bioterrorism responses. It is essential to provide "real time" assessments of community perceptions, fears and symptoms in order to monitor changing mental health needs and to adjust resources accordingly. Often media surveys have provided this with varying accuracy and utility. At times private foundations (e.g., Pew Foundation, Kaiser Foundation, Rand) have provided more useful and critical information. Telephone and preplanned internet sampling offer new and rapid information for local decision makers and planners. Traditional information resources such as school absences and work sick days can be collected in a central source.

2. Educational programs for state, local, and national leaders and responders are needed to increase knowledge of the factors that contribute to people's sense of safety. Incorporating these into plans and community programs is a critical translation of knowledge into policy. Similarly, we must learn more about what factors promote altruism under difficult circumstances, e.g., what would motivate people to cooperate with quarantine?

3. There is an urgent need for epidemiological studies of mental health responses to terrorism and the effect of ongoing terrorist threats on mental health and behavioral service needs.

4. Services evaluation should be required of all mental health interventions following bioterrorist events in order to plan for subsequent attacks.

5. Research should identify unrecognized high-risk populations (such as the bereaved parents of adult children) in order to develop specialized intervention programs.

6. Research should delineate valid community wide measures of mental health (such as the rates of prescriptions for psychotropic medications, alcohol use, school and work absences) that can be incorporated into surveillance programs.

7. Surveillance and reporting systems currently in place should be examined for expansion to include information on infectious disease and mental health surveillance in hospitals, schools, and outpatient health care settings.

8. Templates for collecting mental health surveillance data and developing useful databases should be developed at the national level and then adapted for the regional, state, and local levels. This will maximize our ability to learn from events by collecting standard information.

9. A detailed taxonomy of disasters including bioterrorism should be developed. Common and discriminating elements associated with various events can be identified. Contextual issues such as the type of attack, magnitude of destruction, and characteristics of the perpetrators and victims are also important information from which to anticipate behavioral and mental health responses. Other contextual issues such as the social, political, and economic conditions pre- and post event as well as a description of the extant mental health infrastructure are important.

10. Lessons learned from the events of September 11th and the anthrax attacks should rapidly be distributed to state and local areas by multiple means. These lessons should be incorporated into response plans.

11. Understanding the neurobiology and health issues of resilience in the face of traumatic events requires support. Understanding the course of neurobehavioral change and the impact of psychosocial and psychopharmacological interventions on this process is critical to planning for mental health care and assuring continuity of society and community.

1

INTRODUCTION

Robert J. Ursano

DR. URSANO: I would like to introduce the people that organized this meeting. Dr. Ann Norwood is Associate Chairman of Psychiatry at USUHS. Dr. Carol Fullerton is a research psychologist with numerous publications in the field of disaster and trauma psychiatry. Dr. Molly Hall was former consultant to the Surgeon General in the Air Force and the Director of the Consultants to the Surgeon General in the Air Force. She has experience with disaster organizations. Dr. Robert DeMartino heads the office that will be receiving our recommendations and passing those on to others who can implement them, and has been working extensively in New York on the recent events. Jennifer Stecklein organizes administrative aspects of the conference. Lastly, Dr. Alan Radke is the Director of Mental Health for the State of Minnesota. He is formerly an Army officer and Director of Residency Training at Walter Reed Army Medical Center. Due to a strike in Minnesota, he is unable to attend.

I want to remind everyone of the wonderful resources here in this group and the tremendous scholarly and practical experience many of you have on these topics. Last night we reached rapid consensus about the importance of making use of networks and networks in the community. The question of how to do that and which networks is a whole other issue. Our focus is on behavioral and mental health issues, therefore, we are going to be talking very broadly about many issues and the behavioral implications of this. We are not addressing everything involved with bioterrorism. The expertise we do bring to the question are what issues involve behavioral -- and notice I say "behavioral" -- and mental health, and that includes population as well as patient, but it is behavioral. We will now go around the table so people can introduce themselves.

DR. URSANO: Bob Ursano, Professor and Chairman, Department of Psychiatry, Uniformed Services University School of Medicine.

DR. CLIZBE: John Clizbe, Vice President of Disaster Services for the American Red Cross.

DR. FLYNN: Brian Flynn with the Federal Center for Mental Health Services, part of the Department of Health and Human Services. I am Director of the division that includes our disaster and emergency response activities.

MR. NOVINSKI: Mike Novinski with the state of Illinois Disaster Response Coordinator, Office of Mental Health.

DR. PFEFFERBAUM: Betty Pfefferbaum from the University of Oklahoma, Health Sciences Center.

MR. THOMSON: Tom Thomson with the Oklahoma Department of Mental Health and Substance Abuse Services.

DR. FULLERTON: Carol Fullerton, Associate Professor, Department of Psychiatry, Uniformed Services University School of Medicine.

DR. VEENHUIS: Phil Veenhuis, Medical Director of the North Carolina Division of Mental Health, Developmental Disability and Substance Abuse Services.

DR. OLDHAM: John Oldham from New York. I am Acting Chairman of Psychiatry at Columbia, Head of the Psychiatric Research Institute there, and also Chief Medical Officer for the New York State Office of Mental Health.

MR. ARMISTEAD: Bill Armistead, Disaster Mental Health Coordinator with the Virginia Department of Mental Health/Mental Retardation and Substance Abuse Services.

DR. WALDRUP: Ken Waldrup, a Veterinary Epidemiologist with the Texas Animal Health Commission.

DR. ENGEL: Chuck Engel, Psychiatrist, Epidemiologist, Associate Professor, Uniformed Services University School of Medicine.

DR. TINKER: Tim Tinker, Vice President, Science and Health, Widmeyer Communications, also an Adjunct Faculty in the Department of Psychiatry, Uniformed Services University School of Medicine.

DR. SHAW: Jon Shaw, Director of Child and Adolescent Psychiatry at the University of Miami School of Medicine.

DR. SCHREIBER: Chip Schreiber with the UCLA Trauma Psychiatry Program, and we're now part of the National Center for Child Traumatic Stress.

DR. HOLLOWAY: Harry Holloway, Professor of Psychiatry and Neurosciences at the Uniformed Services University School of Medicine.

DR. MARLOWE: David Marlowe, Department of Psychiatry at the Uniformed Services University School of Medicine.

DR. SCHOCH-SPANA: Monica Schoch-Spana, with the Johns Hopkins Center for Civilian Biodefense Studies.

DR. GLOVER: Bob Glover, Director of the National Association of state Mental Health Directors.

DR. HOGAN: Mike Hogan, Director of Mental Health in Ohio.

DR. PEELE: Roger Peele, Chief Psychiatrist, Montgomery County.

2

LEARNING FROM THE PAST: THE 1918 INFLUENZA PANDEMIC[1]

Monica Schoch-Spana

DR. URSANO: Tonight we have the opportunity to begin to think about the area of bioterrorism and how the past can inform the future. We often forget that history offers the opportunity for us to do science. By examining history, we have the opportunity to see what has happened in the past, what questions have occurred, and, hopefully, to identify what questions we should be addressing in the present.

Infectious outbreaks are not new. We are only beginning to tap the resources available historically to understand the present planning needs for the questions of bio-terrorism. The influenza epidemic is one of those historical events which can help inform the present situation.

Dr. Schoch-Spana is a medical anthropologist and Senior Fellow with the Johns Hopkins University Center for Civilian Bio-Defense Studies. She trained at Bryn Mawr and Hopkins. The center that she is associated with, sponsored by the Hopkins School of Public Health and Medicine, has been involved with informing policy decisions and promoting practices that help prevent the use of biological weapons. She is former Editor of the Bio-Defense Quarterly, and has written on the implications of bioterrorism for preparedness of the 1999 New York City West Nile Virus outbreak and the 1999-2000 influenza season burden upon hospitals. Her presentation this evening will be Learning from the Past: the 1918 Influenza Pandemic.

DR. SCHOCH-SPANA: The message we can take away from the 1918 and the 1919 Influenza Pandemic is that there is a basic resiliency of communities. Why look at 1918? It provides an opportunity to examine an outbreak of infectious disease with catastrophic effects in city populations and the reverberations of that particular outbreak. This is important since the scenario of greatest concern to policy makers in bioterrorism preparedness is an outbreak of such lethality and speed that it could affect our ability to stop its worst effects and would inhibit our ability to take care of the sick

[1] See Appendix 1 for slides.

and dying and to contain disease. I am going to put us in a worst case scenario mode because we can take a great deal away from this.

Why do I have something to say about 1918? Two and a half years ago I went through local newspapers in Baltimore, the Baltimore Sun, (which had a morning and an evening edition), The Afro-American (a weekly publication which served the African American community of Baltimore) and The Methodist. I followed them from March of 1918 to December of 1919 in order to capture and examine more carefully what were the three waves of disease in Baltimore City.

I want to open with general information regarding the epidemiology and the clinical aspects of Spanish Flu, and then talk about its catastrophic effects in Baltimore. The experience in Baltimore City can stand in for the experiences of a number of cities. Lastly, I will draw out implications for today.

There were three waves of illness associated with Spanish Flu. In the spring of 1918, a moderate outbreak of disease started among military recruits in the Midwest and the Southeast and moved through the civilian population and then began to circulate abroad and finally globally. In the fall of 1918, there were outbreaks of incredibly lethal disease in the major port cities, including France, Boston and Freetown in Sierra Leone. It took four months for this new, more virulent form of the virus to circle the globe. When historians look at 1918, they focus generally on that catastrophic wave of disease in the fall of 1918. There was a third wave that lasted into the winter and spring of 1919, but its effects were minimal compared to the fall.

The estimates we have for the number of cases and deaths for 1918 and 1919 are conservative because of incomplete reports of cases and deaths, deaths which were not correctly attributed to pandemic flu, and the limited Census practices and death certificates of the day. We know that 28 percent of the American population became sick with Spanish Flu, and there were 550,000 deaths. The estimates for global losses are incredible. One out of every two people of the globe became sick, and the number of deaths has been estimated to be 21 to 40 million. The case fatality rate that has been proposed or estimated for this pandemic is 2.5 percent, but that represents the developed world. When you look at deaths in other countries the 2.5 percent fatality rate does not capture the loss of other countries. India suffered about 4,200 deaths per 100,000 in comparison to England, which suffered 490 deaths per 100,000. There were disparate effects in this pandemic. Another unusual feature of the Spanish Flu is that it tended to sicken the young, the age group of individuals who were not normally bothered by influenza, the 20-40 year old age bracket. The pandemic flu was raging during World War I. There is an interesting statistic that more Americans, both civilian and military, died as a result of Spanish Flu than American soldiers who perished in battle during World War I, World War II, the Korean and Vietnam Wars combined.

Disease in the fall of 1918 came on suddenly and swiftly. There were three manifestations of the illness. Some developed a mild form of the illness and recuperated fairly well without much medical care. Some developed a more typical case of flu and suffered from bacterial pneumonia, and they either perished or had a terrible

convalescence period. The convalescence among survivors was protracted. They had fatigue, weakness, and depression for weeks. The third form of the illness, that was written about a great deal in the news reports of the time, left patients gasping for breath with an ashen, purplish countenance due to extreme oxygen deprivation. Their death could occur within hours or a day. This image captivated people. Upon autopsy they found evidence of hemorrhagic pneumonia. There was a range of illness at that time and it was the severe form, the quick, swift death that people remarked upon in the news reports.

The severity of illness took everyone by surprise, and people were trying to make sense of it. Where did this come from? It was baffling to both experts and lay people. Some of the proposed origins that the experts were offering at the time included the Pfieffers bacillus, which had been cultured during the pandemic in 1889 and 1890. With all the migrating Chinese laborers from a country with Plague outbreaks going on, perhaps it was the Plague. There were certain bacteria that had been cultured from specimens taken from the victims of 1918, and it was hypothesized that this must be the pathogen they were bringing upon us. There was a hypothesized microorganism, the filterable virus, proposed because in the laboratory they could filter out all known microorganisms and still have after that something infectious so there must be something else we can not see that is causing this.

Now the more popular explanation was that people were suffering as a result of a foul atmosphere that was produced by World War I's rotting corpses, explosions, and mustard gas. You will recall this was a period in history when miasmic theories of disease were still prominent. Some individuals proposed that it was the impoverished conditions that had existed prior to World War I but were exacerbated by the scarcity of the time. There was a proposal that there had been a covert release by Germans of a biological weapon. The U.S. Public Health Service had investigated the proposal that Bayer Aspirin had actually been contaminated and that was the way in which Germans were trying to topple the United States. The U.S. Public Health system did tests on Bayer to alleviate concerns that this is not the cause of our distress.

Also, there was a proposal that it was due to our moral laxity that this war came upon us. During this period in history scientific medicine was still attempting to assert its authority in explaining matters of health and illness. So we had a germ theory of disease competing with a sin theory of disease, and during the pandemic flu there was a great deal of debate as to who was the healer. Was it a medical man or was it God? And there were dramatic conflicts between religious leaders (particularly in communities where the health commissioner decided to shut down the churches), incredible conflict between pastors and health officials in shutting down the churches because it was depriving people of solace at the same time that it was elevating medical men over a healing Christian God.

In terms of the health effects for Baltimore City, we can see evidence in this epi curve of the second and third waves of disease. Now, the second wave occurred in the fall of 1918, and the largest number of cases occurred September 30th to October 20th. For Baltimore City, two of every three deaths related to Spanish Flu occurred in the

month of October alone, so the City had 3,100 deaths on its hands in the month of October, and the population at that time was 600,000. So we are looking at half a percent of the total population, the number of deaths occurring in one month.

There was a third wave that occurred in the winter of 1919. There was a spike of cases that started to commence in mid-January and went through February. In that particular spike there were fewer deaths. That could be due to a less virulent strain of the virus which had mutated and was not as potent as what had been circulating in October, and also there were fewer people who were susceptible to it because of the first time.

I work with infectious disease doctors and epidemiologists so I see many epi curves. I am a medical anthropologist, so when I went through the Baltimore data I found episodes of social reactions. When we deal with individuals who are interested strictly in the biological phenomena it is important to express to them how it is tied up in social phenomena as well because we are dealing in a topic that commands a multi-disciplinary perspective. By looking at the chronology of experience within Baltimore City you are able to see these types of episodes. To begin with we have a state of denial. We can consider this a period of insularity, security and familiarity. In mid-September, there were already reports of military camps outside of Baltimore City, and in Boston there were large numbers of cases and deaths starting to mount, but we had local officials declaring, and journalists writing, that the problem was elsewhere, it was influenza season, do not get worried, there is nothing unusual going on here, and that we are not expecting a local outbreak with serious effects. Very quickly, by the end of September and the very beginning of October, you have cases mounting, deaths starting to occur, and people thrust into the reality that something was going on.

The Baltimore City Health Commissioner at the time did anticipate a problem but was very afraid of alarming people. In addition, there was a model of disease resistance at the time that your mental state could affect your vigor and vitality and ultimately result in your being unable to resist disease. So he did not want to put people into a state of what he called fear and excitement that would lower their energy levels and their resisting power. That is one of the reasons why the City Health Commissioner said "I am not going to alarm people because it may make them more susceptible to something when it shows up."

We have a spike in this period I will call devastation-a conceptual gap between the uninfected and the infected. It is obliterated now because we are dealing with real sickness. We had the cases first start to show up in the military camps around the City and the civilian work force that came into contact with the military personnel and then came home. It was in the camps, the civilian workers and their families and neighborhoods, where they tended to cluster, which were in eastern and southern Baltimore, where they first saw the Spanish Flu. The north and the west actually saw Spanish Flu later than those neighborhoods.

In October we got conditions where the health system is overwhelmed. We have government services being impaired. We got the work force, whether it was private

sector or government, not being able to perform their duties and much familial hardship.

When cases started to taper off in mid-November, about the same time that the end of the war was declared, there was this incredible sense of relief that they were in a state of recovery, evidence that the disease was going away, additional respite in the fact that the war was declared over, and official reports documenting this decline. The news reports were saying things are better now and we are moving more towards normal times. At the same time, there was a journalistic fascination with numbers of cases and numbers of deaths. There was constant reporting during October and for all the months subsequent into March of 1919. Even though these numbers were not reliable, it was the way in which people were trying to make sense of an incomprehensible event. The trouble with the numbers was that if there was ever any small indication that cases were going up, there was speculation in the press, and we can infer among individuals reading those reports of "Oh, my God, are we returning to the conditions that we saw in October?" Even after this period of relief, you find this constant level of anxiety that we could be going back, and that was fueled by this constant accounting of cases.

In the period of anxiety and blame, we have a spike occurring in mid-January. The headlines read something along the lines of, "We have not seen these numbers since October", and that was a constant headline or, "750 new cases we saw this the third day in October." There was this constant going back to October as the benchmark against which all else was going to be judged, all subsequent experience with the disease was going to be judged, and fear about that. That third wave in mid-January and February was actually a mild wave of illness and people were relieved when it began to taper off. What was interesting is how people's experience with other illnesses was affected by their experience with Spanish Flu. The season for Scarlet Fever began around the same time that there was a spike in influenza cases and parents were very concerned that their children were sick with flu. They were not worried about Scarlet Fever and the Health Department was trying to educate them about how you have got to pay attention to Scarlet Fever. If you see a rash, you have got to call your physician. Spanish Flu was the dominant illness and blocked out people's awareness about other illness and appropriate responses.

In the one-year anniversary of the terrible month of October, Baltimore City was ready for flu should it have come back in October of 1919. They had an emergency hospital. They had struggled to put one together in October of 1918. City departments were coordinated. The Mayor had brought them together and said, "We have to coordinate better than we did in 1918." There was all this preparation in place and the apprehension of the anniversary of October of 1918. It was a normal flu season so there was a sigh of relief and the Health Department put out a declaration that we have returned to normal times.

I wanted to take you through the whole experience of Baltimore City. I do not mean to normalize this epidemic but I think it is helpful to see how this pandemic played out over a longer period of time. Most of the focus in the literature is strictly on the fall of 1918 and we do not see its long-term effects. The mayor was criticized in

terms of an adverse effect of this pandemic. The poor public health records of the City tied up 1918 with the incumbent Mayor during the mayoral race. The campaigning began in March of 1919 and he came under incredible criticism regarding what occurred in his City and was not re-elected.

I want to go through some of the features of the period of devastation. I know we are focused here on the response by local and state government, so the greatest burden, at least for pandemic flu in 1918, occurred in that period. It was an acute state of response but I do not think we should lose sight of the after effects of the pandemic flu. You will recall that one out of every four Americans was sick. That means every job category was affected by that statistic. Postal workers, sanitation workers, and members of the court were sick, and if they were not sick they were probably home tending to someone who was sick in their family. Very quickly the major burdens on the infrastructure, communication, transportation, the mail system, and food supplies, were interrupted and industrial production in the war effort was interrupted by pandemic flu. The telephone circuits were overloaded and a plea was put out in the newspaper by the phone company for old, retired members of the work force to come in and help because they were so desperate for people who knew how to work the telephone system. In fact, for a variety of occupations there were pleas for people to come in and take their place. Various firms were shown in the newspaper, whether it was the ship building industry, or the telephone system, or medical workers.

There were three things that were virtually unobtainable in October 1918: a willing mortician, an affordable yet decent coffin, and a prepared grave. There were so many bodies, (3,100 in October), that the burial industry simply could not handle that number. We had bodies stranded at homes because there was no where to take them and coffins accumulating at cemeteries. Cities took desperate measures to try and bring together the tools they would need to bury the dead with decency. We had Philadelphia commissioning coffins from local woodworkers, Buffalo producing its own, and Washington, D.C. seizing railroad cars with coffins en route to Pittsburgh. It had come to that level. In Baltimore City there were four area cemeteries that were set aside for the exclusive use of the African American community. The most egregious example of coffins accumulating happened at one of those four cemeteries, Mount Auburn. In October there were about 150 unburied coffins that stayed in the cemetery for about three weeks until a detail from Camp Meade was sent up at the request of the Mayor and of the Red Cross to take care of it. There were emergency interment measures such as mass graves and families digging graves themselves that helped undermine the prevailing sense of propriety. If you look at the oral histories, in almost every recollection of 1918 from Baltimore City, at least in the collection of the Maryland Historical Society, there was this dominant image of the unburied coffins. This became, we can infer, a symbol of the country's inability to function normally. This seemed to be an overriding symbol.

The health care system was in crisis. A third of the doctors and even more nurses were serving overseas so we were already dealing with a lower number of medical personnel here at home when this hit. Like the patients they were treating they became sick and some of them were consumed by concern over contagion, not large numbers,

but enough to reduce the number of medical personnel available. Hospitals were experiencing incredible shortages of personnel, space, and supplies. There were no treatments. There were no antibiotics. Supportive care was absolutely critical. Nurses were in profound demand.

What wartime did provide for individuals, though, were incredible networks through which people could come and volunteer their efforts. The Red Cross had already created incredible networks of volunteers to support the military overseas, and they were put to use during this incredible problem at home. They provided nursing, transportation of the sick, food to the convalescent, and also to families where the homemaker was not there or was too sick to cook, and also provided child care.

There was a story of how the doctors who worked at St. Agnes Hospital were stopped as they were going in and out of the hospital for their shifts by families who were offering the doctors money to just come home and take care of their families. That is how desperate people were to try and get these scarce medical professionals. The U.S. Public Health Service attempted to organize doctors who were unable to serve overseas and to deploy them within communities in need. Unfortunately, a number of hospitals in Baltimore City, particularly those in the neighborhoods that were worst hit, had to turn people away. One story talks about how St. Agnes never turned people away and they did whatever it took, at least as it is reported. St. Agnes had a normal capacity of 200 beds, but at the peak of the outbreak in October they were at one time assisting from 400 to 500 individuals. That was the type of capacity and that was just a single hospital. Common public spaces were being pressed into service as emergency hospitals.

As I mentioned earlier, supportive care and nurses were in incredible demand, and there were a number of ads, if you look in the want ads of the Baltimore Sun, where people were desperate to find the care of a nurse. This collection of ads became a symbol for the local community of how everyone was affected, even the most wealthy. They could not get access to nurses and there was commentary in the local newspapers about that. The Red Cross worked with the Public Health Service and the State Health Officer to try and pull together nurses.

We found the scope of the outbreak was elusive. There was no well-developed reporting system at the time. We had physicians who were so busy tending their patients that they could not report what was going on quickly to the Health Department. Health departments were totally overrun. Even if they got the reports, they did not have enough manpower to make sense of them. In fact, reporters were so desperate for reliable numbers about what was going on in the City that they started to go visit funeral homes themselves in order to piece together and to get the evidence to try and construct what was going on in the community. Some of the more troubling news reports that residents were reading were an unrelenting focus on numbers and the apprehension that any spike in the numbers was produced.

There was comment on the fact that numbers were going up at the same time the health department was saying, "Do not worry." There was a disconnect between two official messages and that was worrisome to people.

If you read the reports of the time, there seems to have been a lack of consensus within the community and across health departments on the East Coast about what was the appropriate step and what were the appropriate steps to take. Physicians in the Hospital Association of Baltimore were upset that the Health Commissioner was not acting quickly enough to do something to contain it, i.e. shutting down public gathering places very promptly. The Health Department in Philadelphia was doing something different from the Health Department in Baltimore and New York and people commented that there did not seem to be a cohesive plan to deal with this problem. They were putting together this diverse information. Many of the people in San Francisco were willing to wear masks during the second and most dramatic spike of the disease but when the third wave hit them they said, "Forget it." Civil libertarians were saying, "I am not going to do something involuntarily." Business owners were saying "If I have got people wearing masks they are going to be afraid and they are not going to shop." Vocal Christian Scientists were adamant about the trampling of their personal liberties due to the masks.

I mentioned earlier that there were incredible challenges given to the Health Commissioner by both lay people and religious alike such as the closing of the churches. A Pastor of the Methodist Episcopal Church wrote "Does it look like good judgment in the face of a disease that's spreading death and terror among people, almost equivalent to that of the Great War, to close an institution that was designed by Jesus Christ to bring comfort and help in the time of sorrow and need, while we allow an institution of the Devil to run wide open and thus add to the misery and suffering of many of our helpless people?"

There was a great deal of fellowship and community expressed during this devastating time. Large numbers of people were volunteering to aid the people in their neighborhood and across the city. There was a sense of shared sacrifice because of the war raging in Europe. This is all bundled up together, both the impact of the epidemic and the impact of the war overseas, and the sense that we need to get through this together as a community. There was social cohesion that was created as a result of this outbreak of infectious disease, and at the same time there was an incredible fear of contagion and normal displays of intimacy being interrupted. And there was flaming of preexisting social divisions and finger pointing. There was a great deal of anti-German sentiment at the time which manifested in rumors of Germans conducting acts of covert releases of biological agents. Also, at Camp Meade, that there was a German spy disguising herself as a nurse and going into the hospital infecting men there. The spies disguising themselves as nurses and doctors were national rumors.

The lessons we can take away from the period of devastation in 1918, coming from a medical and public health focus, are that we need to build the capacity to care for mass casualties, (which means protecting our most critical asset, people), having support and plans for hospitals as they are community beacons, and to deliverers of real material care.

What is interesting about the pandemic flu in 1918 is that most people were not cared for at a hospital. They were at home, sometimes out of necessity because the hospitals were closed to them, and there were incredible networks comprised of social workers from hospitals, visiting nurses, Red Cross volunteers, and in Baltimore City members of the Federated Charities, who came together to go and bring care to people in homes. It is that delivery system that needs to be thought through much more carefully today. We need to have more surge capacity in hospitals but we also need to have mechanisms by which we can tap the capacity of neighborhoods to take care of residents themselves, so that people can take care of each other. There needs to be more institution building and networking, in such a way that we can tap this capacity of the lay population to take care of itself, at the same time that we are also shoring up our hospitals. That is an important lesson to take away from 1918.

It is also going to be critical to characterize an outbreak quickly and promptly. People need information in order to make sense of an otherwise random and arbitrary imposition of suffering, and describing the outbreak is going to be important for Public Health officials and for physicians, because they need to gauge whether their interventions are working. Communities also need information about the scope of an outbreak, whether it is intentional or naturally occurring. They need to make sense of this individual and collective loss. To go back to this fascination of numbers in 1918, which continues today, the numbers are one way of trying to draw a border around this event and try and make sense of it, to contain it somehow, to give it a diameter, give it some material reality we can get hold of and contain in some way.

It will be absolutely critical to earn public confidence in containment and that means conveying consistent meaningful messages, in addition to providing for diverse audiences, their beliefs and languages. We talked earlier about this clash between a germ theory of disease and a sin theory of disease that was being played out, particularly, on the fault line of the closing of the churches. But there are going to be multiple and competing belief systems around illness that have to be brought into an overall, comprehensive response. All sectors of society need to be brought in and that means being attuned to the competing belief systems that are explaining the manifestation of illness and also to anticipate and acknowledge grievances and concerns. There was not a place for individuals to register their concern and grievance about the orders coming out of the Health Commissioner, no two-way communication or negotiation as a community about what were the appropriate measures to take other than letters to the editor in the Baltimore Sun.

Lastly, efforts will need to be taken to reduce the social casualties of an epidemic. To go back to the dominant symbol of the accumulating coffins, there will be a need to avoid mortuary practices that are seen as dehumanizing. The way in which the dead were treated was another sore spot for Baltimore City. There were incredible numbers of meetings with the Mayor, the funeral directors, members of the church, and lay people, to try and come up with a plan to deal with community-level problems and to protect against discrimination.

When I talk about pandemic flu in 1918, we need to recall that that infectious disease had a case mortality rate of 2.5 percent in the United States as we estimate it. When it comes to bioterrorism, we are looking at pathogens that have a case fatality rate an order of a magnitude higher. We need to learn a great deal from pandemic flu, but realize that when it comes to biological weapons we are looking at pathogens that have incredible potency and could produce incredible effects. Pandemic flu was incomprehensible to individuals in 1918 as they were living through it. These are the types of pathogens that we are looking at today.

DR. SHAW: You mentioned the media in the neighborhood and the healthcare to provide for the population. What we found in Dade County is that we could take 50 students, use the school and help normalize people's lives. They also could be sites for information dissemination and sites for providing treatment. What is their plan to deal with a bioterrorism event, where you might have a million or 2 million people exposed or being infected? They do not have a plan. Their plan is for a single aircraft disaster plan. And they have no concept of dissemination. They have no concept of decentralization of resources. I am wondering what your thoughts are about the school system as an infrastructure that can be used as a resource for providing information.

DR. SCHOCH-SPANA: Jon is mentioning the value of the school systems, in terms of a response to the disrupted lives associated with Hurricane Andrew. It provided a decentralized system for delivery of support, and these were familiar places for people to go to. I think they would be absolutely critical to a bioterrorism response effort as would be civic organizations, various social groups such as the Kiwanis or the Knights of Columbus, but what we have to do is build on other institutional mechanisms. We have to build on a medical and public health response. What I did not note about 1918 was that in addition to providing supportive care to individuals who were sick there was a great deal of other types of care that were being provided. People needed assistance with finding a funeral home that would take a body, transporting the body, assistance with food, and assistance with child care. When the parents were sick and children could not be taken care of there needed to be alternative child care. There were a lot of non-medical needs that were going on at the same time.

We must remember that people are part of other networks such as school systems, social clubs, work organizations, work networks, religious and faith community networks. They are already plugged into a number of institutions that are not necessarily written into emergency management plans as we know them today. It is going to take a decentralized effort. It is absolutely critical that we reach out to these non-traditional resources in a community which are already familiar to their users.

AUDIENCE: The other move for projection during this period were Reds and anarchists because we are talking about the period in which we immediately fade into the Red scare and the massive arrests in this country, and destruction. Is there any connection there?

DR. SCHOCH-SPANA: That connection was made more readily in Europe, but in the United States there was more of a focus on Germans. This was called the Hun

disease so there probably were instances. None of the reporting in Baltimore had this Red angle. The European reports did but it was the Hun disease.

DR. WALDRUP: I am a veterinarian, so I look at this from a different angle related to something actually fairly recent. I was involved in the foot and mouth disease program in the U.K. in the spring. The fascination with numbers is similar. Although it was not a public health matter, per se, some of the same things in my own experience and observation is there is some of the same effects on the social psyche, whether it is animal disease or human disease.

DR. SCHOCH-SPANA: Charles Rosenberg, an imminent scholar on outbreaks of infectious disease, proposes that there is a plot line of a classic epidemic. You have this first phase of grudging acceptance of a problem, like, "What are all these dead bodies?" People do not want to grapple with this or with a problem immediately. The first phase Rosenberg talks about is admitting the existence of a problem. The next phase of the plot line is attempts to contain the randomness of the event, to give some meaning to what is going on, and that there are struggles from different sectors of society to explain why this is happening. And then the next stage, according to this template, is attempts to define what the publicly visible act of containment is going to be, what is it that we, as a collectivity, are going to do to put a stop to this. Again there is a conflict about what is the right thing to do, but it is definitely visible. It is a public act of containment, like all the measures that were taken in foot and mouth disease. The gruesome imagery was also the spectacle of containment. Lastly, in Rosenberg's template there is a phase of retrospective judgment, where people look back and say, "Did we do the right thing?" "Who screwed up here?" There is an intense period of moral judgment after all the cases and the deaths, all the dust has settled, where people look back and are in this incredible finger pointing mentality. He has looked at a number of outbreaks, and I had only read this article about six months ago, and I had drawn what I thought was what the little episodes were of Baltimore City so I could make some sense of what was going on over a long period of time. Then I read the Rosenberg piece and I thought there seems to be some type of dynamic that repeats itself when it comes to outbreaks of novel disease with large-scale effects.

AUDIENCE: Bringing the past into the present and thinking about the episodes of social reactions, seeing parallels between the pandemic flu and what our experience has been since September 11th , in terms of denial of devastation, and reaction, and anxiety. One of the things that is most remarkable about the 1918 Pandemic is what did not happen. You are in Baltimore and people are dying all over the world from this and it is traveling up the coast. When it hits a military camp outside of Baltimore, why didn't people take off and go to Vermont or somewhere else? It sounds like a logical response, so why didn't people leave? That is one of the things that may certainly be worth our understanding. Clearly one of the dynamics of this was the fact that there was a world war, that our attention was turned towards something else, something even larger than us, a global struggle.

AUDIENCE: I heard a piece on NPR that addressed the issue that people do not like to leave home. There was a question posed about the urban myth that we are going

to flee New York and run to the small town in Vermont or Montana, and our business is going to fold, and we will move elsewhere because we could not work from home. The issue is that the people, New Yorkers are home, in spite of what has gone on, and I suspect that some of the same dynamic occurred back then. People do not really want to leave whatever their root structure is. In 1918 society was not nearly so mobile as now.

AUDIENCE: The parallel that I see now is the confluence of a world war and infectious disease. We are in the same boat now. I do not have a perspective yet on what that signifies with the Anthrax.

AUDIENCE: The one parallel that stands out in what you were saying is, this preoccupation around numbers. If there is a TV in the room with CNN, you look up and it is 31 cases, people with Anthrax found in the Capitol, and then one time I was in the gym it was 24, and then it was 31, and the body counts from New York. There is an effort to quantify and encompass this through an understanding through numbers, which is firmly entrenched in our culture, but I am not sure if this happened in Afghanistan that the same action would take place there.

AUDIENCE: People ought to consider that numerology was the beginning of mathematics for a number of purposes in astrology. Much of what we do in counting numbers we act like expresses rational thoughts. In fact, there is magic in numbers, numerological consequences of numbers. You can see that kind of phenomena now and in most of these disasters.

DR. OLDHAM: It is interesting to compare this with now, and there are many similarities that are interesting, but there are also very many differences. And, one of them is the phase of denial. There are two ways that you can look at it. The one big difference is the fact that this was an infectious disease outbreak, where there was an attempt to look for the enemy to blame. Here it is the other way around in the sense that we already know that this is evil, very localized, but it is malicious human intent. So the denial window that I saw in the New York situation was very, very brief, literally minutes, seconds, hours, when people could not accept the fact that this was happening, but rather, kept hoping it was an accident, a terrible disaster and an accident. Neal Cohen, the Commissioner of Health in New York, tells a very touching story of a friend of his whom has a young son, who said, "Daddy, if I had been that pilot I would have just turned the other way." This little mind was very creatively using denial and was not able to accept the malicious intent. The other point I want to make is that I think there is a long-term denial which you can only see when you look over time and are aware of a series of events, of the continuity there. We do not want to see that, we do not want to think about it and do not want to accept it.

DR. SCHOCH-SPANA: According to Rosenberg, the messengers are usually ridiculed and are the problem. They are usually ridiculed at the beginning.

3

THE THREAT OF BIOTERRORISM[1]

Randall J. Larsen

DR. NORWOOD: We are delighted that Randy took time from his extremely busy schedule to come and share some thoughts with us this morning. Randy is the Director of the Institute for Homeland Security at ANSER, which is a nonprofit public service research institute. He previously served as Chairman, Department of Military Strategy and Operations, at the National War College. He continues to teach as an Adjunct Professor. He was one of the people who put together the exercise "Dark Winter". Randy served in the Air Force and had 32-years of military service in the Army and Air Force. He actually flew 400 combat missions in Cobra gunships in Vietnam. Some of his other assignments included being a Military Attaché, a Legislative Assistant, a speech writer to the Commander-in-Chief of the U.S. Transportation Command, and the Commander of America's Fleet of VIP aircraft at Andrews Air Force Base.

MR LARSEN: The story of how I got involved in biological warfare reminds me of my favorite scene from the TV show "MASH" where Maj. Houlihan comes up to Capt. Pierce in a moment of frustration and says, "How did an individual like you rise to a position of power and authority in the United states Army?" And Hawkeye looks Hot Lips right in the eye and says, "I was drafted." And in 1994 that is how the Air Force sent me off for a year to get away from the Beltway, to get out of uniform, and to go out to a civilian university and think about the future of warfare and national security.

As an Air Force pilot I planned to study space-based weapons, or laser-guided bombs – something you would expect an Air Force pilot to do, and met a guy by the name of Ambassador Jim Goodby, who was also on a Fellowship. He was the guy who convinced the Ukrainians to give up their nuclear weapons and did a great deal of work with the Russians on their biological warfare program. Ambassador Goodby said, "Randy, if you want to look at something about the future of national security you really need to start looking at biological warfare." He convinced me to read a couple books – that was '94 – and I have been doing that ever since.

[1] See Appendix 2 for slides.

As a military strategist I have studied how a nation, state, or terrorist organization would use biological warfare against us. I believe the most significant aspects are psychological. We conducted a workshop at the National War College with Johns Hopkins about the psychological aspects of biological warfare. We looked at the responses to an anthrax attack on a Super Bowl. In the current world climate the psychological aspects of biological warfare are far more important, or far more effective against us than other aspects. It is the topic everyone is talking about. I have employees come up to me and say, "I have anthrax, I know it." One of the producers from "Larry King Live" called me yesterday and said, "Please do not tell anybody, but I know I have anthrax." It took me 30 minutes to calm her down.

For years, when I talked about biological warfare I had to convince people you could actually kill 100,000 people with this biological weapon. One of my research associates, Dr. Bob Kadlec, used to say, "Randy, you only have to kill one person and just let them know that." I have done some interesting things in my military career, but I do not think I was ever as terrified as when I was talking on the phone to someone a couple of weeks ago and he was watching TV and he said, "Wait a minute. Tommy Thompson is at the White House and he says there is a confirmed case of inhalation anthrax." It would have been interesting if I had been hooked up to a blood pressure machine at that time. I know my heart rate certainly increased. These are the sorts of things we are going to have to deal with now.

I always thought that maybe in five or ten years we might have to deal with biological warfare but it is here now. In the last two and a half years I have briefed approximately 1200 senior military officers about biological warfare. The most common response I get is, "No one ever told me about this before. I did not know that this was a serious threat." It is just something we have not looked at in the military. It is very different from the weapons of blast, heat, and fragmentation that we always focus on. One of the big lessons from DARK WINTER is trying to educate people from the public health community that have always looked at Mother Nature, how disease would spread, and understanding that the problem is far more difficult when you are dealing with a thinking enemy.

I also want to stress that public health is probably as important as the Department of Defense now in national security. If we assume the primary attacks will be from anthrax this should serve as a wake-up call about how much we need to prepare. My great concern is five to ten years from now. In order to prepare for biological warfare we put together the DARK WINTER presentation in January, 2001. Dr. John Hamre at CSIS originally wanted to repeat the Cincinnati exercise he did when he was Deputy Secretary of Defense involving a 10-kiloton nuclear weapon. He asked if I wanted to be involved, however, it had been done before so I declined. We already know a great deal about nuclear weapons. I can tell you how many people are going to die in two hours, two weeks, two months, or two years. I said I would like to do an exercise where we could look at crisis management, consequence management, and international response all at the same time. We thought that biological warfare would be the main way to test that. My actual area of research now is Homeland Security, however, due to my extensive background in biological warfare I

tend to use that scenario frequently because that brings in more of the inter-agency and inter-governmental challenges than any other threat we would face.

We began planning DARK WINTER in January, 2001, did a dry run in early June to test things out and conducted the exercise on June 22nd and 23rd, 2001. I have done a great deal of war-gaming in my career, but I have never had this many senior players around the table. Everybody there had been at National Security Council meetings. For those of you who do not know Peggy Hamburg, she was the former Health Commissioner of New York, and the Assistant Secretary of Health and Human Services in the Clinton Administration. George Terwilliger had been No. 2 in the Department of Justice, and at the time of this exercise was on the short list to be the FBI Director. Jerry Hauer was the former Emergency Manager in New York City. Every person that came through this – maybe with the exception of Peggy and Jerry - said, "I had never thought about these things before and just could not get my mind wrapped around the problem." It is so different than any other security challenges they had thought about over the course of their careers.

On the 20th of September, 2001, the White House asked to be briefed. We spent about 40 minutes with the Vice President giving him the DARK WINTER presentation. During that presentation he said, "What does a biological weapon look like?" And as I pulled this glass vile of [harmless] white powder out of my pocket I said, "Well, it looks like this, and I just carried it into your office. Now, this is harmless." Last week I had to brief the Chief of Indications and Warning at CIA and as I was filling out the paperwork before entering the CIA Headquarters I pulled this same vile of [harmless] white powder out of one pocket, looked at it, and put it in another pocket, and the guard just looked at it. Due to recent events I am going to have to quit doing that. In fact, I am flying to Pittsburgh on Monday to give three speeches and I am probably not going to carry this on the airplane because they are now taking packets of artificial sweeteners off the airplanes because they keep finding little things of white powder that people suspect may be anthrax. We need to be alert, but it is not going to bother me.

We weaponized Bacillus globigii and contrary to many of the misleading press reports what they got in the Senate was not the quality of this. Ours is as good as what the Soviet Union made, close to a 90% sporulation rate, very uniform, 5-micron size. The bad news is that this was made with equipment bought off of labex.com. It was a quarter-million-dollar government program and typical of many government programs they spent too much money. If they would have bought used equipment they could have done it for significantly less but they bought new equipment. That is one of the security challenges we are going to face in the 21st Century. You do not have to be a super power to make this stuff. Bacillus globigii, by the way, is nearly identical to Bacillus anthracis. If you can weaponize this you can weaponize Bacillus anthracis. Every nation that has weaponized Bacillus anthracis, including the United States, United Kingdom, Soviet Union, and Iraq, always weaponize this stuff first so if you make a mistake you do not hurt anybody.

That is one of the challenges. It is the long-term that I am really focused on. This summer the Defense Science Board released their report and said their goal is "Bug to Drug in 24 Hours." That really sounds like Buck Rogers kind of stuff right now, but imagine if I was talking to you here in 1950 and said, "In 20 years we want to put a man on the moon",

you probably would have laughed. So, it is amazing what we can do. And with genetic engineering is a goal we need to get to because in ten years we are not going to be talking about the classical eight agents, but we are going to be talking about things you can manufacture. When they asked Dr. Steven Block at Stanford whether we should destroy the smallpox samples he said, "I do not really care if you destroy them or not because in five years I will make new ones." These are some of the things we are dealing with. That is why I am far more concerned about the long-range. We spent a great deal of money putting a man on the moon. That is the kind of commitment we are going to have to do to make our nation secure in the future.

To give you an idea of an extreme case I will show a video clip from DARK WINTER. We picked a smallpox scenario to overstress the system. The purpose was to get lessons learned about where we need to make improvements in the system. It is not a realistic scenario, however, it is possible. We think North Korea does have smallpox and Iraq may have it. It was Al Queda terrorists operating out of Afghanistan, supported by Iraq and by a few former Soviet scientists, who had the smallpox sample. Three two-man teams entered the United States in late November. On 1 December they went to three shopping malls - one in Oklahoma City, one in Atlanta, and one in Philadelphia with small dispensers to release an aerosolized mist. The two in Atlanta and Philadelphia were pretty much failures. Only about 5 percent of the material was released in a cloud. These guys were not scientists they were just people sent here to push this button at this time in this shopping mall. However, the one in Oklahoma City was about 95 percent effective.

Despite the reporting you see in the New York Times that says "Millions died in DARK WINTER", it would help if they would read the material. We specifically designed it so the attack occurred on December 1st but the exercise actually began on December 9th when the first confirmed case came in and we took it through to December 22nd. When we ended the exercise 2,600 people had died. That was specifically less than Pearl Harbor but the psychological impact was enormous at that time. The economy had shut down. Transportation had shut down. All of the participants in the dry-run kept saying, "What does the American public know?" It was a good question. They wanted to know what the American public knew so that when we did the real exercise we went down to Reuters and made these phony broadcasts. We used these all the way through the game so the participants could see what the American people were seeing and hearing. It was a two-day exercise so when they woke up on Saturday morning they had "Early Birds" clippings that DOD puts out every morning that they could read and see that 48% of the American people were saying we should consider using nuclear weapons against Iraq to keep the game going.

The role of the media was one of the biggest lessons learned that came out of DARK WINTER. To make this realistic we had Jim Miklazweski, a Pentagon correspondent from NBC, participate as an observer; as well as Judy Miller from the New York Times and Mary Walsh, a CBS News Producer; a woman from the BBC, and a reporter from National Public Radio. They watched from the bleachers, so to speak, to see what happened. President Nunn conducted a 30-minute press conference in front of these folks, which was very difficult for him because the press had watched everything that took place and then he had

to do a press conference which he thought was a little bit unrealistic, but we wanted to make it very challenging for him.

There were great debates about what people were going to say to the media and to the American people. In the exercise we observed an interesting difference. Nunn is a great national leader but he had spent most of his life in the Legislative Branch and he had a reputation for driving his staff nuts before a press conference because he wanted to know every answer, everything he could possibly be asked. In the Legislative Branch you can do that so you decide when that is going to happen or when you are going to introduce new legislation or some hearing coming up. Governor Frank Keating, who played Governor Frank Keating in the exercise had been through the Murrah Building, 27 tornadoes in one night, and a drought so he was used to this sort of thing.

President Nunn kept saying, "I do not have enough information yet." On the other hand Governor Keating said, "If you do not talk somebody else will. Now that you are on the Executive side you have got to get out and talk." I think this Administration stumbled a bit early on in our current crisis in responding to biological warfare. I understand that Secretary Thompson was in a real tough position. He has a fine line to walk between being truthful and not panicking America. I think he missed it a little bit on the 60 Minutes piece. And I base that on the phone calls. Right now three of my researchers do nothing but answer the phones. The typical phone calls we received the week after the 60 Minutes piece went something like, "I was not worried about biological warfare until I watched 60 Minutes, now I am scared to death." Using that as a measure that approach did not work.

I have been very impressed the last two days that Governor Ridge is up there now. The 1:00 pm press conferences have been very impressive. The first thing I like is that he is in charge of the press conference and he tells the Attorney General and the HHS Secretary when to talk. He is a combat-decorated Marine and a Governor. This was a very important part in selecting him for that role because so much of this is done at the state and local level. Here in Washington, D.C., people inside the Beltway seem to think they are in charge of everything, and that is just not true.

One of the big fights in DARK WINTER was, "Who is in charge?" Governors, Adjutant Generals, and State Emergency Planners will tell you that disasters are local issues. Look at the World Trade Center. You take away the law enforcement aspect and that is a city and state issue. It is no different than what a big earthquake would have been in Los Angeles. You had two big buildings fall down. Many people were killed. You need to go through all the steps you would after an earthquake, other than the law enforcement aspect of it. All too often we are spending too much money at the Federal level. I think we should put it down to the state and local level.

I do not know how familiar you are with weapons of mass destruction civil support teams but we were supposed to get ten for a cost of $18 million. We are now getting 37 and they each cost $10 million. They are having a hard time certifying them. Most of that capability was already present in our HAZMAT units at the local level. All we had to do was spend a little bit of money to plus them up in order to give them some extra training and new equipment. They were already there and from a Capitol Hill perspective you are

still getting money back to your district. I think we could just spend it a lot wiser. Therefore, it is very important to keep in mind that much of this should be at a state and local level. One exception is the attack with a contagious pathogen and that was one of the big debates we had in DARK WINTER. Maybe we do need more national coordination.

I want to talk for a moment about biological warfare. I talk to a great deal of military crowds about biological weapons. People always say, "Randy Larsen is here today to talk about chem/bio." I do not know anything more about chemical weapons than any other retired Colonel. I spent my fair share of time in MOPP-4 chemical warfare gear. Just about the most uncomfortable thing you can imagine is to be in a rubberized suit in 100 degree heat. But if you say, "Randy Larsen is here today to talk about bombs", that is a pretty wide area. Some of the problem is, Secretary Wolfowitz, DEPSECDEF, asked the other day, "Are we prepared for a biological attack?" That is a broad question. What kind of attack are you talking about? Are you talking about somebody growing stuff in petri dishes and putting it in salad bars like the first biological attack we know of in the United States by the Rajneesh Cult. The answer is yes, we are pretty well prepared for that. Are we prepared for DARK WINTER? No. What we are going to see is probably going to be somewhere in between. But biological weapons, unfortunately, have the capability to be at this level. Chemical weapons are just more tactical weapons that are going to make a mess in a local area and cause some problems.

Anthrax is not contagious, but fear is. You can not spread anthrax over the Internet, however, you can spread fear. I've seen a lot of stuff going around there. You can spread it by e-mail. You can spread it over the telephone. The agent itself does not have to be contagious to cause problems in the United States. In a 50-minute biological briefing, I used to spend 35 minutes trying to convince people it was real. I do not think that is the case anymore. But this is the model we use at the National War College. People used to ask me what is the probability of biological warfare. We need to look at this model: capability x vulnerability x intent = threat. Something I use for senior military leaders is the fact that if you can make any factor zero then the product becomes zero. Some of those things we can control and some we can not control. Vulnerability is one that we are looking at. Defending military forces in a deployed situation is far easier than it is defending New York City or Washington, D.C.

Here is an example of one of the programs we are working on with the Department of Defense. Let's say I am an installation commander deployed out in the Kuwait Desert and my intelligence officer comes to me and says, "The Iraqis are moving some remotely piloted RPVs forward" – remotely piloted vehicles – "and we know they have the capability to use those. And we've got some signals intelligence that says they may have some biological weapons." My weatherman comes and tells me, "We have got a gentle breeze of about 12 knots coming this way from the bad guys' territory and, by the way, there's a temperature inversion up here at about 800 feet."

You do not see that as obvious as we used to in the old days before we cleaned up the environment. Remember in the old days, you'd see the smoke go and then go flat? That's a temperature inversion where it's not the normal rate. And you need that so that the particles you release just don't go into the atmosphere. And the sun is going down. You

don't do a biological attack during the day. So, I compute all these factors and go, "Hmm." This might be a problem. As a commander, you know, I'm concerned.

One of the problems we have in the Department of Defense, like many bureaucracies, is that they probably want the 100% solution. So, we are spending millions of dollars on all these sophisticated detection systems and whatever that are years away, but I have friends that come to me and say, "Hey, Randy, I am out there tonight. What have you got for my troops?"

Something that Bob Kadlec and I are working on is a mask. The testing is going on at Ft. Detrick right now for this. This is the sort of mask that you wear around tuberculosis patients. It is 99.97% effective down to .1 microns. Remember the biological weapons I showed you here is about 5 microns, between 4 and 5 is about the right size so it goes all the way in the small recesses of your lungs. When people ask me, "Should I buy a mask", I say, "Yeah, but you will need to wear it 24-hours-a-day to be effective." However, I am not talking about here in the United States, I am talking about deployed troops out there. However, you can not sleep in these masks. It is hard to fire your rifle, fix your airplane, etc. But a simple mask you can just wear. And think of the psychological impact it will have on your troops. You do not have to worry about biological agents anymore. You can sleep in this. And you can give this type of mask to civilians. These cost $6.00 when you buy them one at a time. The Government can get them for about 20 bucks apiece if they buy a million. This is a different challenge. I can change my vulnerability. If I put all my troops in these masks I can reduce the threat.

There are still some problems getting the right word out. Some of you probably saw Sunday when Secretary Cohen went from talk show to talk show talking about how his 5-pound bag of sugar could kill half the population of Washington. That is not true. Maybe if I could just get out 18,000 spores, which would fit on the head of a pin, and say, "Okay, here is yours, and here is yours, and here is yours", I could probably do that. But the fact is if you had really high quality, 90% sporulation rate, 5-micron size, and if you defeated the electrostatic problem that causes it to clump together (like the U.S. and Soviets did) if you could get that quality (the reports vary and there is no hard science on this), the Office of Technology Assessment, in '94, said that 100 kilograms (220 pounds) delivered in ideal conditions could kill between 1.4 and 1.9 million people in Washington, D.C. The World Health Organization said that with 50 kilograms you could kill 100,000. Although that is a pretty wide range, it is still a great deal of people. The problem with the World Health Organization's 1970 study is that they did not have access to SHADY GROVE information because it was still top secret at the time (I will talk to you about SHADY GROVE later). I think they probably underestimated. Once again, that is in ideal conditions. This is very difficult to do outside. The best place to do it would be inside. The subway system is by far the best. So we are saying that 220 pounds of high-quality dry powder anthrax is more deadly than a 1-megaton thermonuclear weapon, however, there is some debate on this. Although it obviously has not been tested, even the low figures are a great deal of people. This is a serious threat.

Jim Woolsey, Stanfield Turner, two former CIA Directors, both think bioterrorism is the No. 1 national security threat we are going to face. Jim Woolsey played the CIA

Director in DARK WINTER. And a Nobel Prize-winning microbiologist who does not even think you have got to be real smart, you just have to be lucky. That is the thing that always scared me about something I heard from an Irish terrorist one time. He said, after they caught him, "You know, you guys have got to be lucky every day", talking to his British captors, "I have only got to be lucky once."

People talk about Aum Shinrikyo. They had a billion dollars and they assembled some very educated people, however, they could not make a biological weapon. They tried to make a biological weapon using chemists and physicians. But that is not who I would choose. If I wanted to make a biological weapons program, I would use Ph.D. level microbiologists. So, to say they had well-educated people means nothing to me - they could have been educated in English literature. They had no Ph.D. level microbiologists. They had no one who knew about modern aerosol technology, which has made incredible advances in the medical community for delivering medicines. They had none of those people working for them. Also, they were sabotaged. The graduate student that they sent to the laboratory to get the sample of bacteria came back with the vaccine. There are two stories of why it happened. In his court case in Japan, he said he got cold feet at the last minute and did not want to kill a bunch of people. Or he may have just taken the wrong one and did not want to look dumb at the trial. Or he was trying to get mercy from the court. Whatever it was they mass-produced the vaccine, however, even if they had had the right stuff it would not have worked because their slurry - they were just throwing globs of stuff off of top of buildings. It was not a sophisticated operation. So, just the fact that they had educated people and a lot of money did not mean that they would successfully produce a biological weapon.

I do not know how many people here are familiar with the Soviet program. I have an electronic journal with interviews with both Alibek and Popov at the Website: www.homelandsecurity.org. Alibek was the Deputy Director of the Soviet Union's program, had 30,000 people working for him, made hundreds of tons of anthrax, plague, tularemia, and weaponized smallpox. When the Soviet Union realized that the World Health Organization was successful in eradicating smallpox and we stopped vaccinating people in this country in the early '70s they thought, "A perfect weapon to use against the U.S." I don't understand this. In our biological warfare program, we had some hard rules. You could not make a biological weapon unless you had a vaccine and a treatment. That makes sense to everybody around this room. And for those of you who do not know, we did have a significant biological weapons program and we were going to use it. We focused more in incapacitating agents like Venezuelan Equine Encephalitis which I could make a pretty good argument because it is a more humane weapon than an M16.

The Soviets thought the ideal weapon was one that had no vaccine, no treatment, and was highly contagious and lethal. To me that does not make sense, however, not everybody thinks like me and that is difficult. We had really good intelligence in World War II - hard intelligence that the Japanese were training Kamikaze pilots. You know how many ships we lost off Okinawa because we just could not believe that people would actually do that? But Alibek did some amazing things over there. This is the only human testing of anthrax that I know of. Sverdlosk, a city of 200,000, Ural Mountains, had a plant here on the south edge of town. Whenever you do maintenance work on an airplane or a

tank and you take off an important part you put a big tag on there that said "Do not fly this airplane until we put that part back on there." They had a drying machine that was drying the anthrax and the filter clogged. So a guy took it off and he put the tag on there and goes to get the new one but he got distracted by something else and his shift changed before he got back to working on the drying machine. A new guy comes on duty and says, "How come this machine is not on?" Click, and he turns it back on. It released dry powdered high quality anthrax into the air that night. There is a debate about how much it is. Messelsohn, from Harvard, went over with a joint U.S. and Soviet team years later to do the investigation. He says less than a gram or perhaps a microgram was released. Ken Alibek says, "No, I know what that machine was like, I know how long it ran and it was more than that but it would not have filled half this glass." It is very sparsely populated down here. Forty kilometers away cows died. And that is the number of people that died. So we know it worked on humans. They were very lucky that the wind was out of the north that evening instead of out of the south which would have drifted it over the city.

I was the first person to debrief Sergei Popov when he came out. What I like about Sergei is that if you ask him a question, he will say, "I have no first-hand knowledge of that so I am not going to speculate. I will only talk about research that I did." He was the senior scientist in our genetic engineering program. He worked on weaponizing HIV, Legionnaire's Disease, and smallpox that would be resistant to our vaccine. The purpose of the HIV and Legionnaire's Disease was to wage war on the United States and we would not even know we were at war. People did not believe it at first when he talked about making smallpox resistant to our vaccine, therefore making it more lethal. Naturally occurring it only has about a 30-40% fatality rate.

Smallpox is one of the most complex molecules that we know of. Some people will tell you, "You cannot tinker with that because it is too complex." This was the early 1990's technology and he was talking about Interleukin 4. Recently the scientist from Australia wrote an article about what they actually did with Interleukin 4 in changing mousepox in mice that were totally resistant to mousepox. When they played with the Interlukin 4 they were able to kill them. So there are questions about what can be done and we know the direction that biotechnology is headed.

I want to talk now about SHADY GROVE involving a U.S. Navy A-4 over the Pacific. In the mid-1960's we tested live agents over the Pacific. Forty-seven miles away they got LD50. That is a term bioweaponeers use for a lethal dose for 50% of those animals exposed. Using monkeys and other nonhuman primates 47 miles away it was killing half of them. We do not know how much farther the clouds went because the farthest barge away was 47 miles away. This is not something we have done on a small-scale and then used computers to kind of extrapolate. They have never done tests where we have had the skyscrapers we now have in modern cities. Even when they did the test in San Francisco in open air there were no large buildings back then in the early 1960's. Wind currents and stuff would have enormous effects and that is why it is still most effective to do it indoors or in a subway system. The Defense Threat Reduction Agency looked at what it would be like if a French Mirage F-1 with two thousand-gallon spray tanks was flying in an orbit over Kuwait which they were free to do up until the 15th of January, 1991. Fifty percent of the people exposed would have died.

My opinion of what we are currently facing, assuming they are connected to Al Queda, and not all the hoaxes, is that all these folks do not have a great deal of high quality real anthrax. There are reports that Atta, the guy that masterminded the U.S. part, met with the chief of Iraqi intelligence earlier this year in Czechoslovakia and there is one report that he actually handed him two test tubes. I do not think the Iraqis would give large quantities of the stuff to Al Queda because Al Queda does not like Iraq much more than they like us. But as a wonderful psychological weapon to give them a couple small samples that they could not do much damage to Iraq with I think is what we are seeing coming through the mail.

From a military strategist perspective the most important element of a biological warfare attack is surprise. Earlier this year four samples of Bacillus anthracis were sent to laboratories in the United States just in with the normal flow of things. Three laboratories out of four threw it in the trash can. Any microbiologist knows that whenever you see "Bacillus" written on a sample that it is contaminated. Today if we sent a sample of Bacillus anthracis to 81 labs in the United States all 81 would come back positive because they are now looking for it.

The people we are dealing with are pretty evil but they are not stupid. They are pretty good strategists. If they had a great deal of high-quality stuff we would have been attacked with that first because we would have been so far behind the power curve before we realized what happened. I do not think that Bob Stevens is the first American to die of inhalation anthrax in 25 years. However, no one was looking for that stuff but we are now. They are either very foolish strategists or all they have is what we are seeing now. They cannot kill many Americans but they sure can terrorize many Americans.

DR. WALDRUP: Texas had a major anthrax livestock outbreak this past summer. We have anthrax every year, however, this was just a particularly bad year. This was in livestock. There were only two human cases and both were cutaneous. We think they were associated with the livestock but it was widely broadcast across Texas and people were afraid. We had people calling who did not even want to drive across East Texas.

MR. LARSEN: Mike Osterholm talks about an outbreak of meningitis in Minnesota where truck drivers were driving 200 miles out of their way to miss this one little town that had the meningitis outbreak. That is a great deal of money for truck drivers in gas and diesel fuel but it was the psychological factor. A couple of years ago at Johns Hopkins one girl showed up with meningitis. Although meningitis is contagious it is hard to get it. You have to cough real hard and be real close to the person who has the disease. At Hopkins 500 medical personnel including physicians and nurses demanded to get the vaccine. People who were on vacation while the girl with meningitis was in the hospital also demanded the vaccine. Although it was the medical community including scientists, it was the fear factor.

Sixty-three people had tularemia in the United States last year. The daughter of the former Superintendent of the Air Force Academy died of plague. Many rats above the 5,000-foot level in the Rocky Mountains have plague-infested fleas on them. These things

exist in nature. So you ask how did they get it? I will tell you how Saddam Hussein got his four samples that he weaponized (actually two of them were successfully weaponized). He got them from the American Tissue Culture Collection in Rockville, Maryland. He simply wrote and asked for it. After that and after the Gulf War we decided that we needed to have better control over biological agents.

In 1993, a guy from Ohio called up and said, "Hey, I want to get some plague, I want to do some research." And they said, "Well, Congress passed some laws, we cannot just send it to everybody." So he said, "I am a legitimate scientist", and he faxed his credentials from the State of Ohio, and they said, "Okay." So they FedEx'd plague to Larry Wayne Harris, a known lieutenant in the White Supremacy movement. Although more laws have been passed the problem is that we can only control what laboratories do in the United States. We do not have control over those other laboratories, plus it exists naturally.

At lunch the other day we were trying to educate someone from the New York Times magazine about Jack Hitt. He said, "What would I need to produce biological weapons after I got my sample." We happened to be in the Capital City Brewery and I said, "Right there." In fact, if you look at some of the pictures of Ken Alibek's old factories they look exactly like the Anheiser Busch facility in St. Louis. It is a fermentation process. So, it is all dual-use technology which gave serious problems to our weapons inspectors in Iraq.

Weaponization is the tough step, and that is the thing that protects us best today. I do not worry about the Timothy McVeighs. However, a Ted Kaczinski type of person, with a biology degree instead of a mathematics degree could make a psychological biological weapon that would affect people, in his petri dish in his basement. However he could do large-scale production. You have to have many different sciences. You have to have microbiology, aerosolization, and many different things that one or two people cannot do. Once you get to this point, delivery is easy if you have the high-quality stuff. The Soviets used to put it in SS-18 missiles. Airplanes and remotely-piloted vehicles are good. My favorite is the F-150 Ford pickup truck. It is the best one. It is the one you are not going to see because you will not even be looking for it. But once you get to the weaponized material delivery using envelopes it is pretty inefficient. I think one reason that led the press off about this is that the stuff that went to the Senate was high quality. The key was that they ran it through an automatic letter-opener and that sprayed it in the air as opposed to doing it the other way.

I have gotten two letters in my office that turned out to be phony - it was not anthrax. I thought it was a gag because it just looked like the FBI example. It said "Personal", it had stamps all over the place, misspelled names and it was thick. So you just get the plastic bag out of your trash can and put it over your hand and make sure you do not actually touch it. I told my people in the office, you know, "Even if you open it up and some powder came out that does not get you a day off work tomorrow. We will put you on Cipro, then they will test it and there is a 99% chance it will come back talcum powder and then we will take you off of Cipro." One of the things we need to do now for folks working in this field is help them keep things in perspective.

When I was the Commander of the flying operations out at Andrews Air Force Base

we had the best fire department in the United States Air Force. These guys were incredible. I could pull my staff car down in front of Hangar 6 where we kept the Vice President's airplane, and I could say, "Command Post, this is Ops 1, got a simulated fire in Hangar 6." In less than 90 seconds the first fire truck would arrive and the firefighters on that truck knew how many airplanes were in the hangar, how much fuel was on each airplane, where all the hazardous material was in that hangar and, based on the day of the week and the time of day, approximately how many people were in that hangar. That is a response. They were well trained and knew what to expect. If I would have picked up the microphone and said, "We have had a biological attack on Andrews Air Force Base", they would have been like they had one foot nailed down to the floor and the other one just going in circles because we do not have plans for it and we do not practice for it. We proved that in the TOP OFF Exercise in Denver. If you have not read the 8 page Johns Hopkins' report written by Tom Inglesby of the TOP OFF Exercise in Denver, you can find it on my Website or you can obtain it from Johns Hopkins Center for Civilian Biodefense Studies. It is a marvelous analysis of how unprepared we are. We gave the Denver folks two weeks advance notice that there was going to be a simulated bioterrorism event. We did not tell them the agent nor did we tell them where it was going to be released. They were given two weeks to prepare and they totally failed. We are very much in the react mode.

Education is one of the things that I try to do. Everyone thinks of first responders as those great guys we saw in New York City –police, firefighters and EMS. However, these probably will not be the first responders in a bio-attack.. But when I go to state and local training briefings it is like, "Okay, we want all the real men over here and you public health types are going to be in that room down the hall." This tells me that I still have a great deal of education to do in the area of training for a bio-attack. When I talk to the military installation commanders I ask, "have you ever sat down with your Chief Medical Officer and discussed biological warfare? Does he have plans and, if so, do you know what his plans are? Do you know what we would do? Do you know how important it is just to wash your hands frequently?" They need to think about simple questions such as the effect of meteorological conditions. People do not seem to understand that you are not going to do it in broad daylight. If you are really afraid of biological warfare, move to Great Falls, Montana, where I used to live, since it has an average of 40-mile-an-hour winds so you do not have to worry about biological warfare.

As we discussed, the Rajneesh Cult was low-tech. I worry about the military people who are deploying overseas. When I was in the Army we had to do KP duty. We want to treat our troops much better now so when we deploy somewhere we bring in foreign nationals. So now I have foreign nationals preparing my food and I do now know where they have been or anything about their background. Sure, we now treat the troops better, and I do not really like MREs too much myself, but I we ought to think about who we are letting prepare our food.

Defense against low-tech involves low cost defense including everything from watching your mess halls to wearing a protective mask. There are some things we can do in the military that does not apply very much to this crowd. However, five of the people exposed in Senator Daschle's office were what my firefighter friends refer to as "blue

canaries", i.e., the police officers who go rushing in. The firefighters always stand back and watch, and if the Blue Canaries start falling over then they put their masks on. That is a joke in the firefighters community. Five of the people exposed were the police officers who ran in. So, we were talking to a law enforcement conference Thursday, and said, "Hey, when they call 9-1-1 and say 'I've got an envelope with powder', first question is, 'Have you sealed it in plastic? Did you see a lot of it exposed?'" Now, if the police officers just put something like this on when they went in, they would be perfectly protected as long as they wore it properly. These are some low-cost things we can do for certain people. If you want to buy a mask that is fine, just wear it all the time. But for police officers this is low-cost and it probably will give them some more confidence in their response.

We need to rethink how we look at preemption. We saw what a few small well-organized people can do with three or four airplanes. If we have intelligence information that they are operating in some small country or failed-nation state we better be prepared to start preempting in the future. Preemption used to be a dirty word in the Cold War because it was connected to first use of nuclear weapons - something we said we would not do. Right now we are in the consequence management phase. We are working on attribution. We do not retaliate for revenge, we do that to eliminate the capability of other nations to hurt us again and to let them see they are not going to reach their goals, which hopefully will lead back to where we can re-establish deterrents. However, that is going to take a while.

Sometime in the next decade biological warfare will have the significance of the invention of gunpowder. It is going to be that big a change. In the old days you were the king and you had experienced soldiers and their shields and their big swords and you could keep the peasants all in line. Then somebody invented gunpowder and then a peasant with a musket was pretty strong. We have seen how technology can change the balance in international security. So it is something we are going to have to be better prepared to deal with.

DR. HOLLOWAY: I have a question about the point you made that the immediate response to a local attack. In any of these exercises once you look at consumption of resources the long-term response may very well be national. Between political circles the distinction that sometimes is made is between local and national response and you need to integrate these aspects.

MR. LARSEN: That is a very valid point, the long-term is national, particularly when you are talking about contagious pathogens it is the only way we can do it. During the Rodney King riots the California National Guard was there and the President federalized them. The only reason he federalized them was because California ran out of money to pay for their Guard. Simple resources played a big role in that. And other times it is the coordination effort especially when you are dealing with something that is spreading around the country. The two things we focus on in the Institute are cyber warfare and biological warfare. They are the two I see as most threatening to our way of life here. You do not even have to enter the country to give them to us and they self-replicate. So you release them and turn them loose.

DR. SHAW: Since the technology seems to suggest there is limited aerosolized dissemination, I read that people are really concerned about water contamination. I am curious about the risk of water contamination and what the pathogens would be.

MR. LARSEN: You will hear some dispute on this but my main answer is what the environmentalists tell us - the solution to pollution is dilution. There is just too much water in a reservoir to put enough toxic substance in there to cause a problem in a water system. In addition, it goes through a water treatment plant. However, if you tap into a building you could cause some problems where the water line comes in. In major cities, for example where they had all the diarrhea up in Milwaukee a few years ago, the problem was due to human error in a water treatment facility where there was something broken. But I am not that worried over water. They tell me that the water in Washington D.C. is safer than bottled water because there are no national standards for bottled water.

DR. MARLOWE: You have alluded to the psychological and behavioral effects which some see as far more dangerous and intractable. One of the problems that we do not deal with but should is the problem of the vectors. The primary vectors carrying these have been the media drumming up hysteria in every feasible way, and also the Internet. What are the things we should be doing to lower the level of behavioral infection that is being carried by what I can only call the "eities agitae" of the American sink.

MR. LARSEN: Part of the problem was that the Government was not talking enough. However Governor Ridge's press conferences will do a great deal to get that word out. The media has space to fill and print media has deadlines. You have news on 24 hours 7 days a week. If the Government is not giving information then the media is going to talk to people like me who is willing to stay up all night and talk to them. The Government has a to play a role and really needs to be more responsible.

Ten days ago, watching ABC News, a guy comes in, sits down next to Peter Jennings, "Peter, I have troubling news. The Ames strain of anthrax is resistant to the vaccine." Not only is that totally wrong, it is also irrelevant. We do not give vaccine to civilians, and Ames is the strain we use to test the efficacy of the vaccine. Just totally wrong. But you get to sit next to Peter Jennings when you have a hot story. We have to convince them that his is serious national security business and we really need to educate the press.

Wednesday night I talked to a reporter from the New York Times and said, "Do not run that story, you are wrong." And the reporter said, "Nope, I am going with it. I got it confirmed by a government official." I said, "Tom Daschle, do not quote him, he does not know" -- "This is military quality stuff in his office and I heard Tom Daschle say it so I am going with it." They have not had time to do the test. Do not go with the story. But they did and they were totally wrong. Several press people have said, you know, "millions of people died in the DARK WINTER Exercise" - 2600 died. They did not bother to read the study. We have to hammer the press to understand that now accuracy is more important than speed.

The other night Walter Cronkite said he is in favor of censorship. I do not agree with him on that. First of all, I think it is impossible today. This is not World War II where you

have got a couple of networks and a couple newspapers. How are you going to censor the Internet? I wore a military uniform for 32 years and I like the constitutional liberties I have and I am not going to give them up in three months. But I think we have to shame them into doing it, plus the Government has to give out more information quicker.

DR. BARBERA: I am an emergency physician from Washington, D.C. I am Chair of the D.C. Hospital Association of Emergency Preparedness Committee. For the last week we have been dealing hands-on with this biological event from the Capitol. I would disagree with you that we need to educate the press. We need to educate our national leaders and the people who are talking to the press. The press are a very predictable group of people. They are a very professional group. They are going to report what they deem is professional. When Senator Daschle made his comments to was obvious that he is the one who needs to be educated. And the Representative who said that it was in the ventilation system of the Capitol buildings needs to be educated because it was their statements to the press that generated the huge run-on of patients to the hospitals. I look at this as a small event, and the majority of the terror was caused by the people who thought they were part of the response community, not the terror caused by terrorists.

MR. LARSEN: I completely agree with you. We need to educate as many people as possible. We have people reporting on biological warfare that could not spell "anthrax" three months ago. We had that same problem in the Gulf War. We deployed the first three tiers of reporters to the Persian Gulf. People in the Pentagon who were doing the daily briefings did not know an M1 from an M16. But for leaders like Daschle to say what had happened panicked Congress and they left.

DR. BARBERA: But we have good experts in the Federal and local governments who can speak authoritatively and scientifically accurately on these subjects. Once the hospital community was able to access the CDC people working with the Attending Physician's office and other experts at the operational level, we got what we needed as hospitals and we were reassured. But those people have not yet talked to the public. So this is also a governmental problem. Governor Thompson is the one talking to the public. He is not a scientific expert.

MR. LARSEN: When the Government was not talking much I thought Dr. Mohammad Akhter from Public Health Association was doing a great job. Were you overwhelmed at your hospital facility when they made that announcement?

DR. BARBERA: Hospitals have been overwhelmed by people who have been called "worried well", which is a very wrong terminology. It is actually those who have been potentially exposed. These were not worried well, these were very smart, credible people who were saying things like, "We are being told to go to the Hart Building, Room 216, to be evaluated. We were exposed or potentially exposed in the Hart Senate Office Building. We are not going back there." Now, you could figure that out beforehand, but people who were running the response from the Capitol were very busy with things and had a different perspective. But it is things like that that are very simple to fix if you have the right systems in place and you have the right people speaking to the public.

MR. LARSEN: What are we going to do when the flu season starts? By the way, for those who do not know, of the eight most likely biological weapons, seven of them begin with flu-like symptoms.

DR. BARBERA: The flu season does not worry me anymore than any other season except for the fact that hospitals are filled to capacity even more during the flu season. But the fact of the matter is, when you are going to take a biological agent that is intended to infect people and kill people, you do not get 10,000 people exposed, 10,000 people starting to have flu-like symptoms, 10,000 people getting sicker, and then 10,000 people dying. You have a leading edge to any natural or intentional exposure and you are going to have a couple of people who get sick a lot faster than others. They have more of an inoculum, they have HIV as an underlying problem, they are on chemotherapy, or they are a transplant patient who is on chemosuppression or an immunosuppression. We recognize that there is a problem but we do not have systems in place to figure out how big the problem is and where it is coming from. We do not have good systems in place to help us as a health care community and as a health care community with Federal response and non-health care responders to respond correctly.

MR. LARSEN: I am worried about incidents like the one that occurred in Aum Shirikyo where 12 people died but thousands of people overwhelmed the system. For example, if they release plague would you be able to find the plague cases if you have thousands of flu people coming to you who would not normally come to you except they are terrified right now.

DR. BARBERA: That is not a primary problem for the healthcare community, however, it is a primary problem for the people who are supposed to be speaking to the public and giving them good, credible information in a timely fashion so people can make a judgment as to who needs to report for care and who does not. Clearly that was not done with the recent events.

MR. LARSEN: I am just trying to think how I am going to react if my daughter comes in and says, "I have got a headache and my body hurts all over", what should I do? What am I going to tell my daughter?

DR. BENJAMIN: I am the Health Secretary for the State of Maryland. We are obviously very, very concerned about the volume that that is going to cause nationally. The solution is to do several things. First is to make sure that people understand that common things occur commonly. It is more likely to be the flu than anything else. Second is to make sure that we push very aggressively for people to get their flu shots. There will be enough vaccine this year, unfortunately it will be late, and that is a big problem. Theoretically we will be well into the immunization season in mid-November. Third is that we need to increase the number of surveillance hospitals that identify the flu. For example, in Maryland, there are three or four hospitals that do cultures to identify the flu. Every January we have a big pronouncement, "The flu has arrived." Therefore, the first thing we need to do is know the flu is here sooner than it is so we can get out in front and say to the public, "This is the flu", the idea being that if it is the flu then it cannot be bioterrorism. However, since it is not clear whether this will be effective it is not clear

whether we ought to spend time and money with the rapid flu screening tests since they are expensive.

MR. LARSEN: That was my question. Which is cheaper, a rapid anthrax test or a rapid influenza test? Which is cheaper and which is more doable?

DR. BENJAMIN: The anthrax test is not very reliable. They are good for environmental things, and you have got to have 8-10,000 bugs. In Maryland we are currently trying to determine whether the sensitivity and specificity are such that you can do the rapid flu screen. You do not have to do it in everyone but you do enough to determine it is not in the community. However, if we do not beef up the public health infrastructure in the next month and a half we will be in deep trouble. We are very troubled by the President's proposed budget to buy a great deal of drugs but it is very short on the resources that local communities need to identify the sick people. We are going to absolutely need that simply to handle the situation.

MR. LARSEN: Tara O'Toole from Johns Hopkins says labs are just about overwhelmed right now with all the powder that is coming in. One of my questions is whether university labs can be spun-up to help in this sort of thing? The problem in this country is that we do not have excess capacity. Approximately 30% of our hospitals and 50%of teaching hospitals are in the red right now. They cannot maintain excess capacity to search because they have to make a profit. We cannot blame them. If I was a hospital administrator I would not spend time planning for bioterrorism exercises and training. The Federal Government has got to fund that.

DR. BARBERA: This morning I sent a Letter to the Editor of the Washington Post on that subject. If you just use the example of last week, people expected hospitals, medical practitioners, and public health practitioners to essentially volunteer for things that have nothing to do with their usual roles. I have not seen Bayer donating one ounce of Cipro in a volunteer fashion that has not been paid for. I have not seen the consultants who are helping people doing things that are not being paid for. The American world has to recognize that we are expecting a public safety function to be done by the private medical world. Hospitals and the public healthcare community have been doing what could be termed "reasonable preparedness" for a while, and they have stepped it up lately. However, there is a huge difference between reasonable preparedness and adequate preparedness and we cannot do adequate preparedness until public policy recognizes that the health and medical issues are a public safety function that needs to be funded the same as they are funding police, fire, EMS, and law enforcement.

MR. LARSEN: Being a military guy I have more credibility in making that argument than some of my folks from the public health community. We understand excess capacity. In the military we occasionally got flak for our covered tennis courts at Andrews Air Force Base. The taxpayers paid for them but they did not pay for them so I could play tennis in the winter. In four hours that becomes a 400-bed hospital. We do not have to make a profit. We understand surge capability and we fund it from the Federal Government. One of the big things I talk about in homeland security is the new partnership between the Government and the private sector. I like health care in the private sector but we cannot

expect you to be prepared for the sorts of things we need to do.

DR. OLDHAM: One of the big things that we are challenged with is to get the best information out there and to follow this information. That is why I really appreciate your talk and think it is very helpful. One thing that is very helpful is that there is not good evidence for anthrax being widely available right now and therefore it is not a real threat. I am not that clear about smallpox. Last night I heard several opinions that differed from yours in terms of even whether anybody actually has it. However, we know that the Government is now coming forward with massive funding to develop vaccines for the whole country. Therefore I am worried that this might be a new more substantial psychological fear that is taking over.

MR. LARSEN: Smallpox is an existential threat to the United States of America. With a successful smallpox attack you could make the United States cease to exist. I truly believe that. It is also the least likely. According to the World Health Organization supposedly there are two samples, one in Moscow and one in Atlanta. We know the Soviets went in and pulled samples out and did a great deal of weaponization. They had it loaded on SS-18, their largest ICBM missiles. Supposedly it was all destroyed but I do not know.

Some of the most valuable investments we have made in national security spending are for programs like Nunn-Lugar-Dominici which is working to try to control nuclear and biological weapons in the Soviet Union. The World Health Organization did not get to North Korea in their eradication efforts, however, they did not get to many parts of Iraq. Some people believe that North Korea and Iraq have smallpox. One thing you need to realize is that if a nation state released smallpox it would eventually get back to you. This would be a global crisis from the first case. Therefore it is hard to imagine anyone actually using it but certainly we have to think about it. That is what I got asked last night. "Why are we making 300 million doses now. We have 15.3 right now so why are we going to 300 million if it is not a threat?" How many people in here know somebody who had their house burn down last year? However, everybody is still paying their homeowner's insurance, right? Pretty rare to have a house burn down but since it is pretty valuable you are making a reasonable investment in homeowner's insurance. The problem with smallpox is that is it used to cost a penny a dose but now it is $9.00 a dose. So it is going to be a substantial amount of money, but it is like paying for homeowner's insurance. Last week the New York Times reported, "Governor Ridge says he plans to give smallpox to all infants." When I read this my response was, "You have got to be kidding me. He cannot make that decision yet." I was furious. I arrive at work and they print out the interview with him and Tom Brokaw. It turns out that he did not say that. What he actually said was, "We are going to produce 300 million doses, and then after we produce it, we will decide who to give it to and when." So, once again, the media disseminated information that was not accurate.

DR. URSANO: I want to underline John's comment about what is the accurate information to get out because it raises behavioral issues. What is the impact of that information? How can it best be conveyed? In fact, John, you mentioned that you have the opportunity to get that information out.

DR. OLDHAM: New York is a unique environment with a great deal of hospitals and academic centers. Last week I convened the Chairs of all of the Departments of Psychiatry in the New York region. There were eight if you include New York Medical College in Westchester and Stonybrook on Long Island. We are all convening again Monday morning and we are meeting with the City Health Commissioner, the Mental Health Commissioner, and the State Commissioner. One topic we will cover is how to provide response services for the victims, the traumatized survivors, and high-exposure individuals from the September 11th disaster itself. But since we are a network of very major health providers we are also thinking about how to get the best information out to the city. So, that is why this conference is very helpful to me. Coincidentally Herb Pardes, the President of the New York Presbyterian Hospital is going to be on CNN Monday, called me about the latest information on the mental health and psychological effects of bioterrorism. I said, "Herb, I will call you Sunday night." So this conference is also very timely.

DR. URSANO: It is particularly important that we educate doctors because it has begun to hit the press not only in terms of knowledge, but in terms of pictures. So we have an opportunity to be at the cutting-edge of that particular question and focus on the issue of what is the accurate information we need to get out, and are there other ways to manage what is going to be an increasing wave of concern.

MR. LARSEN: You tell me what to do, what is your consensus. Frontline wants to do a one-hour story on DARK WINTER. So far I have said no because I do not want to scare the American people and because I do not believe that I would have final editorial control. Frontline does some very good pieces that can be very educational such as their piece called "Plague War." When I do lectures I do little segments from that. Should we put that on Frontline? The problem is that if I do not cooperate they probably still are going to do it and that is the dilemma.

DR. MARLOWE: It is important to underline the need for a greater public health capacity. Otherwise it will probably be spun out. However, I disagree with you about the media. The primary function of the media, and particularly of the news components, is entertainment to hype the ratings, and not necessarily giving "the facts and just the facts". This is a critical distinction.

One question I have is whether there any nations deemed a potential smallpox threat that are still vaccinating its population, for example Iraq or North Korea?

MR. LARSEN: We do not know of anyone. In the DARK WINTER Exercise we never gave them a smoking gun, however, one of the things we kept feeding to Jim Woolsey was a pretty good report that the Bath Party was vaccinating its senior leaders. There have been press reports that some of the special operations troops from North Korea that were captured in South Korea had smallpox vaccines.

DR. HOLLOWAY: Smallpox vaccine or smallpox scars?

MR. LARSEN: That is the problem. There is no test for whether you are currently

immune, but they were thought to be recent smallpox scars. As opposed to the way ours look right now. So there is no hard evidence. That is such a closed society up there. However, I will sleep better when we have 300 million doses of smallpox vaccine. However, if it breaks out our problem will be with our international travel system. When you see the DARK WINTER presentation just three shopping malls were hit, however the reports are coming out of 35 cases in Oklahoma, 7 in Atlanta, and 9 in Philadelphia and that is what they are using to make their decisions about how they are going to use the vaccine. However, that is not from secondary infections yet. These are still all those people spread out across approximately 25 states. This is just from people who were in those shopping malls. It is the Christmas season and people are traveling so it is going to spread internationally. If we have 300 million doses and it starts spreading internationally there will be countries like England, for example, saying, "Send us some vaccine." By the way, in DARK WINTER when we asked our friends for vaccine they did not send us any. I would not have either if I had been those nations.

DR. SHAW: I am interested in other opinions about the question about Frontline because I am not so sure the media really likes to reiterate over and over the worst-case scenario. It seems like there is the potential for something like Orson Welles' "War of the Worlds." Are we ready? Is it premature?

MR. LARSEN: I turned down National Public Radio (NPR) despite the fact that I really like NPR. I listen to them and I send them money. But I said no because they wanted to use a sound clip from DARK WINTER. When you put it on Frontline I am going to make them put a big disclaimer across the screen that says, "This is an exercise, this is not a real newscast." You cannot do that over the radio. In fact I do not do anything that is not live anymore. I do not like sitting down, looking into a camera for 90 minutes and then they use 3 minutes of it. Frontline obviously is not going to be live. But what do people think about doing Frontline?

DR. SHAW: I would be opposed to showing DARK WINTER and I will give you an analogy. If your seven-year-old girl comes up and asks you where do babies come from, what do you tell her? A little depends on what she really needs to know, what is her cognitive capacity to assimilate and integrate this information? I think one has to be very, very careful about the type of information one conveys to a population.

MR. LARSEN: That's a good point. DARK WINTER was designed for senior leaders.

DR. ENGEL: Without classifying it I do not see how we can not engage in a public dialogue about an exercise like this. My experience around Frontline is that if you will not do it with Frontline, then you will not do it at all because Frontline is as reasonable as they come. And I would say if you are going to do it, I would do it with Frontline.

DR. TINKER: Speaking from the media's perspective, when making decisions about what to say and what not to say, what is missing from all of this is to what end. In terms of these media ops people are not going in with clear communications goals. To what end would we communicate about DARK WINTER? What is the expected or desired outcome in terms of what we want people to think, how we want them to feel, and what we want

them to do based on that story.

MR. LARSEN: The other day I met General Eisenhower's daughter, who now runs the Eisenhower Institute, and she is very concerned about communicating to the public. I told her that when her grandfather went out late on the night of the 5th of June in 1944 to see the guys in the 101st who were all painted up and ready to jump into Normandy, and he said, "You guys are going to lead a great crusade and this is going to be one of the most important military missions and there are thousands of mens' lives that are going to depend on your success", and that was true. Alternatively, he could have walked out there and said, "In 60 days, 70% of you are going to be dead", and that too would have been a true statement. So, now when I am trying to communicate to folks I do not want to spin it. I do not want to get over to where Tommy Thompson was the other week and pat them on the head like a six-year-old and say, "Not to worry." On the other hand I do not want to help the terrorists terrorize America so what do you tell the public?

DR. URSANO: To underline Tim's comment, information is not just information. It has a purpose. It has a direction. And it has a communication meaning. The task for us is to think about that at the time at which something is going to be put out.

MR. ARMISTEAD: The Virginia experience shows that it needs to be said somewhere. I am not anti-public health. In fact I am all for beefing that up. But the mental health system is tapped out too. I think there is a positive value in providing more information and for the public to know that Government at all levels is working and planning for bioterrorism right now. This is important to remember. But there also is a big segment of the public that still thinks there were 190 victims at the Pentagon and that is pretty much it. At least that is Virginia's experience. It is not consistent and it is a tough passage but maybe it will be better the next time. We have a tendency to focus sometimes on the terrorism event, the people who actually have the disease or who were killed by the bombing. But we cannot lose sight that everybody is impacted by terror. Everybody in Virginia is impacted. They continue to think that they are a target but they still go to work every day. We are going to have to deal with that but I just do not want that to be lost. From my perspective the Federal Government also has a tendency to look at this as "an event", and actually from the mental health perspective, it continues. It is not just September 11th, it is anthrax on top of that as well as other things. It is an incident in the Washington Metro and I think it has to be viewed like that.

MR. LARSEN: What is the stress level right now? I have people calling me, family members calling the office asking, "how serious is it right now"?

MR. ARMISTEAD: I would rate it as very serious. I have done this work for 15 years and I have dealt with natural disasters but I certainly have never seen anything like this. We are already seeing repercussions in the clientele we usually serve. In a natural disaster we need an outreach model. FEMA has a good model and Brian's people but the mental health professionals have never had the resources to make a shift to outreach. In a terrorism event I would argue that outreach model is really what you want, it is more applicable. But we have never had the resources to train folks. So, in Northern Virginia, the first thing you have to do is get the Executive Directors to realize that there is an event

and what the magnitude is. We provide the services through Community Services Boards. Initially I was fighting the view that it was Federal property even though it was in Arlington. DOD was going to take care of all their folks but it goes way beyond that and military rules, where they do not want to report to the Commanding Officer.

Also, this is a very diverse community and we never had the backlash, the hate type things towards the Muslim community. So it is a whole series of events. To say it is just a bombing is just the tip of the mental health or psychological iceberg. And we are still seeing the repercussions. Although it is very clear that the Federal Government wants to help I am worried because it is also clear that they are not exactly sure how to do that in some aspects. It is very inconsistent. From a state perspective you end up questioning without really knowing how long the Federal Government's commitment will be and what are the ripples and the long term effects. Virginia is worried because of proximity to Washington, D.C. and because of the heavy military presence we will continue to be a target. Therefore Virginia will be on edge for as long as America is at war. And it scares me but we need to start talking about five years down the line.

MR. LARSEN: What is bothering me is that I do not think we have seen the worst of it and when I hear from the people you see the responses. There is a very clear reason why they are attacking the media - they want to terrorize them. I started to say something to Rosie the other night. She said, "I'm not going to go to NBC and do my show anymore." That is exactly what the terrorists want. That is why I was glad Dan Rather said he was going to go back in. But I am concerned because I do not think we have seen the worst.

DR. CLIZBE: A partial answer to your question, we have an 800 number, an 866 number – 866-GET-INFO – and there has been a radical increase in the number of people who are calling, expressing anxiety, fear and concern. I think this is a wider-spread phenomenon than we had expected.

MR. LARSEN: We have been pampered in this country, other than violent crime which we all learn to deal with whether you go buy a gun, three locks on your house or you do not go to certain parts of town. We have adjusted to that to a certain extent here. The most terrifying point of my life was when I was hit with a chemical attack in Vietnam on Christmas Eve of '68. It is still as clear in my mind right now as it was in '68. It was so much different than being shot at with bullets or mortars or whatever because we didn't know what it was. But we had seen those Army training films, and seen those guys laying on the ground twitching with nerve agents and for 15 minutes we were absolutely terrified. Even though we were well trained, we knew what to do, we put on our masks and whatever, but that probably had a bigger scar on me than anything in Vietnam, and I was well prepared. Now, I am wondering, about a civilian society that is totally not prepared.

DR. CLIZBE: That is a partial answer to your question about whether you should go on Frontline. The challenge all of us face, and certainly the Red Cross, is what kind of information to disseminate, and what people do need to know, and what makes sense to communicate and what is information that is not helpful to communicate. And we have tried that through the hotline trying to figure out what is the right information to convey. We have just released a brochure that is really directed more toward preparing for the

unexpected kind of thing, what do you do in a family to get ready.

MR. LARSEN: That is very good. We refer many people to that and we have it on our Website. I think that is very helpful.

DR. CLIZBE: There are still additional questions about what we should be conveying. My thoughts about Frontline is to not just have it be about that exercise itself, but to somehow use it as an opportunity to communicate whatever we think ought to be communicated. Now, the problem is I do not think any of us know for sure what it is we ought to be communicating and maybe that is why we are here today. I think it is a golden opportunity to get some messages out.

MR. LARSEN: The real purpose was to identify the shortfalls and convince people on the Hill and the Administration to let us start fixing them. So maybe we could use that same sort of thing to get some support from the American people to call their congressmen and say that it is the long-term threat we need to be dealing with right now. We tried to put into context that this is a long-term threat. It is not the threat today, but what we could be facing in five to ten years.

DR. VEENHUIS: I think that one of the greatest risks in the American public is the idea that this is going to go away. I see this as kind of a psychological inoculation, a vaccine if you will, psychologically, to let the American public know what the facts are and how important accurate information is. So, I certainly agree this idea of actively using the press instead of passively responding to their requests. The other thing I would ask is that there be a considerable campaign of publicity beforehand that stressed that maybe children should not see this, and maybe certain other people should not see this. The states need to get ready because we are going to need, at least temporarily, a hotline ready to respond.

DR. DeMARTINO: DARK WINTER is geared towards convincing people who have a certain set of skills and a certain responsibility, which is very different from the general public. It is like after someone gets in a car accident, a DWI, and they see awful pictures of car wrecks and bloodied bodies. However, the networks would never say that this is something we are going to put in primetime because we want to get everyone not to drink and drive. The Frontline opportunity is enormous, and the platform that you have and the leverage that you can use with this production gives you a great opportunity. However, as a whole the audience is incorrect for the production. I do not know if people would know what to do with it. I think it could only add to people's terrible anxiety about this.

DR. URSANO: To use Tim Tinker's language you are saying that the message in this is threat awareness and the question is whether at this moment we want to communicate a message about threat awareness?

DR. MARLOWE: Obviously, if you are doing it on Frontline, DARK WINTER would be shown in a context, and that context is very important. My experience has been that Americans unfortunately love horror movies and horror presentations on television. And the bloodier and gorier and more terrible it is the more they like it. But I think it represents a real opportunity because the issues involved, but what are the processes, the needs, and

the ends that the American people have to be aware of and desire, and force the Government to move in the direction of to prevent the worst case from coming. And this is not an outrageous thought. After all, most military budgeting has always been done in terms of the worst-case scenario, not the ones who are usually going to fight.

DR. OLDHAM: I agree with Robert. I have remained somewhat concerned about the showing of that program because of the audience it was intended for. You asked a minute ago how bad it was, well, it is bad. And there are many ways you can look at that. Let me just say a word about numbers that might be interesting to you. If you figure -- and we have looked at it in New York -- this is an unprecedented event, of course, but the number of people at this particular World Trade Center disaster had all of the features of the worst kind of impact of stress and disaster, which are high exposure, large numbers of people affected, surprise, and done by malicious human intent. The numbers, therefore, in a high impact category are enormous. For example, they are estimating that 10,000 children lost a parent. They are estimating that about 100,000 people are in the high-exposure, high-impact category. The Oklahoma experience taught us that about 20 to 30 percent of those people with that high exposure will develop post traumatic stress disorder. That is 30,000 people. That is just PTSD. We are also seeing a major wave of escalation of other things, such as major depression. The World Health Organization did a study that indicated that the primary cause of disability in the world, of any illness, medical or infectious diseases, is major depression, by a twofold factor. And this is increasing as well as vulnerable populations, e.g., people who are highly exposed and those with preexisting vulnerabilities. The ripple effect is enormous and I am concerned because this is the climate we are in right now. I would like to see you go on Frontline and talk like you talked here, but not show that show, and give good information, but not do it in a way that is going to sensationalize and take it too far.

MR. LARSEN: Maybe it would be a good compromise if Bob or Harry could help us talk about the psychological aspects of bioterrorism. That might be a good bargaining thing to go back to them, you know, I don't want to cooperate with the terrorists, you know, and I tried to avoid that last night on Larry King, but I might not be able to control myself next time I meet, to a certain extent, irresponsible reporting by the major media.

Last night before I left work I was interviewed by the BBC and they were quoting the New York Times. "Well, this is true, this is in the New York Times." Guys, it's not the power and the glory, all right? But, I mean, that's -- maybe the way to do that is to twist the table a little bit. I like that idea. We are the people who did DARK WINTER, but we are not here to talk about that, you know, a little bait-and-switch.

DR. URSANO: To underline John's comment, which is really directed towards the multiple populations that information reaches, and that the medium that we use may, in fact, be reaching populations we are not alert to, and underlying a huge population that are presently vulnerable.

MR. LARSEN: I really appreciate your input on this. I spend all of my days dealing with people who really understand the biological threat and what is going on, and I do not see the stress level with them. I have been concerned about biological warfare for a long

time and I try to tell some people that if you really were not seriously worried about it on the 10th of September do not lose too much sleep tonight. The threat has not changed, just the awareness. But I know that does not help all those people who are worried out there, so I do not have good contacts other than just these phone calls I get, which is probably not a good sample because I do not know how many people are not calling.

DR. SCHREIBER: If you are going to explain biological terrorism at some level -- and if it is not you, it is going to be somebody else. You have to explain psychological terrorism and describe how people can mitigate that, if possible. Maybe it is just understanding that maybe that is the goal.

DR. HOGAN: I was just going to think out loud about the same issue because it strikes me that in the context we are talking the agent is the information and the vectors are how information is transmitted. The people who are the secondary casualties are those who have high exposure to stress or have been previously traumatized. We need to start shifting, if our assignment is to focus on behavioral aspects, over to that side of the equation and we have not thought much about it.

MR. LARSEN: During DARK WINTER Governor Keating kept saying, "Look, I went through the Murrah Building, 27 tornadoes in one evening, and a drought." And, actually, he said the drought was the best preparation for DARK WINTER because it happened in slow motion -- and that is one thing I did not emphasize enough here -- this is warfare or terrorism in slow motion. Twenty-two days after the attack, there were only 2600 dead people in the United States, but the nation was threatened. What Governor Keating kept saying is, "Look, my people trust me in Oklahoma." I do not know if you have ever been around Governor Keating. What an impressive leader he is. Peggy Hamburg, from New York, said, "I would move to Oklahoma just to be in the same state he was governor." For somebody from New York City, that is a pretty amazing comment. He is a dynamic leader. And he said, "Look, give me the facts. Let me communicate to the people of Oklahoma. I can handle my state, give me the facts." The problem is we did not have the facts to give him. We did not have that public affairs plan. I think of what has come out of people here at USIS about our needs and how we are going to communicate with them. I do not think we have that right now. What you are saying is the vaccine that we can pull off the shelf.

DR. HOGAN: This is the first meeting that I have been to since September 11th where we have discussed these issues. My state is in the middle of the country and people are a great deal more mellow. There have been suspicious envelopes but there has not been anything in the envelopes that anybody is aware of yet but we have task forces and behavioral issues are not under consideration. The comment that Bill made about the mental health infrastructure is very true. We have not thought about the behavioral component at all.

DR. HOLLOWAY: One of the issues we need to focus on is the multiple layers that we have heard addressed here. We have the mental health portion, the overall understanding of the biologic effects, and the overall security issues of national integrity. Something that needs to be influenced is the political will and structure, and the very operation of protecting people from being stressed may also protect them from getting

adequate funding for the public health operation, so they can really suffer when they get the attack, so they can really have a huge problem because -- no one has noticed -- probably the Air Safety Bill will never see the light of day because the Congress is never going to consider it in the lower House. That is just one example. My point is that there is not a huge tendency to increase public health operations. There is not a large tendency to examine the mental health consequences of these situations and increase those segments of the budget right now. At best there is an overall operation in which the portions that have to do with a direct attack in some categories are being beefed up, and in which some of the direction of our national defense organization has been changed. There is tremendous work to be done not just in the area of post traumatic stress and the consequences but on another level and dimension which comes back to why we are communicating that has to do with establishing a political will that may be quite different from the political wills that have been so popular in the past.

DR. FLYNN: I concur that DARK WINTER should not be televised. It was for a very specific kind of audience and there is the potential of doing more harm than good. There are at least two things that are not happening in the media that could be very helpful in this situation. One of the things that I have not heard enough about that would be helpful and comforting is the realization that the purpose of terrorism is to cause terror. We focus on the number of deaths, buildings destroyed, number of people screened, however, there is not much discussion about the fact that this is not the goal. The goal is to frighten people, to terrorize people, to destabilize the government, etc. By promoting that message there are some opportunities. The question was asked about whether people are worried. I think they are and there is a major psychological reaction going on in the country. But the positive side of that is the result of people feeling that things are out of control and not knowing how they can participate.

One of the things that I hear a tremendous amount about is what can I do, how can I help, how can I gain some control. This is really a unique opportunity. If we focus on fear and terror as the goal of this, to portray this as a war in which every citizen in this country can be a soldier by managing their fear, by going about their daily lives, by doing the kinds of things that really take away the goal of this. The American people will respond positively to that if they really understand that they can participate in fighting this war in ways that are just as significant as dropping bombs and soldiers going to Afghanistan. That is an opportunity that we have missed.

The other thing is that we are missing the opportunity to really promote the message of resilience and recovery in this, and I ended my briefing of Secretary Thompson with this. I said I do not mean in any way to undermine or minimize the major depression issues, and PTSD issues, and the need to get those services delivered and funded, but my 20-some years of trauma work tells me that the major story at the end of this is one of hope and resilience and strength and mental health in addition to mental disorders, and that I think the presentation pointed that out. An horrendous kind of epidemic, and yet the world went on, and people functioned, cities functioned, and I'm concerned that we hear only the messages about the mental disorder part of this and not the messages of hope and resilience and strength.

MR. LARSEN: I wanted to comment on the thing about what can I do. I convinced Tara O'Toole to go with me one night on Larry King – I love Tara, but I think she gave a wrong answer. A caller called up and said, "What can I do to protect my family?" And, of course, Tara was probably right, but she was wrong. She said, "You can't do anything." She said, you know, "Medical health is a personal thing, but public health from this is strictly the government." Well, I agree with you, Brian.

In fact, one night on Larry King I said, "You know, great service organizations like Rotary that really helped eradicate polio around the world, very dedicated to public health, could become very involved. There's lots of things." We learned in TOP OFF, when the Push Pack comes in. You've got 40,000 pounds of antibiotics on the ramp at the airport, but how are you going to get it to all the people in town? We can't have the Government doing that. We can't maintain that much excess capacity. Service organizations like this could have training for a couple of hours every six months or something, to do this sort of thing. The largest Rotary district in California has called back now and said they want to be the pilot group to do this, and so we're working with them. For one thing, it makes you feel like you're involved, there's something to do. In the 21st Century there is more to being a citizen other than just vote and paying taxes and wearing a flag on your lapel. You have got to become more involved in public service efforts, and that starts right here at home. I've been a pretty lazy citizen myself, but I think that's good for the country, and I think it is also good for the individual, is what I am hearing you say.

DR. MARLOWE: I have heard several voices talk about the necessity for, "tempering the wind for the shorn lamb." Let me point out that there is a danger of turning an entire population into shorn lambs by labeling them as too vulnerable to see DARK WINTER.

DR. VEENHUIS: One of my hopes from this conference is that we could start to get into primary prevention on the psychological side. The majority of American citizens are not right now vulnerable to PTSD, but unless there is some kind of prophylaxis in terms of an active campaign to get the right psychological state of mind into the public we are going to be at the mercy of going through every disaster and discovering this again.

DR. SHAW: Aaron Beck once said, "How you define a situation determines the emotional response to it", and the issue is what kind of definition do we really want to put out there? What do we really think people need to know? What do people really want to know? I think basically people want to be reassured that we are prepared, that we are in control, and that we are taking corrective action. They do not really want to be frightened to death. They want reassurance.

MR. LARSEN: What worries me is that I truly believe that smallpox is a very remote possibility, but other contagious diseases are a higher possibility. So, if anthrax is not contagious, fear is. But now how about if they hit us with something that is contagious? In my 52 years I have never seen this country as united as we are today. But if we get hit with smallpox or plague or some other contagious pathogen then it is not Osama bin Laden that may kill my family it might be you and I am not sure what that would do to the American psyche. I am not sure now because I do not trust anybody. And I think the history of the 1918 Flu that we heard earlier in the conference

is important and relevant here because I think there was some of that then where cities or towns out in Utah or Alaska isolated themselves. Everybody becomes the enemy then. It is like those guys that hit Omaha Beach. They really were not worried about Adolph Hitler, they were worried about the Germans in the pillboxes right in front of them. And in DARK WINTER when all the people were fleeing from Oklahoma to Texas, they were not worried about Osama bin Laden or Saddam Hussein, they were worried about the Okies coming across the Red River, and that is why they went out there and started shooting them, and that is part of the whole scenario there.

4

Biological Agents of Terror & Community Response[1]

Ann E. Norwood & Molly J. Hall

DR. URSANO: I would like to return to Tim Tinker's comments about the question of what message, for what audience, with what end, and to remind us that we have multiple audiences, multiple groups and, therefore, multiple messages. It will probably aid our discussion if we keep in mind which audience we are addressing at any given time, whether that is the audience of the population at large, whether that is the vulnerable population, or whether that is the population who is already at high risk. As a minimum, we should be able to discriminate between those groups -- the presently highly exposed, the potentially vulnerable, and the population at large.

It is a pleasure to ask Ann Norwood and Molly Hall to speak. They are faculty members in the Department of Psychiatry at the Uniformed Services University of the Health Sciences. First, Ann will present an overview of some of the agents that may be useful for this audience to know. We are very lucky to have Ken Waldrup here, who is a veterinarian that participated in the response to the Foot and Mouth Disease outbreak in the U.K. After I finish speaking, he is going to spend about ten minutes telling us about his experiences. Finally, Molly Hall will present a summary of her findings from a survey of state mental health agencies, on their preparedness for bioterrorism.

DR. NORWOOD: Most of the information I am presenting came from the JAMA consensus statements on anthrax, plague, tularemia, smallpox. This is accessible at the Johns Hopkins Center for Civilian Biodefense Strategies website at www.hopkins-biodefense.org. In addition, Randy Larsen's website is www.anser.org. Finally, Bob and the USUHS Department of Psychiatry have posted psychologically based literature of responses to terrorism and biological agents of terror on our Website at www.usuhs.mil. Once there, click on the "Disaster Care Resources" icon and you will find a compendium of useful articles and fact sheets. The parts of this talk that address psychological issues come from a paper for which Harry Holloway was lead author. It

[1] See Appendix 3 for slides.

was a paper published in 1997 when Josh Lederberg had a special edition of JAMA devoted to bioterrorism. Other authors on the paper are Bob Ursano, Carol Fullerton, Chuck Engel and myself.

Some of the fear-producing elements that are associated with outbreaks include the lack of sensory cues (in contrast to a bomb going off, where you can pretty quickly figure out if you are bleeding or not) that make it difficult to know whether or not you have been exposed. Many of these agents produce flu-like symptoms. I commute by the Metro. Last week in the midst of the anthrax scare, I started to have cold symptoms, which made me a little nervous. So, again, the ubiquity of the symptoms makes attribution problems a challenge. The uncertainty about exposure, the fact that the agents have varying lengths of incubation periods and the fact that some of these agents produce grotesque forms of death, as in smallpox, create the potential for terror.

Other factors that make it scarier and more of a terror agent is the potential for high numbers of casualties. In addition, there is limited availability of smallpox vaccine. There is uncertainty about the effectiveness of treatment for some of these organisms for which we have not had a great deal of experience with such as the inhalational form of anthrax. As Randy pointed out, if we confront a person-to-person transmitted disease down the road, that brings up a whole new set of problems and challenges for the mental health community. And with something that has an incubation period the worst case being person-to-person transmission and with modern travel people could very quickly be all over the world.

So far the anthrax in envelopes, in some ways, is a break for the country because it has not produced a great number of deaths, however, it certainly has gotten people's attention. Hopefully as a result of this experience we will work to develop better response plans.

Attribution of symptoms is a major issue following a bioterrorist attack. As we get older most of us experience aches and pains. However, what in the past we would have thought of as the flu, we now worry about whether or not we have been exposed to an agent and whether we are developing the symptoms of plague or anthrax. Scapegoating is a natural response to terrorist events and infectious disease outbreaks. Scapegoating, especially in person-to-person transmitted diseases, could be a tremendous problem. As we read the newspaper and look at TV we experience a certain amount of paranoia. In the long term we worry about people becoming socially isolated and afraid to leave their homes. We also worry about demoralization. At present people are standing tall and united, however, this may wane over a protracted period of time in which case the terrorist's goal of undermining our faith in our social institutions is realized.

The term "mass panic" is thrown around a great deal and it bothers me when the first thing out of the mouth of experts is, "Don't panic." Panic, in terms of a group behavior, is an intense contagious fear that can be seen in situations such as someone shouting "fire" in a crowded theater. If people have not practiced fire drills there is the possibility of a stampede to get out the door and people behave only in reference to

themselves. Panic destroys social organization and roles and potentially could lead to community chaos.

This quote is from one of Laurie Garrett's books that have reviewed several infectious disease outbreaks. She notes, "Panic does not always go hand-in-hand with epidemics, nor does its scale correlate with the general gravity of the situation. Indeed, history demonstrates that population responses to diseases are rarely predictable, and often peculiar." Garrett uses Legionnaire's Disease as an example. The media used very terrifying words to describe the outbreak which had a number of negative psychological consequences. Historically, some of the factors that do produce mass panic include a belief that there is a little window of escape, if you see yourself as being high-risk; or there are available but limited resources, so you want to make sure that you are first to get them. If there is a lack of an effective response to an outbreak, people are more likely to feel helpless and scared and not think rationally. A series of technological disasters and outbreaks have demonstrated that if you lie to the public it is virtually impossible to regain their trust down the road. Three Mile Island is one example of this phenomenon.

DR. DeMARTINO: Your comment is important because the idea of the limited escape route has wide ramifications for what is happening now and what we need to plan for in the future. The idea that there will be mass panic is probably overrated, however, it has some meaning. And because people think it has meaning we probably need to think through some of the ramifications. For example, right now there is not enough Cipro to go around. Even though everyone is saying penicillin and doxycycline are effective, and there are enough of those to go around, people are wondering, "Maybe I should go for the best one , Cipro, just in case." You have to think about how these beliefs affect the messages that people are going to be giving.

DR. NORWOOD: The idea of introducing quarantine may make people want to leave town quickly, if they have that tendency.

DR. DeMARTINO: Would your sense be that if there were enough Cipro for every man, woman and child to take 60-days' worth in the United States, that people would feel like "anthrax, come and get me"?

DR. BARBERA: If they were taking it right now.

DR. DeMARTINO: You do not think it makes a difference?

DR. BARBERA: Right now in the hospitals in Washington, D.C. we are seeing many very sick people from Ciprofloxacin, people with unintended side effects.

DR. HOLLOWAY: Ciprofloxacin is the signal of the problem. The real problem has to do with how people are responding to the medical system and whether they will be taken care of or not and, therefore, determining how they must act in that setting. We should be focusing on that rather than a simple part of the signal because it is frequently not the organism or the agent but the words and the thoughts that are attached to it that determine the behavior and define the vectors and directions.

DR. NORWOOD: Category B agents are at the moderate level of concern. These agents are pretty easy to spread around and they cause moderate morbidity but low mortality. They are also tougher to diagnose. These include organisms like Q-Fever, Brucellosis, Glanders - which was mentioned last night in terms of past biological attacks on the U.S., and Ricin from castor beans. As you may recall Ricin was used in Bulgaria by a secret agent who had it on the tip of his umbrella and stabbed a person with it. Organisms like Staph are in this category. The lowest priority are agents that could be disseminated widely, are widely available and are easy to produce.

There are three forms of anthrax exposure -- the cutaneous type which we have heard about from some of the people that opened letters and got lesions on their hands and legs; ingestion of anthrax-infected meat; and the inhalational form, "Woolsorter's Disease", that used to be found a lot in people who worked with hides that contained anthrax spores. Illness is produced by Bacillus anthracis, deriving from anthracis meaning black, because it produces black skin lesions. We have learned that the size of the spores is important because it determines whether or not they get into the lungs. The clinical presentation for anthrax is with nonspecific symptoms -- fever, shortness of breath, cough, headache, vomiting, abdominal and chest pain. There is then a second wave marked by the abrupt onset of fever, shortness of breath, perspiring and shock. Randy Larsen mentioned the Sverdlosk incident in the Soviet Union where there was an accidental release of anthrax. When scientists went back to study the incident in order to figure out how much had been released and what kind of care people had received, there seemed to be a window of anywhere from 2 up to 42 days after they were exposed before they became ill.

We have heard a great deal about the treatment of anthrax recently. There are a number of antibiotics that are very effective against this strain. There may be a public perception that all military personnel have been immunized, however, that is not the case. Some of the psychological and behavioral considerations associated with this particular organism is that it is not transmitted person-to-person. However, if you do not make the diagnosis early in the disease process it has a high lethality rate. Also, there is a limited supply of certain antibiotics and vaccine.

We have also heard a great deal about smallpox. This was used as a weapon in the U.S. by the British against the Native Americans back in the 1700s. Smallpox is a member of the genus orthopoxvirus. Other members of the genus are monkey pox, vaccinia, and cowpox. Apparently, the Australians have been able to work with monkey pox to make it resistant to vaccine. One of the scary aspects of smallpox is that it is easily transmitted person-to-person. One of the last outbreaks was in a German hospital where people who were visiting patients three floors away became infected through air transmission. Ninety percent of people will appear with the classic presentation of smallpox that we see in pictures. There are also two other ways that people can present, with the hemorrhagic or malignant forms, that are more difficult to recognize and that represent a diagnostic challenge. The virus implants in the mouth, throat or lungs, migrates to the lymph nodes and then begins to circulate through the bloodstream without symptoms where it starts to reproduce. Then about Day 8 it

produces a fever. Days 12 to 14 are marked by really high fever and people are really sick at that point. The classic rash appears at this time - first as blisters and then the blisters become filled with pus. The crusts begin to form 8 to 9 days following the rash. The scabs are not thought to be very contagious because the virus is bound so heavily, but the sheets, towels, bedding and other personal things that have touched patients still can harbor the virus.

In contrast, with smallpox the rash is mostly on the face and the extremities, versus chickenpox which is mostly on the trunk. One of the key discriminators are that lesions appear at the same stage at the same time, which is in contrast to chickenpox where you get little pox popping up over time. Also, in chickenpox, the lesions are found rarely on the palms and soles. In some ways, we have been victims of our own success due to the worldwide disease eradication program in which D.A. Henderson played a pivotal role. Smallpox vaccinations carried a sizable risk of producing bad complications. Because we no longer believed it was a threat, we stopped vaccinating. Vaccinia Immune Globulin is used for treating some of the side effects of smallpox vaccination. It, too, is in short supply.

In terms of its persistence, if smallpox were aerosolized and sprayed around, after about two days, maybe even as soon as one day, it would not be able to infect people. People do not transmit smallpox until they have developed the rash. There can be a delay of up to two weeks between exposure and development of symptoms. It is estimated that with each generation the number of cases would go up by a factor of 10 to 20 after each incubation period. The rise in cases might be even higher since it is difficult to model using today's demographic figures and immune status. The vaccine is supposed to protect if it is given within four days of exposure. The vaccines are believed to be effective for only ten years, so for those of us who were immunized as children, it probably will not do us much good. In the event of a smallpox outbreak people should be isolated at home, if possible, in order to preserve the hospitals as safe places to treat other illnesses. Chlorine is a good way to kill the virus. Smallpox raises all the issues associated with quarantine which have major psychological, behavioral and community ramifications.

According to the news media there is only sufficient vaccine for 6-7 million people, although scientists are exploring whether diluting it will preserve its effectiveness and make it go farther. Efforts are also underway to step up vaccine production. The last smallpox outbreak was in 1947 in New York City.

Plague, also known as "Black Death", is usually transmitted by plague-infected fleas that bite people. Bubonic Plague is the common outcome of transmission by fleas. Bubo refers to an infected lymph node. If there were a respiratory transmission of plague from person-to-person it would produce pneumonic plague. Similarly, pneumonic plague could be contracted if the plague were aerosolized as a weapon. Symptoms usually develop between 2 and 4 days. Once again, we see the ubiquitous presentation with flu-like the symptoms. There are some clues that you may or may not see in terms of assisting with the diagnosis. One of the ways we would suspect a covert release would be if we saw a large number of previously healthy patients becoming very

ill, very quickly. Coughing up blood is associated with plague. Once again, Cipro appears a treatment. Wearing respiratory protection can help limit transmission.

There was a plague outbreak in Surat, India in 1994 that caused 58 deaths, but infected 6500 people. Luckily it was an antibiotic-susceptible infection. There was a great deal of flight from Surat. Unfortunately, private physicians were reported to be the first on the trains. So that was a problem. As we have seen here in the States, people started to gobble up antibiotics just in case.

DR. HOLLOWAY: The information for the Surat plague was managed very much like Three Mile Island -- initial denial, attempts of the local government to keep the information from spreading, then massive reassurance without massive action, and then the various behavioral responses. And I only say that to make the point that there was not a correlation between the manifestations of the plague and the overall behavioral manifestations, but, more accurately, the manifestations of how the local government responded to the plague resulting in a behavioral disturbance.

DR. NORWOOD: There were rumors at the time that Pakistan had introduced this from the Russians. So, there are consequences at an international level from attribution of responsibility and scapegoating. At present, we are witnessing some of the economic reverberations due to the attacks of September 11th. However, if something is contagious and/or invisible it gets even worse. Here in the U.S. there were almost 3,000 calls to Center for Disease Control (CDC) from people that were worried about plague, even though they were not in India. Tularemia is another organism that is highly infectious, however, it is not transmitted person-to-person. Like these other agents you want to diagnose it early and intervene to preclude bad outcomes. Bovine Spongioform Encephalopathy (BSE) is commonly referred to as "mad cow disease" and foot-and-mouth disease. You might have heard of prions in the news, this really killed the beef industry in Great Britain for a while.

DR. HOLLOWAY: There is a paper published in the current British Medical Journal that says that BSE is not the origin of the Creutzfeldt-Jakob special form occurring in humans. It is a very interesting argument and a serious paper. I think most people reject that argument, believing that there is a relationship and that your slide is absolutely correct, but that is a new debate, and it illustrates how as things come back into debate, there will be increased uncertainty about other things associated with it. And then again, this is the Creutzfeldt-Jakob Disease that has been around for a while.

DR. WALDRUP: Hoof-and-mouth disease is basically not a zoonotic condition. Historically I believe there have been six confirmed cases of true foot-and-mouth disease, which is a virus that actually infected humans. So, as a general rule, this is not a zoonotic disease, this is not a human health issue, although sometimes panic about that does occur. There were questions about that in the U.K. It is a very highly infectious virus, producing very high morbidity, but relatively low mortality. Although it does not kill animals, it is an extremely cruel disease. Continental Europe had foot-and-mouth disease for quite a long period of time. They have since used vaccinations to eradicate it from the Continent, but it took 20 years to do it. You can use vaccinations to prevent

clinical disease, but it does not stop the infection. But prior to the use of vaccinations, there was one study published in the '50s that showed for a producing dairy cow, if she got foot-and-mouth disease during production, it took, on average , four years for her to get back to her original level of milk production. So, this is a very hard disease on livestock. In the animal industry here in the United States we try to be absolutely as efficient as possible. Something like this is really an economic thunderbolt to the United States. This is an economic disease and not a disease of mortality.

I was in the U.K. almost the entire month of March this year. I was in the first group of American veterinarians that went over there, so we were really in the midst of the firefight early on. The psychological issues that occurred while I was there, first of all, were movement restrictions. Even though this was not a human health problem, the government asked people not to go places, in order to prevent carrying this virus from one farm to another. In the U.K., if any of you have been there, there is a network of footpaths all across the countryside. And city dwellers in Britain love to go to the countryside and just walk. If you own the farm and there is a footpath on your farm, you do not control it. The public can walk on that footpath at any time they want to. But the government closed the footpaths, so there were movement restrictions, and a disruption of normal activity. People could not go walking again. This occurred in the springtime, and so, during the Easter season, one of the favorite things that the Brits love to do is leave the city and go to the countryside. They stay in bed-and-breakfasts, visit the country pubs, drive around, see the spring flowers, and watch the lambs out in the field – this did not happen. So, there was a severe economic impact on these small countryside businesses. They were failing left and right.

Other activities that were disrupted included horse racing. Even the Queen got involved in some of this, and some of the very famous horse races at Cheltham were canceled this year. Foxhunting, which is a debatable activity over there, was halted. There were also questions of public confidence in meat and in meat products even though this was not a human health issue. While we were there, there was a huge debate about vaccinating animals for foot-and-mouth disease. After some surveys were done, it was decided not to use vaccinations because the people would not want to buy the meat. They did not want meat that had been vaccinated for foot-and-mouth disease, even though there was no public health risk involved in this. It was simply a public perception. So that was part of the decision making process not to use vaccination in the U.K. I want to stress that this was not considered to have been a bioterrorist attack, it was an accidental introduction and there is evidence to that effect. In the early stages public support for the eradication program was very strong. At that stage, however, they were only slaughtering herds that had been confirmed to be infected. The public took that very well: "These animals are sick. This is a terrible disease. Let's put them out of their misery."

Unfortunately, in disease control, that strategy did not work. The disease was still continuing to spread across the countryside. More farms were involved. Let me throw in a couple of veterinary comments. The disease is generally quite severe in cattle, and less severe in sheep and goats. As a matter of fact, sheep and goats can be a real problem to diagnose. They are not that sick, just kind of hiding the infection, but they

are still infectious. Pigs are a little different in that they get a moderate form of the disease. While they are infected, they shed tremendous amounts of virus, much more virus than cattle do, but cattle can become silent carriers. After cows recover from the acute form of the disease, they can become silent carriers for up to two years. Pigs do not. But in any foot-and-mouth disease outbreak, you are very concerned about pigs because of this tremendous multiplication of the virus. So, pigs are particularly targeted in any kind of foot-and-mouth disease outbreak, and pigs are what started it in the U.K. Early on we had farmers that were calling in to the district offices, "I think I have foot-and-mouth disease." We would go out. Sometimes they did, sometimes they did not. There was a very strong support for the program and these people had a very positive attitude: "If I have it, let's take care of it, let's be done with it."

There was indemnity. That is, the government paid those farmers for the stock that was destroyed, and many of the farmers that I dealt with had an attitude of, "You destroy them, we are going to bury them, we are going to dispose of them, I will get my check, and when this is all over, I will start over again." However, as I said before, that policy was not controlling the infection. In late March, the government decided to change policy. Now, when you now found an infected herd you immediately destroyed the immediate neighbors' livestock. This then became a situation in which "Now my neighbor's sheep and cattle are dependent upon my herd." Self-reports stopped overnight. The farmers were not hiding the disease, they just were not being forthcoming. They honestly did not mind what happened to their own stock, but they did not want to be responsible for what happened to their neighbor. So, I think that was an important aspect of this.

Once we started doing this, though, it worked for disease control. If you look at the epicurve for the outbreak in early April, the daily incidence of new infected farms drops off dramatically. This is about seven days after this policy was implemented. This policy was announced on the 20th of February, but not really implemented until the 7th of March. By the 10th of April the daily incidence had fallen fivefold. So, the policy worked for disease control, but it was not popular. The press attacked the decision. Farmers did not like the decision. So, as a veterinarian trying to be involved in disease control, that was a good move. Mental health experts might question the wisdom of that move, and, to be quite honest, I am not sure which is the right side. There was tremendous stress on the farmers. Someone knocks on your door and says, "Hello, I am Ken Waldrup. I am a veterinarian from the United States, I am here to kill your herd." I do have to say, in my own experience, the reputation of the English country gentleman remains entirely intact. I do not think I would be as well received in Texas.

In my opinion, the farmers dealt with this pretty well. There were a few individuals that had registered herds or flocks that they had worked on their genetics for sometimes generations. Those folks were not terribly keen on putting down their herds. However, some of those had frozen semen from their rams or their bulls. Therefore, I think this gave some of them the hope that "I can start over again and eventually replace what I had." I like people like that. I like independent folks that can start over, but there was also a danger in that. There were a lot of resources available to farmers in the U.K. at that time, but they were dependent upon farmers calling in. These

farmers were a lot like those in Texas. John Wayne is a god down there, the strong, silent type – I can handle anything – the farmers did not call. There were suicides. There were a few cases of severe domestic violence.

My suggestion to this group is that there has to be outreach, to borrow a phrase from our Oklahoma colleagues. You have to go to them. These folks will not come to you, it is just not their nature. In the U.K. that outreach was lacking, and I hope we can learn from that.

I really like the term "scapegoating" that was used earlier because in the situation in the U.K., there was definitely a scapegoat. The Ministry of Agriculture, Fisheries and Food no longer exists. It was not their fault. In my own professional opinion, they handled the situation the very best they could, but they died for it. It is now the Department of Environment, Food and Rural Affairs. So, there was definitely a scapegoat there.

There was another aspect of stress, and that was in the responders, themselves - the British veterinarians and the American veterinarians that went over there. I was in the field for 29 days, took two days off, and averaged 11 hours a day. I got a lot of overtime. But you can only do that for so long. You must have some means of resupplying. I am not sure that it is psychological, some of that is just physical exhaustion. However, I do know that British veterinarians are still on the job. I came in, did my dash, then I went home. So, in terms of psychological support for responders should this happen in the U.S., we need to have some way to give these guys some relief. Another difference was that the British veterinarians did not like going to farmers in their own regions and depopulating those herds. Depopulation is a nice, politically correct phrase for going in there and slaughtering animals. So, the American vets did a great deal of that. We were like "hired guns." We came in and did the depopulations, and there was no grudge held against us by the British farmers. The local veterinarians were afraid there would be a grudge held against them. So, that was a lot of what the American veterinarians did over there. We did most of the depopulations, not the British folks.

The last thing I would like to mention is one of the problems that developed in the campaign in the U.K was carcass disposal. That is not quite the same thing as coffins stacking up as Monica discussed last night, but pictures of dead carcasses were plastered all over the media. You saw helicopter pictures of burning pyres all across the countryside. It was deemed in late March that the veterinary infrastructure was not sufficient to deal with this carcass disposal, so it was given to the military. The military was very efficient at carcass disposal, and the military was then actually put in charge of depopulation. The veterinarians diagnosed the disease and then the operation was handed off to a military office.

I got into a long discussion with one of my American colleagues there, that I thought the military would be able to handle this well. Her argument was that they are not going to care about the farmers. She was right. I lost the argument. I was involved in one of these where we diagnosed foot-and-mouth on a neighboring farm, and,

therefore, this farm just down the road, because it was an immediate neighbor, had to go, too. The lieutenant was on his way down the road to knock on this farmer's door and say, "We're here to kill your stock." We were able to hold him off for about an hour, and I went down and visited with the farmer. The farmer knew we were investigating the farm next door, and his only request was, "Can you just give me and my family a little time to get out of here? We do not want to be here when you depopulate our stock." So, we gave them about a half an hour, which is the amount of time they said they needed. We wrote them the permits to leave the farm and go to visit a daughter in one of the towns. Then we came and took care of the stock. I believe there was a human aspect of this that was lost with the idea of being efficient.

DR. NORWOOD: The veterinarians have been wonderful about including mental health perspectives. Like us, the veterinarians often are not invited to the table when we talk about infectious disease outbreaks, although they played a key role in New York with the West Nile Virus outbreak.

DR. HOLLOWAY: Could we get a couple of comments about the BSE and its consequences economically for these farmers, and selling beef?

DR. WALDRUP: There are actually two issues that occurred in the U.K. prior to the foot-and-mouth disease in recent years. BSE was certainly one of those. BSE entirely changed the British beef industry and, at this point in time, probably irrevocably. It will never go back to what it was. In my professional opinion, they are handling it pretty well, but they slaughtered about 60 percent of their standing stock between four and five years ago. At the moment no animal over 30 months of age can go into the food chain.

To give you an idea how that would impact the United States, an entire segment of the beef industry in the U.S. is what we call "cull-cows", Cull cows are the product of people buying cows, they keep the cows, the cows produce calves, but at some point in time she quits producing calves. Then she goes to the sale, she is usually bought, and she will go straight to a slaughter plant. A great deal of our ground beef comes from cull-cows. That does not happen in the U.K. Their number one calf producer right now is a milk cow. They will keep a milk cow for several years, breed her to a beef bull, and then that calf becomes their beef animal. So, it has definitely changed the way that they market beef. But, as I said before, I personally think they have got a good handle on it now. It was very rough on them to start with.

The second thing that happened was actually just two years ago. They had an outbreak of what is now called classical swine fever, what I was taught was "hog cholera." This is an animal disease that is a reportable condition. So they actually had gone through hog cholera. Fortunately, it only affects swine. I hate to call that a precursor to this but, in truth, it was.

DR. TINKER: I appreciate your sharing your first-hand experience, it is very insightful. What should we be doing right now to begin preparing the U.S. public for a possible foot-and-mouth disease outbreak, whether it is naturally-occurring or the result of a terrorist act? And the second part of the question is, I know that the military played

a fairly prominent role in the U.K. response. What should the military's role be in terms of a U.S. response?

DR. WALDRUP: First of all, let me preface my answer by saying that in the United States we have a different setup than the U.K. did. In the U.K., it was MAFF, now DEFRA. There was no differentiation between Federal and State. Here in the United States we have Federal, which is USDA, and then each state has its own state agency. In Oklahoma it is the Bureau of Animal Industries, in Texas it is the Texas Animal Health Commission and, in Arkansas, it is the Arkansas Livestock and Poultry Commission. So, you have to have a partnership between federal and state agencies straight-away in order to respond to these.

About ten years ago the response to foreign animal disease was entirely Federal, but USDA has had such a downsizing in veterinary services that they simply cannot do it anymore. So, in the past five years, the whole veterinary side of that, both state and Federal, has been trying to conform to the FEMA response system where we can utilize that. This has been a birth process, and not necessarily an easy one. However, I honestly can say at the moment, that we are on the way. We are a whole lot better prepared than we were two years ago. Primarily, that has been through conducting a number of exercises. There was an international exercise last year called the TRI-PARTITE 2000. You can get a copy of the report from USDA on that. The exercise involved Mexico, the United States, and Canada. Texas did one, also, back in June. A number of individual states have been doing them since. Florida just had one about two months ago. These were joint Federal-state exercises. So, in terms of preparation, we are a whole lot closer than we used to be.

DR. TINKER: Just as part of that process, are we increasing the public's awareness about the possibility of the outbreak?

DR. WALDRUP: We are certainly trying to in Texas. We cannot speak for anybody else, but we are certainly trying. I would even point to the USDA signs at all the entry points and airports, coming from overseas. Lots of signs and people asking "Are you bringing in food products? Have you been on a farm? We need to wash your boots." So there was a pretty broad-spread information policy about that.

DR. VEENHUIS: When our Office of Emergency Management started gearing up to prepare for a possible outbreak – North Carolina is a very agricultural state – mental health was asked to prepare a plan. In the course of that it was mentioned, though never verified, that there had been 700 farms in the U.K. where the stock had been destroyed, and 70 of those farmers had suicides in their family.

DR. WALDRUP: I do not know that 70 was right. Seventy sounds pretty high.

DR. VEENHUIS: I am quite sure this was another one of those rumors or myths.

DR. MARLOWE: Since terrorism is designed to have consequences, what can we learn about this in terms of particularly the economic consequences both for farmers and

for the veterinarians and the people who work with them, since they lost the bulk of their clientele?

DR. WALDRUP: Let me give you a general answer with regard to the U.K. To this point, the foot-and-mouth outbreak in the U.K. has cost the government 6 billion pounds sterling. That is roughly $8 billion, U.S. The U.K. is the size of Wisconsin. Texas has about 100 times more cattle than the entire U.K. So, the economic consequences of this for the U.S. are staggering. In addition to the domestic livestock, please remember we have a lot of fairly highly regarded wildlife species -- white-tailed deer, mule deer, elk, collared peccaries across the southwest -- that are also susceptible and would be part of any depopulation program. So, there is more than just dollars involved in this.

DR. NORWOOD: Do we immunize livestock for foot-and-mouth disease in the United States?

DR. WALDRUP: There are vaccines available for foot-and-mouth disease, but there are definite caveats to that. The first of which is that there are seven different sterotypes of foot-and-mouth disease worldwide. The vaccines do not cross-protect. You pretty much have to have the homologous vaccine to the strain of virus that is attacking you. Here in the United States, the question is, are we at greater risk from Taibo found in the U.K. right now, or at greater risk from Taipei that is in South America and running absolutely rampant down there? Let me clarify some points about vaccination. Vaccination works very well to protect against clinical disease. It does not stop infection. So, vaccinated animals can still be carriers. The problem with that is -- OIE, the Organization of International Epizootics is the worldwide group equivalent to WHO with animal diseases. If your country has seropositive livestock, you cannot export. So, if we start vaccinating, we would have seropositive livestock and would lose our export markets.

DR. HALL: I am going to talk about preparation for this conference and some of the information that I gathered from individual state Departments of Mental Health. In late spring, the Center for the Study of Traumatic Stress' Bioterrorism Work Group looked at the transcripts and the summaries from the bioterrorism conference that was held a year ago. We generated ten questions that we thought would be reasonable probes to get a sense of what the Mental Health Departments at the state level might already be thinking about or doing in preparation for a bioterrorism event. With that in mind, we called the states that are listed on the slide. Typically, I spoke to the Director or the Commissioner, and then would be routed down to a Disaster Response Coordinator within the Department of Mental Health. Most of these coordinators have only 10 to 15 percent of their time allocated to this task. There were only two states that had a full-time staff member within Mental Health devoted to this kind of disaster response. Basically, the questions I asked were: "Does your state include mental health considerations such as psychological / behavioral consequence management when you are conducting exercises, when you are training,?" et cetera.

Not surprisingly, this was a relatively new notion. People were still highly focused on some of the initial response that would be required in terms of identifying an

infectious agent, and how you would proceed from there. I collected a great deal of information, and I had a wonderful time talking to very interesting people in the course of this exercise. In the interest of time, I am just going to run through some of the key points rather than belabor the discussion around each one.

More than half of the state departments that I talked with did not have any kind of formal mental health representation on their interagency bodies or their bodies that were linked to their Office of Emergency Management. In the states that did have this kind of representation, the common denominator was the fact that the states had been involved in a multitude of natural disasters recently, or there had been cities in that state that had been identified in that 120-city initiative to train and prepare. No one that I spoke with could identify any specific document, plan or paper that was being written or developed specifically to address mental health issues in a bioterrorism scenario. This had not been considered in the majority of states, however, the exception was one of the states that had been involved in the TOPOFF Exercise where there had been some thoughts about communication plans to inform the public. In the TOPOFF Exercise scenario the mental health involvement had basically been confined to how to translate a message into multiple languages over the Internet. There had been no risk communication training, and no working agreements with the media. Again, you have to keep in mind this specifically involves the mental health piece with the media, and not necessarily emergency management.

After September 11th I called back many of the states that I had spoken with initially to see what had changed and found that things were very different now. Back in the spring people had not given much thought to the idea that the response to a bioterrorism event would likely be very different than the response to a natural disaster. Some of the departments had been involved in bioterrorism tabletop exercises. Everyone commented on the very minimal role that had been allocated to the mental health response. In fact, one very articulate individual stated that the whole notion of terror in the bioterrorism exercises was completely absent from the exercise itself.

The states that had mental health representation in their emergency management departments had also been recruited very actively to participate in their agricultural department sponsored working groups that were beginning to look at the possibility of foot-and-mouth disease. I must say that this subject generated a lot of interest and enthusiasm, and people seemed very capable of thinking about the hoof-and-mouth scenario as a template for bioterrorism -they could imagine the grief issues and the quarantine issues were already being surfaced. Foot-and-mouth disease was a vehicle around which people could think about issues relating to bioterrorism.

I asked people to describe their strengths and weaknesses. Not surprisingly, the state departments that already had liaisons with emergency management felt much more positively about the direction they were headed in, especially if they had a very active presence in the trenches, rolling their shirtsleeves up, and working side-by-side with other disaster response personnel. A major weakness that was identified was the huge shortage of trained staff. This has already come up this morning. When you think of only having 10 percent of a full-time equivalent individual in a state mental health

department devoted to disaster responses, it is not surprising that there were strategic plans that had been developed.

In the wake of September 11th, I called these individuals again. What I found was highly variable. Some states told me, "We really have not changed very much." There had not been much change in the formal structure of how the agencies were organized. Not surprisingly the states were doing things like deciding to stand up a rapid response team, increasing the number of personnel assigned to a mental health rapid response team, generating lists of volunteers, and one state actually sent me their mental health annex for their state disaster response plan which was very new. Some of the points made in this document might be of interest to this group: "Terrorism is a direct intentional attack on the mental health of the victims, the responders and the community." Nothing like this existed before September 11th, according to the surveys that I conducted. "Terrorism is intended to undermine our sense of safety and security, we need specific training to address this type of intentional mental trauma. Critical incidence stress is exceptionally high, unrelated to terrorism. Mental health may need to be linked to public information to provide community-wide mental mass casualty treatment. Tailored support and messages are needed for children, school, and special needs populations. Mental health recovery may require many years of effort. Ethnic and religious customs for dealing with remains may not be met due to infection or contamination, which may increase mental health requirements." That was all put together after September 11th, and has already been adopted in the state plan.

Basically everyone is looking for a model. What kind of response should we be developing in the event of a bioterrorism event? There is discussion around Columbine and, of course, Oklahoma City efforts as well.

DR. VEENHUIS: Even before September 11th, mental health in states had already been suffering the consequences of the economic downturn. What support there was for disaster response was diminished, if not already gone.

DR. OLDHAM: It was very interesting that representation did exist in terms of animal acts of terrorism. It reminds me of our discussion last night when Monica was showing from early in the 1917/1918 influenza pandemic, the phase of denial. It seems to me like that is likely to be a factor here. We can accept that something like this could happen if it is aimed at animals, and then we have to cope more easily than if we really have to think that it is aimed at us.

DR. HALL: That was exactly my impression in speaking with people; it was almost like a somewhat displaced issue. They really could get in touch with emotional issues even around quarantine access -- how are we going to get on and off the farms, how are we going to identify farm families at risk, how are we going to outreach to them?

MR. NOVINSKI: We found the same thing. The Department of Agriculture sponsored a meeting regarding this, and specifically asked us to represent the crisis counseling program. In terms of developing a response, we also found that we had to

recognize the fact that our Illinois mental health system is catchment-based. Therefore, we had to look beyond that in terms of the statewide local programs that were able to go in and out of the areas and be deployed before the quarantine was instituted. So, we had to think about a number of things that were different about bioterrorism. To date we have not been involved in bioterrorism or mass violence at all with our state Emergency Management Agency.

DR. SHAW: I met with the Emergency Management Director in Miami because I was concerned about whether they really have a bioterrorism plan. They do not have a plan. They really do not differentiate between bioterrorism and other type of disasters, and their whole model is really predicated on a single aircraft disaster. What came out of that meeting is a desperate search for a template. I wonder if that would not be one of the tasks of this group, to develop a template, some kind of prototypic plan that could be disseminated. These people have no concept of how to go about that task.

DR. HALL: Another area of very animated discussion occurred around the notion of school shootings. When I was talking to people and brainstorming about what some of the differences might be in a natural disaster versus a bioterrorism event, people would say, "You know, we had a school shooting, and our required response taxed us differently. There was anxiety and fear in the community that we had to deal with in the emergency rooms. We had people presenting who were complaining of more physical systems." In terms of a template, the closest experience that had raised the awareness that terrorism and mass violence differed from natural disasters was the experience they had had with that kind of trauma.

DR. PEELE: Did you talk to any of the 120 cities that received weapons of mass destruction training to see if there was any mental health component. I have been in two graded drills in Southern California, and in neither one was there any mental health component.

DR. HALL: I do not know whether or not they have been involved in an actual drill. The states that had a mental health link to the emergency management group tended to be states in which those cities had been actively trained, but to what degree mental health then was actually used or considered a valuable resource to consult, I cannot really say.

DR. URSANO: I should probably mention that although many of you may feel that you were randomly selected, that is not true. In fact, we made a systematic attempt to examine both the 120 places that had received training as well as to try and reach representation from across the nation, from large population and small population states, and with some effort to reach issues of diversity as well, although I think with not as much success as we had hoped for.

DR. HOGAN: Ohio is one of those states that had cities that received the training. We have a link, the part-time person who does crisis response things with us. He goes to the meetings where he is often ignored by the people with uniforms. The comment about the need for a template is very accurate and important.

There are a number of things about the directions of how mental health in states has changed in the last 15 years that have had both positive and negative impacts on our ability to prepare for this. The institutional capacities are greatly reduced. By and large, state mental health systems have been reduced to safety net care for people with catastrophic mental illnesses. So, prevention capabilities, in general, have been greatly degraded. There is increased concern about mental health in the schools that might be just starting to change that. Nevertheless, prevention capabilities have been severely degraded.

Clinical capabilities have also been degraded because what is going on is home health care of adults with the most serious and chronic illnesses. So support that is billed to Medicaid and other payers on an episode-of-care basis means that there is less and less support for mental health infrastructure.

A force in the opposite direction is that there has been a tremendous amount of attention given to response to events, like the school shootings or natural disasters so states, on average, are probably much better prepared to implement crisis counseling post-event - that has been the work that Brian and Robert and Bob have done. So, in some ways, there is a mixed message. But there is a real problem with infrastructure. There is a real lack of awareness in the emergency preparedness community about the psychological dimensions of this, and there is a real need for templates.

DR. MARLOWE: One issue that has not been raised that I consider a behavioral and mental health issue is contending and dealing with scapegoating as part of any biological attack. When we go through the natural history of epidemic disease, scapegoats have always been sought. We have seen scapegoating in response to the events of September 11th. Is this part of the planning of any of our mental health organizations as opposed to police organizations? Humans have scapegoated everything from minorities, Jews in the Middle Ages; dogs who were slaughtered en masse in Early Modern Europe, in England particularly as agents of plague; witches. Now we scapegoat anyone with a Middle Eastern name. Is this part of the template that should be used or that anyone is thinking about using?

DR. HALL: My sense is that there has not been very much systematic intentional development of communication plans and templates on how to address this.

DR. CLIZBE: The Red Cross tried to figure out how to do that, and we really struggled with that. I was thinking about the same kind of thing when Ann mentioned paranoia. To get back to what Tim was saying, the words you use depend on the audience. You can talk paranoia with this group, but do you talk about scapegoating and that kind of thing with the general public? I think the content on the psychological effects is the right stuff, but how should we package it? The only thing we learned when we were trying to deal with scapegoating was that people had not even particularly thought of that. So helping people be aware that this was a possible reaction that they could see in themselves or in their community seemed to be a flash of insight for many. But did that change it? I have no idea.

DR. MARLOWE: I would like to recommend a book which is very valuable even though the title does not sound it. It is entitled Fear in Early Modern Europe. It looks at fearful events including epidemic diseases and various other things and, the consequences which can, as we have seen in some of our communities, lead to violence, to social disruption, et cetera. Scapegoating is one of the central issues here, I think.

DR. HOLLOWAY: I want to be very explicit about how sensitive I think this issue of packaging is. Everybody knows that bad things are happening in America because of homosexuality and the overall liberal turn, and that the final sinfulness of America is permitting the emergence of women's equality and all those other terrible things like abortion. Those things really do disturb the flight of aircraft taking off various places and causes them to fly into tall buildings in New York! And you may think I am making that up – I am not. This was Pat Robertson on national television. And Jerry Falwell was the other person that was in the conversation. Actually, Robertson said it, Falwell responded.

My only point in bringing that up is that we are just at the beginning of a process in which if anti-Jewish feeling has not yet become prominent, we ought to anticipate it. After all, that is one of the reasons given as to why people are attacking us. If I go back to the time I grew up in Oklahoma, I can tell you that that theory is going to appeal to some of the communities out there in a very direct way. That just begins the overall process of this question of attribution and further breakdown -- the attacks on people from the Middle East.

The question of whether we can approach this sort of question is not something that is new in our history. The problem of dealing with African American soldiers coming back from World War II and how badly they were treated is very much a part of our history and an issue that at times we should recall. There were some honestly heroic things done during that period that were good things, and the Civil Rights Movement may have been one of the things that got some support in that.

But we are talking about developing national movements of considerable size, that are extremely demanding of leadership, and that must operate against those social forces. A good portion of that leadership ended up dead from assassination in this country where we usually like to characterize ourselves as not having assassinations. These are issues that we ought to be thinking about now before the troubles are all upon us. However, we are hearing that motif even as we sit here.

DR. TINKER: That is a very good observation. But at the same time we have to learn to accept that as part of the communications landscape there are going to be competing messages, and our challenge is how do we begin to position our message as the most credible message.

DR. HOLLOWAY: Let me then add what I think is sensitive about that, which you may disagree with. I think that if you get into the real world of politics, it is a question also of how you undercut the other guy's message. This is not the game of beanbag as they say in Chicago about politics. We are in a very serious competition about power,

about ideas, about concepts, and in doing that there are, indeed, competing messages. One of the views, which I will characterize as liberal is, everybody has a right to their opinion. Not quite.

DR. PEELE: Molly, you said that one of the states had a rather well developed plan, if I remember correctly. I was wondering, relative to Jon's comments and others about protocol, whether it would be useful to this group to distribute it?

DR. HALL: I did not find any state that had a really well developed plan. What I got from one of the states that has been fairly active is that they now, at the state level, have this annex that I read to you. I could see it as forming a jumping off point for beginning to think about plans that you would develop and import into your community mental health centers. You would have plans in place for your special needs populations. You would have communication plans developed for specific agents. These are just some of the things I would imagine, but I have not encountered anybody who has actually already done that work.

DR. VEENHUIS: In North Carolina we have had a Bioterrorism Task Force for about a year, year and a half, and mental health was included, although we are one of many, many members. We have done at least two tabletop exercises, and those inevitably start to focus on agents' treatability. What comes up again and again is hospital capacity because the hospitals are very concerned that they have lost so much capacity that they cannot possibly handle the surge. Then there is also an ethical concern about physicians, nurses and others not being available, refusing to participate in treatment, seeking their own safety. These are some of the other issues that should be addressed out front in order to address the safety of the workforce.

We are having another meeting on Tuesday where for the first time I have been asked to start to address mental health issues. The other thing is the perspective, "We can handle just about any hurricane or other natural disaster in North Carolina that comes along." Unfortunately, we were prepared for the wrong "next time."

DR. HOGAN: With respect to mental illness, we are dealing with the only substantial illness that has a public delivery system. However, most mental health care is not in the public delivery system, it is in the larger healthcare system, scattered around in all kinds of ways, that nobody really coordinates. There are some points of coordination that I think are highly relevant for what we're talking about here, and that is in managed care firms, or employee assistance programs (EAP) that do touch a very substantial proportion of employees of large firms. I think they should be a point of contact. I have seen some indication that some of the larger managed care EAP people have already been very heavily involved in the last couple of months. I am not sure what a point of coordination for them would be.

DR. URSANO: Clearly, scapegoating has come up and is a very important mental health issue for us to address at multiple levels - both the dangers of our own messages targeting populations that may be injured by them, as well as the way in which our communities scapegoat.

Secondly, a very important question came up around the infrastructure development within the mental health system. It was extremely well said about the way in which our present resources provide funding for some elements of care and no elements of infrastructure. Without infrastructure, there is no ability to expand capacity to reach needs related to disasters in general, and bioterrorism, in particular. So, are there questions specifically about infrastructure development of mental health within local and state areas that need to be addressed in this area?

Lastly, I would like further discussion about coordination with other mental health resources, such as EAP, who we do not have represented here in a formal way. They clearly are a huge group for reaching within corporations and businesses. A wonderful example right now is how do you reach out within ABC, NBC, CBS and the many other corporations struck at the World Trade Center? What are the routes for doing that over a sustained period of time? I would appreciate any thoughts and comments.

DR. CLIZBE: We found that the corporations in the World Trade Center were our most important link to the families, particularly early on. I am sure you found the same thing as you were trying to get a handle on where people were in New York. But, really, by going through the corporations, or what remained of them, they were able to help us get in touch with families and work with families. They supported the idea of the families seeking assistance, and it was by far the most effective way for us to reach people initially. Did the city and state work through the companies in New York?

DR. OLDHAM: They did as much as possible and I agree with you that that has been an extremely important network. But it is a new network and it was not a pre-existing communication channel at all. So it was driven by the crisis. How it could function better as preparation for ongoing and sustained communication capacity, I think, is one of the challenges that we need to think about. There were many striking misconceptions that got magnified in the context of the New York situation. One example of this being that crisis intervention should only be done by paraprofessionals and not professionals. That was not correct. It was driven by the way the Federal funding language is written in terms of the FEMA money. It was not interpreted correctly, so people misunderstood that. And so, all of a sudden, there was this set of things going on, all of which were good, but were getting somehow misunderstood and misstated, and then the coordination was difficult.

Number two, which is really your point, there were enormous numbers of calls for help that went in just about every direction you could think of. The Red Cross was a major vector of a lot of these requests for help, which was tremendously useful. However, corporations often will end up calling who they know. So, for example, here is a likely scenario. The head of the corporation will have on his Board of Advisors somebody who is a major player in the health care industry or, on the flip side, the major hospitals will have corporate heads on their Boards of Advisors. So it will start there. The corporation will call the person on the Board that he knows, who is on the Advisory Board he is on, and then the call will go to that person's department of psychiatry, and it comes in through the academic centers. But that is all a network that, for the most part

is completely invisible to the public and is very substantial. That is part of the reason why I am trying to work at bringing this communication into the room together, so we can think ahead and have a better way to coordinate some of these responses.

I certainly appreciate Mike's point. On the public side alone, the infrastructure has changed through the years, really across the country. It certainly is true in New York as well, where we have the largest state provider capacity in the country. However, we have dropped like a rock in the last 20 years -- Bob, you know as well. So, we have a very much-reduced component of our agency that is an actual provider component, and it has moved much more into the community.

We do have an active link and role that the state agency plays in terms of trying to coordinate community-based care, but it is a very different and less involved process. We do have a licensing and certifying capacity and a reviewing capacity for local providers, and we also work with the local provider organization, but that is a very different level of involvement than the actual operation on the state side.

DR. GLOVER: It might be helpful to give a little bit of national perspective in terms of the shift that has occurred in the public sector. In the 1960s, there were 700,000 inpatient beds in our public, state-run hospitals -- 700,000. This year there are about 53,000 -- 700,000 reduced to 53,000 psychiatric beds. So, if any of you are looking for vacant beds, you know where to find them. But we do not have staff to do that. In 1970, there were 350 state hospitals. We are now below 230 and dropping. That trend is continuing. At last count, there were 29 states who were going through very significant General Fund cuts -- not level funding, but General Fund cuts that Mike is talking about. As he shared last night around the table, he had to offer up closing four more state hospitals. That is when you say, "Here's an alternative to make up the General Fund. I am going to throw the babies in the snow." Right now, several states are looking at significant infrastructure reduction and that is not having the disasters. Many states will say, "We can respond to a tornado, a flood, but nothing of this magnitude", and, in fact, it is a qualitative and quantitative difference. A lot of our commissioners are saying we need to get out of that old disaster thinking and talk about terrorism and its implications, and having standing infrastructure -- not 10 percent FTE set aside -- but standing infrastructure, which is not there right now in almost any of the states. New York and California are probably better situated than all the states for this kind of experience, but none of them feel that they are really prepared.

I would like to comment on the scapegoating issue. When we called the nine states together about what the mental health authority's role should be, several commissioners said, "You know, we have been trying to deal with stigma against chronically mentally ill individuals, and clearly there is some real stigmatizing going on around Arab-speaking individuals." Is there a role that our public sector should try to address up front? Given the Surgeon General's latest document on culture, race and ethnicity and the disparities issue, should states take on ownership of that responsibility?

On the other side, on this call where we got all the nine states' mental health commissioners together, one of the people said, "You know, there was an individual on

a bus to New York, who had documents from the Middle East, started acting a little bizarre. It was stopped in Maryland, I think, and he was taken off to a private facility. When they found out this particular individual was there, the private facility said, "Wait a minute, we do not want to take care of him. We will send him over to the state hospital." Then the state hospital that received him got into difficult questions around confidentiality and the probability of violent behavior to himself as well as others. So, the state government gets pulled in many ways. Right now, I do not think we have the standing infrastructure to look at this.

I want to go back to one other comment - the ripple effects that occur following terrorism. If you talk about Oklahoma, it was not just the bombing, you had the trials, you had the execution, and there was retraumatizing. In Columbine the same thing is going on. We need to look at these events in terms of years, not days and weeks. We need to be looking at infrastructure development in a multi-yeared way, and mental health needs to be at that table.

DR. OLDHAM: I would like to comment on the issue of stigma. Nobody wants any of this to happen but sometimes it forces things to happen that we may have been trying to work towards. One of the other distortions that I found partially correct, but not entirely, is something I have seen in New York. Over and over I have heard people say, "Well, we have got to get all the paraprofessionals trained because the rescue workers, the police and the firefighters do not want anything to do with mental health professionals. That would be a real career problem for them and they are uneasy about the stigmatization." That is an endemic, real problem that we must be sensitive to. But what we have seen is that this sentiment has melted away in the context of the crisis. You just do not see that as a prominent high profile. All of these groups are saying, "We want good help. We want people who know how to provide help and can tell us what we need and provide that." The worry about how it might hurt their careers was erased by the magnitude of the need.

DR. URSANO: That is an important issue about how stigma changes in these settings.

DR. PFEFFERBAUM: I would like to underscore something John said about how the legislation and regulations are interpreted, or how they are written. We had difficulties in Oklahoma City in terms of who should provide care. We wanted to evaluate the treatment that was going on in our federally funded program. We were discouraged from doing that by the people who were providing services because of their interpretation about what could happen with respect to research. So, an evaluation of effectiveness of services became equated with research, which was not something they thought they were allowed to do. I think one of the things we need to do as we look at developing the infrastructure is to also go back and look at the legislation, the regulations, and the interpretation of those in light of the magnitude and qualitative differences associated with terrorism.

DR. BARBERA: I also wanted to go back to what you were saying, John. There are a couple of things that the professional psychiatric and psychological communities need

to look at so that they are better able to address these things. One is that they are completely different operational systems than what we do every day, and even perhaps what you might want to do in a stepped-up period. We learned a long time ago, and business learned a long time ago, that there is a huge difference between business management and business crisis management. That is why business crisis management is a specialty.

The first response world that I am part of learned a long time ago that we need to use instant management systems that are different than the way they run operations every day. I do not think, other than some attempts that Brian and his group have made, that we have a comprehensive incident management structure for the competent professional psychiatric and psychological communities to get into. And so what you have is all these other folks popping up here and there because they are accessible and they are immediately available.

So, how do you actually not just do mental health, but how do you get mental health issues into everyday operation? This really is key. And how do you get this informal group of folks who have good ideas but do not understand the operational framework, to be helpful during an event is also key.

I have fought against many of the psychological intervention attempts in my first response community because they are not being done very scientifically. But they are available - and there is that "pill mentality" that America has – so, go do what you need to do and then we will do a Critical Incident Stress Debriefing when you are done, and everybody should be fine. And if everybody is not fine, well, that is their problem. So, that is one of the major things.

The other thing you have to look at is that psychology and psychiatry usually are done at the micro-level, e.g., "How do I help the person who is in front of me?" For these major events, we really need to carefully evaluate and research and come up with macro mass intervention strategies. A couple of days after the Trade Center bombing, Brian and I were asked to attend a briefing with the Health Commissioner for New York City. The Commissioner asked about things that we should be looking at, and someone brought up the mental health issues. He had already been thinking a lot about that. When he asked, "How do we take care of the school kids?" My answer was, "What message is it you want to provide to all the 12th graders in New York City? And it should be one single consistent message, which is very different than the message you are going to provide to the 9th graders and the 2nd graders and the kindergartners."

But the main thing we need to do is get good information out there that takes in the mental health considerations, and do it at the macro level. Then we can start looking at the individuals who are having more difficulties than the rest.

5

STATE & LOCAL RESPONSE PLANS

Moderator: Brian Flynn

Panel: Steven A. Marshall, Robert DeMartino & Alvin Collins

DR. URSANO: Dr. Brian Flynn has worked for many years on this topic, which has been recognized by his promotion to Admiral. He will head up the panel.

DR. FLYNN: Let me introduce the other panel members. Bob Malson is the President of the D.C. Hospital Association. Alvin Collins is the Chief of Staff for Governor Glendening in Maryland. Steve Marshall is with the Bureau of Communicable Disease in the Wisconsin Department of Public Health. Robert DeMartino, who is on my staff, heads the activities in bioterrorism, suicide prevention, and child trauma.

When we talk about state and local planning it is helpful to provide context. We have a FEMA-funded Crisis Counseling Program that is almost 30 years old that was designed for natural disasters. It has been tweaked and modified for terrorism. I am not sure what we are going to do with it for bioterrorism and it is an evolving situation. Even though it has some flaws and a long way to go, it is comforting to have a piece of legislation that institutionalizes some mental health response after a disaster.

From my perspective, the bad news is that while FEMA has been extraordinarily generous and willing to fund services after an event, they have funded virtually nothing in terms of helping the infrastructure get prepared for that event. FEMA does provide funding for State Emergency Management Agencies, but I do not know of any cases where that money has actually moved to the mental health authority to integrate them into planning. I know for a fact that there has been no independent funding of mental health authorities to do the activities that State Emergency Management has been allowed to do. It is a major shortcoming because that is what has happened at the state level, with the exception of very few states. There is a part-time person in every state identified as an emergency coordinator but that person has many other responsibilities and does this part-time. They get pulled into this full-time when something happens. There is a virtual guarantee that planning and preparedness activities get short shrift.

We have tried to remedy that unsuccessfully with FEMA. My hope is that we may be able to remedy some of that following the events of September 11th. There is a major supplemental appropriation package that is going forward in stages. One of the elements of that package that I put in there was a significant amount of resources for state and local government to build and sustain the infrastructure and to do the new kinds of planning that are going to be necessary to deal with all kinds of terrorist events, including bioterrorism. Some of those requests are successful and some of them are not. The more specifics we can provide about what is needed and what the priorities are, the better we can make that case.

We face dramatic new challenges particularly in the bioterrorism area. One of the things that is different that has significant planning implications is that in terrorism events and bioterrorism events the command-and-control structure is different than what it is in a natural disaster. If states are not thinking in that direction it is a new cast of characters that you are dealing with and post-event is not the right time to start meeting those folks. There needs to be new relationships with the Health Department. Every state is structured differently but in many states mental health authority is not intricately linked with the state public health or local public health entities.

Risk communication is a major activity in these kinds of events and I have not seen that as a major focus for state and local planning in natural disasters. Part of the problem is that we believe in the mental health preparedness and consequence management for bioterrorism, and that while there are some things we could learn from other kinds of events, in effect, we are building a new field here. It is different enough that it is analogous to that.

My fear is that we get the money to build a structure and to provide technical assistance, and we do not have the content. We do not know what is there. I see that as a challenge. I would hate to have the house built and nobody to live in it. The other challenge in terrorist events is that we have stovepiped systems. The public sector does not relate well or easily to the private sector in mental health. When an event hits like it did in New York City it clearly involves both. We do not have the structures or the mechanisms, and clearly that is a planning challenge for both states and localities.

DR. MALSON: I am President of the D.C. Hospital Association and I chair the Metropolitan Washington Council of Governments Bioterrorism Task Force. That means that I have a great deal of responsibility and no authority. That makes it easy on a number of fronts and I am going to talk about one specific example which will bring to bear a number of the issues you have been discussing. My example is how the health community responded to the anthrax incident at the Hart Senate Office Building on Monday and some of the challenges that we faced, all of which I think culminated in making this an excellent TableTop exercise.

We are not selling the house and moving to West Virginia because it would not matter. The bottom-line message is that anthrax is probably the exact thing we would have wanted to happen if we could have picked the one thing for the folks to get started

with, because it is not contagious. Once we get the first one and we identify some elements of what the strains are, we can jump on it right away and shut it down.

Dr. Barbera chairs my Emergency Preparedness Committee at the D.C. Hospital Association. He and his colleagues were very instrumental in getting something important started, which is what we call our "Hospital Mutual Aid Radio System." It connects all of the ERs in our 18 hospitals in D.C. plus the National Naval Medical Center here in Bethesda and Malcolm Grow Medical Center on Andrews Air Force Base. We do daily radio checks and once a week bed checks. Last year we were awarded a $40,000 grant from the U.S. Public Health Service Office of Emergency Preparedness in Rockville to do a study on how to expand that from just D.C. to include close-in hospitals in Maryland and Virginia. We did the study and looked at all the high-tech elements. However, we found that it was not worth it. It was expensive and took too long to get the licenses. We prefer our low-tech radio that works well and only requires the ER nurse or physician on duty to push the button. We do not need a communications person, but we could not get them to join before September 11th. I think that challenge is behind us, so now they are beginning to come on.

The key challenge for us regarding the Senate Hart Office Building was who is in charge. I say this because the first 21 years of my life I was an Army brat and Navy vet, so I like to have short answers to things. I used to say, "Look, there are four people in charge -- the President, the Governor of Maryland, the Governor of Virginia, and the Mayor of the District of Columbia." For the press you can always get that out of the way and once that is out of the way, you can get down to dealing with the facts at hand with regard to any specific incident and how you are going to deal with that.

For our challenge in this city on that particular day, we found out it was not just those four people, but there was those four plus another 535. The FBI can get me into any building I want to get into that the Feds control except Capitol Hill. When it comes to Capitol Hill, it was an interesting day. Once it was decided that we needed to jump on the situation, the "we" we found out to be the Office of the Attending Physician of the Capitol, which is Admiral Eisold and his very small staff. They are there for the members of Congress and the Supreme Court, essentially, not the workers. The CDC came in as quickly as they could. They made the determination that it was an event for them and that they could handle it. The city should stand back. The city was the public health community and the private hospitals. We exercise all the time under Dr. Barbera and others' leadership in that field and we work very well together. We were not used to having something right in the heart of our town take place, in a real or exercise context, where we were not invited, welcomed, or informed, particularly once people got tired of standing in lines and began to drift into our hospitals.

By Tuesday afternoon we set up a conference call where we had all of our hospitals online, plus the other people that we could begin to get online with us, including the Department of Health, and we began to deal in real-time with the perspectives each of us, our needs, our services could offer, and how to connect. What we were not able to do was to get any information from the Federal Government at all, outside our own group. By our own group, I mean the Walter Reed, Malcolm Grow, Bethesda Naval,

because they are the health side. Those of you who wear those uniforms when you are not in conferences like that know exactly what that means. There was a split there. We were not able to get any information until Thursday, when it was clearly decided by CDC, I believe, that they were going to take charge of all of the people on the Hill, and any folks who showed up at the hospitals needed to be sent back. We also got word from our Department of Health, allegedly from CDC, that we were to follow that modality and that they were going to see everybody 24/7.

Around 6:00 o'clock when we stood-down our response teams and I went up to the Hill to check things out, somebody called me and told me, "Guess what? They're going to shut down as soon as they see the last person in line." That was a real challenge for us because our information had been that if they showed up at our ER's we were not to see them but to send them up to the Hill. If they sent them up to the Hill and they are shut down, then the PR explosion would happen and we would all be looking very foolish. The first two police officers that I met at Capitol Hill, I was able to talk my way through. The third one I wasn't and the fourth one I wasn't, and I did not want to tell our ERs to open up until I had verified that information. I saw Connie Morella, who represents this district where we are all sitting in, and I made up a lie and I said, "Connie, let me tell you what they are going to do to your constituents." She took me by the hand and walked me past all those police officers, into Admiral Eisold's office, where we verified the information and got back to the D.C. Hospital Association. We got everybody online and drafted a position so that we could at least for that night be able to deal with any of the Capitol Hill staffers who tripped into our ERs for screening or testing, or psychological counseling. Whatever it was that they needed, we needed to be able to respond to that.

That was a great exercise in terms of showing us where the real gaps were. We practice in this region all the time. We do TableTops all the time. We are good at it, -- not only the District, but also in conjunction with our colleagues from Maryland and Virginia. But the idea of Capitol Hill itself, we had not fully thought through what it meant and how we were not going to be able to connect with each other.

This is a new era in terms of homeland defense, but what it means to us in the health community is the bureaucracies are not going to be there for us and we are not going to have the policies and procedures in place. The key here is to connect with your colleagues in the public safety community, the EMS community, and all of the folks who you are going to need in any way, and develop those relationships. Get the e-mail addresses, the cell phone numbers, the land phone numbers, and then practice, because it is not going to be the command structure that's going to get you through this, it's going to be the following three items -- communication, communication, communication.

There is allegedly a sign down at the FBI Academy in Quantico that says, "If you don't know them, they are lying." I do not know if that is true, it is apocryphal, or they just use it for training, but it is a good thing to take away with you. You have got to know these people. The folks who wear uniforms, whether they are police or fire, do not always know the rest of us, and in this arena we really have to get to know each

other because if they know you are on the same team, then you can get through these lines, make the decisions, find out where the challenges are, and then on-the-spot decide what needs to be done. It is not going to be the plans that are going to get us through this, it is going to be the fact that people who know their areas of expertise, whether it's mental health, fire, public safety, police, can talk through the incident and then develop the appropriate response to that incident.

DR. BARBERA: I would like to second what was just said. What I observed in talking to my colleagues in the hospitals, was that the mental health issues we saw in the last week were related to lack of information, bad information and conflicting information. People who were anxious were anxious because they could not trust what they were hearing. We could not argue with them because we could not trust what we were hearing because we were not sure of the sources. Things would change, and we did not have systems to know that things would change, i.e. send everybody back downtown when, in fact, they had decided not to stay open overnight to see all the people they told us to send back downtown. We should look at how we can fix mental health to be able to deal with people when they get bad information and conflicting information. But it is a huge problem when you do not have an authoritative source that people can trust giving good information. Good information does not mean it has to be factual, it has to be what we know at the time, and why we know this. It includes negative information, information that is usually considered useless.

To us in the medical community, to know that they had 3,600-some negative nasal swabs from the Capitol several days after the incident was actually very useful information because everyone knows 31 people had been exposed. It is very helpful to know how many people were in the building, who had been tested, and who were not exposed. That is still not public information. Those are the kind of issues that are driving us literally crazy.

DR. FLYNN: I would reinforce that. Those problems continue down there and it was a real object lesson in the importance of accurate information. Most of the problems that are going on now are because information is inconsistent, inaccurate, incomplete, and you are dealing with an exposed population that is bright, assertive about their well being, and responds extraordinarily well to information. That is the vehicle. That is the vector for getting us there, and we are not doing it well.

DR. BENJAMIN: We have the same problem in Maryland, particularly down in Southern Maryland where many of our hospitals are the constituent hospitals for people who work in the District of Columbia. The other problem it clearly illustrates is the crossover effect. It is not just the patients and individuals that worked in the Hart Building, it is everyone else who has heard those messages, or did not hear those messages, which are flowing in. They did not work in the Hart Building, but they spent some time on Capitol Hill, somewhere, maybe even outside, visualizing the Hart Building, and they did not have a clue as to whether or not they needed to be seen or not. You have lots of people communicating with the public on that message and you really need to have a single message. The sooner that message can get to the public health officials not only in the city, but in the surrounding jurisdictions, as a single,

focused message, the better off we all are.

DR. MALSON: One of the things that is really important is that our hospitals and our private physicians in the community are being called upon for the first time in this country to play a public safety and public health role, and they are not funded for that purpose. We do not have the money, and we are being left out of the loop when decisions are being made. We cannot be informed of those decisions when we have the expertise. It makes no sense. The policies and procedures that have traditionally been in place do not yet allow for that.

We have to figure out how to quickly leap over that barrier and make sure that the people who have the resources and the information are at the table when the issues are being discussed so they can contribute. We are not trying to take the place of the governors or the mayors, but the governors and the mayors have to hear from us about the issues that they are concerned about where we are the experts. Those policies are not there.

DR. MARLOWE: One of the most consistent observations in both World War II and Korea, in combat psychiatry, was that people in units that had good, clear, consistent information provided to them at all times in the combat situation, were at the lowest possible risk for combat fatigue or combat stress breakdown. It tends to be something that gets forgotten or, as we all saw in the last week and a half, obfuscated by people who do not know what they are communicating.

DR. BENJAMIN: Do not narrow the group that has combat stress to just those people that are involved in the event because I can tell you that every one of my state health officials and every one of my state health officers, is suffering extreme fatigue. They have the universal fatigue and stress from the Twin Towers event itself which has not gone away, but also the minute that happened, the public health community turned on their surveillance systems. While you have those marvelous people in New York that are digging out from that tragedy there, you have around this whole country public health people that are still doing exactly the same mission, and they are responding as victims. They are angry. They are short. They are fearful. And they are communicating that to their staff and the people around them.

DR. HOLLOWAY: We used to have a question in the space community when things were not going right, and that question was who owns this problem? Does anyone own this problem now so that it is going to be approached, or is it just out there floating somewhere?

DR. MALSON: It is my view that the ownership of this problem rests with everyone who has the title of CEO. That goes for corporate America, it goes for our state governors and our mayors, because there is an absence of any essential command-and-control authority that can make something happen under our constitutional sense of government and a split between the Federal and states. We are not going to change that in our lifetimes. We are going to continue to have that. We are going to have this multi-faceted governance system that is going to be with us. The key is to recognize that, but

then to make it work, because we can make it work. I do not think that is a problem that we can not decide. I think we can, and we do, see evidence of our ability to get together and recognize the strategic as well as the local problems, and then try to sort out who is the best suited to address those elements. But I do not think we are going to be able to develop a unified approach to these issues.

DR. HOLLOWAY: Do the CEO's and the people you specified know that they own this problem?

DR. MALSON: Those of us who have been working in the District of Columbia through our Hospital Mutual Aid Radio System are probably the closest to it. Whether you want to say that they do own it or not, I think we might. We have got a better handle on it because we have been practicing it. We got Dr. Molly Hall to join us on our Council of Governments Bioterrorism Task Force last year. We keep reaching out. We want to make sure we get these different institutions involved. I did not have a clue as to why I wanted USUHS in it, but I knew she was a psychiatrist and knows the psychiatrists we met. I know these are people who link to our mental health community from the Federal side, and I know that we are going to need all the help that we can get. So we keep reaching out and trying to make sure we have got all the right people at the table so that they can go back to their institutions and plug-in and make sure that they are giving the appropriate advice and input.

DR. OLDHAM: There are many parallels in New York. There is not an existing good communication network or system that was previously in place and that could easily be accessed for communication. We have the Greater New York Hospital Association, which is probably comparable to yours.

DR. MALSON: We operate at the state level.

DR. OLDHAM: But this is an organization of private hospitals and the general hospitals, and there is not a good, ready-made communication between them and the state/city/official public sector. The patients all come into the emergency rooms, but they have got the emergency rooms and there is not a good information channel between them and the public officials who are trying to work out a response. We need to try to be sensitive to the needs of those hospitals because there are many ways in which that is an important dialogue that needs to happen.

DR. MALSON: I hired the Retired Deputy Surgeon General of the Air Force last week, Mike Wyrek. He is my new Director of Contingency Planning. I made up that level. We are running around, trying to hook up with the military people (flag officers do relate to flag officers whether they are retired or active, because you all retire at some point). They can make that kind of connection. Also we were trying to hit the state and the city levels, too, because for the first time in a long time, people are looking for the cavalry to come over the hill. The military is there for us, and they have to be ready, but they have all got restrictions on them outside the health community. We have MOU's with all three of our hospitals here, so they don't have to wait for the President of the United States, they respond just like my private hospitals. That is a very unique role in

the military and it also gives them a link back to the non-health side of military as being inside. We have all these generals and admirals we are connecting with, and we were also trying to get the Public Health Service in. It is important because that family that is there in the background before September 11th is now being pushed to the foreground. Our private hospitals and our elected officials are looking to them for some leadership. I am not sure that Governor Ridge and the President have yet fully digested that part of it and tried to figure out how to utilize those services which are available.

DR. MARLOWE: Since so many of our hospitals are now for-profit making enterprises for stockholders, how does that figure into the equation in terms of their collaboration in a public health modality?

DR. MALSON: We have at least two in the District of Columbia. George Washington University Hospital is split; it is a joint venture entity. The majority owner is Universal Health Systems out of King of Prussia, Pennsylvania; the minority partner is George Washington University. We have Greater Southeast, Hadley, and there may be others. We have at least three hospitals in D.C. that are private.

To date, there has been no divergence of views, opinions, or willingness to participate between the private hospitals and the publics. There is not likely to be as long as the terror exists in the hearts of the shareholders. Once that stops and they start clearing their throats and looking at their bottom lines, then I think we may see some divergence in that approach.

DR. BARBERA: The margin is so tight for for-profit hospitals and not-for-profit hospitals that there's very little difference. It is not that they do not want to participate. It is not that they want to cut into their profit margins. Most hospitals honestly are worried about whether or not they are going to survive financially.

The medical economics are such that the profit margin, whether you are for-profit or not-for-profit, is so tight that they have nothing left to fool around with, and they don't have a way to go get it anymore. You can not charge more for services because that is fraud by Medicare, and the HMO system has been set up such that there is nowhere to go to get the money that it takes to do this. That is the problem that has to be recognized because the Federal Government and the public look at hospitals as moneymaking enterprises. I am saying this as an economic reality people have to recognize. Do not differentiate between public hospitals, not-for-profit and for-profit hospitals. Public hospitals have an even bigger problem because they can only follow certain funding lines. A for-profit hospital can say, "Hey, it's good for business to look like we're helping the community, so let's do that." A public hospital, if they do not have lines that say "this is what you do", they actually can not go and do that. I worked for Health and Hospitals Corporation in New York City for seven years, for Jacoby Hospital. They could not go out and do this stuff because if they did, they would have gotten in trouble with the auditors.

DR. MARLOWE: That leads to a policy question. Should there be Federal and state subvention to support the public health role that hospitals are now going to be

forced to play?

DR. MALSON: The first focus is to have the Government, Federal, state and local, recognize that hospitals and private physicians are on the frontline and have to be at the tables. Once that recognition takes place and we get to the tables, we will make sure that the message is delivered about what we can do and what we can not do with regard to our present funding, regardless of where we are. At that point, if they want us to do these things that we are being called upon to do, there has to be some focus given on all levels as to how to find those funds and how to channel them in.

DR. BARBERA: When we say hospitals, it is also mental health aspects. We tend to forget about the first-line people in mental health, and they need to be tightly tied into all levels of government operations so that they can bring up important points like that there's going to be more anthrax spores found in different places. You know that given the way stuff is disseminated.

It would be important for somebody to be out front saying that finding a couple of spores is not a big deal and, if it was, lots of people in Texas, where they have had anthrax going on, and in Minnesota where they have had animals die of anthrax, would be dying, and they are not. It takes a fair amount. It is very similar to checking water before people swim in it for coloforms. If you find a couple of coloforms you can still swim in it, it takes a certain amount to say it is dangerous. I have not heard anybody saying that message publicly. As we start to find more spores in this post office, and we start to find more spores in that letter carrier's truck, and we start to find more spores somewhere else in the Hart Office Building or somewhere else on Capitol Hill or somewhere else in New York, we are going to have continued panic. Right now, if you survey America, they think that one spore is going to jump out and kill you with a knife. We have not demystified anthrax, let alone smallpox or anything else.

DR. FLYNN: This is a very important issue. It does not reside only in the hospital system; it is in the entire health system where you have the same issues with managed care organizations that are providing the health coverage for businesses. It is across-the-board.

MR. COLLINS: You do not need to talk about mental health because mental health certainly is a subset of all the issues that you just were outlining as part of your comments. I am going to focus on the note sent to me to come down and talk about the mental health aspects of some of this and share with you what we are doing in Maryland.

Let me acknowledge two very important people. The first most important person is Dr. Georges Benjamin, who is the Secretary for our Department of Health and Mental Hygiene, and who struggles with these issues more than daily. Barbara Carey is from our Mental Health Administration and works with Dr. Benjamin. In Maryland we have some of these systems together structurally. How well they function is something we are striving to improve upon.

I finally got home last night fairly late, and then got a call from the Transportation Department. Someone decided they could prove that the security system did not work, and jerryrigged a knife and a laptop computer, and somehow got into security at Baltimore-Washington International Airport. That becomes a media crisis and a media feed. This person got halfway to where they were going and says, "I've got this knife, call the FBI, and I want a press conference." That is the way things have gone. Not only do we have the real people, we have all these other copycats that you have seen examples of this week, who have decided that for whatever reason, they would continue to attempt to show that we are not doing as well as we should.

I am here today as the Chief of Staff. I bring you greetings from Governor Glendening and Lt. Governor Kathleen Kennedy Townsend. We have September 11th, but before then you probably heard about the notorious or historical or now-famous CSX train derailment. That train tunnel fire went on forever, five weeks or so. We had the September 11th situation that occurred in New York and here at the Pentagon. We are very close to the Pentagon and we have Maryland citizens that were over there, so obviously we were engaged in that. A few days after that, we had the famous tornado that came through and committed quite a bit of devastation in Prince George's County, and up in the Laurel area, and we had two daughters get killed, who were very close to us in terms of the administration. A couple of weeks ago we had the Army missile crisis on our Route 70, when the Army attempted to move some missiles through one of our major highways and the truck turned over. We could not decide whether the Army should be the lead or whether the state police should be the lead. 16 hours later we finally got that road open.

We had an alleged chemical problem in the city of Baltimore, and we had an airplane to drop some mysterious substance on the Eastern Shore a few days ago while we were trying to deal with the Metro incident. That was the day when somebody dropped a vial at the Metro and everybody went bonkers. I was having a bioterrorism meeting and all at once, half the leadership in the meeting scattered. "Where are you going? Well, we have this Metro incident. " They came back into the room and we finally figured out what was going on. We got through the meeting to talk about some of the structural issues in terms of response and to see where we needed to improve. Our Governor is pushing on this a lot. A lot of that has ended up being delegated to me to make it happen. As those guys went out of the State House, they got the phone call about a mysterious airplane that dropped the mysterious substance on the Eastern Shore, so those same folks went tearing off to the Eastern Shore.

My point is that if you think about all of these things in terms of human responses to them (we normally go through those steps of grieving) not only has our work force continued, especially our emergency response people and our mental health people, to go through these incidents themselves, but we need to think about what communities are going through. We need to think how do we as professionals begin to design those response systems. One of the things that we have not focused on was to hear what your thoughts were around the mental health pieces of this. From the highest CEO level, we have not begun to focus on that. We had two telephone calls yesterday from the Administration. The first one was Secretary Thompson, for governors only, early in the

morning and in the afternoon was from Governor Ridge, Director of the Homeland Security Office.

I urge you to put a sense of urgency on what you are doing. If we continue to deliberate and not come through with answers and not come through with directions-people such as myself, the CEOs, we are all looking for answers that we can implement quickly. From the CEO perspective, we are all ears. We need to hear what we can improve and how to improve those things within the realities of where we are. We seem to have these crises a minute. We had an anthrax scare up in Baltimore. Some of you may have seen that. What you did not know was that the real anthrax scare was in Annapolis, in a building down the street from my office, where we actually had something there.

The media has gone hysterical moving from place to place. The response people are. How do we deal with this? The issue is how do we make sure that the lead person in health and mental health begins to drive the agenda more than my Adjutant General, more than the colonel of my police forces, more than the State Fire Marshall? How do I get him to have a continuing and meaningful role, to begin to have some directions over those structures when it is appropriate?

We have this issue about chain of command and command structures. That is one that we have figured out how to do in terms of immediate response. The question is now, as we get into the mental health issues, how do we move the health people out in front of that? That is a real struggle for some of the health officers. One just told me yesterday that health officers in some counties cover the mental health portion and in some counties they don't cover the mental health portions. How do they come to the table with the County Exec, a bunch of County Commissioners who have traditionally looked at their fire department to be the lead, or at their local sheriff to be the lead? How do we -- and we are searching for your support and answers there -- move the appropriate health and mental health people forward and when we need to do that?

We have a new atmosphere. The whole context of what we are dealing with now is different. This whole piece about emphasizing returning to normalcy is something that we have been saying from the highest level. You heard the President talk about that. My Governor has talked about that. My Governor and four other Governors and the Mayor from Washington, D.C. went to New York a couple of weekends ago, they went up shopping, and came back to D.C. They did a show here as well, encouraging people to come out and spend and return to normalcy.

Then I get the comments "Well, you have got to be nuts to talk about returning to normalcy. How can we be normal when all these other things are going on?" What is the message that we should be giving out? We need to hear that from all of you. Dr. Benjamin needs to feel comfortable that when he is advising the Governor of Maryland, he has his colleagues, the people here at the University and across the country, saying this is the right thing to say at this time. You return to normalcy while at the same time you have an anthrax scare down the street. It is hard for people to do. We have been doing things to symbolize to people we should return to normalcy. We have been doing

things to symbolize we should try to get through September 11th as best we can while acknowledging that, but also to say life moves forward. I am not sure we do those things very well. We allow staff to have moments of silence. We have encouraged them, certainly from Annapolis, to attend certain services at a certain time. We had bells ring out across the state at the same time to acknowledge our grief and our sorrow there. But at the end of that process, we have to begin to help the workforces to move forward.

We have encouraged our supervisors and our cabinet agencies to allow appropriate time for people to continue to think about the process and to move forward. Is that the right thing to do? What is the mental health process that we should be doing? We do not have enough mental health counselors within the state structure to begin to move some of these processes forward. It is a whole new context, the whole realization that bioterrorism is upon us. How do we begin to help citizens who are anxious, at best, probably worse than that, and begin to channel our energy in such a way that we can have it in a responsible vein?

One of the telephone calls we had a few weeks ago was about hard case security. We were worried about nuclear facilities, etc. We have one in Maryland and some other utilities that we have concentrated on. We have a lot of Bayfront and we have to worry about the coastline. It also talked about being mindful of airplanes, small airplanes, and aircraft that are in some small airport or maybe parked in someone's backyard. Be aware of fire engines or emergency ambulances or what have you that belong to a small county or small volunteer emergency group. If someone was to get one of those things, decide to drive it into an emergency room and throw something in, who is going to stop an ambulance going to a hospital? You have additional stress on the hospital workers, on our workers, and the volunteer firemen. One of the questions that came back from one of the Governors was, "Well, how do we do this?" You have to enact all the citizens out there who want to get engaged -- the retired military units and the VFW. I said all I really need now is a bunch of old guys in uniform.

They mean well, but we have to train them. We have to make sure this is appropriately done. How does government get those resources there? How do we engage the mental health professionals who are now retired and have related skills, to come forth and be part of the networks within Maryland, or within your particular states? How do we quickly get them up-to-speed and get them prepared to be onsite, ready in the community and ready to do something, so they can be of help as we begin to talk about moving people from a hysterical stage to one in which we can begin to do some beneficial work.

The Maryland Health Administration has done some things. Some of these were in place before and we continue to work on them. In Maryland we have a 1-800 crisis hotline for people to call-in for mental health support. That number was there before but now we are trying to make sure people are aware of that hotline. We have it out on the Internet. We are advertising it on radio and TV. We are letting people know that we are there with at least that limited resource. We have also published some guidelines and information to parents on how to talk to their children about the September 11th event and the other events that have occurred. We are going to have to retool that and

talk about how do you begin to talk to your children about a constant state of alertness, and what that means. We provide information about kids walking to school, but now with anthrax so close to them, we have to provide information about how to talk with children so they will be aware of the issues, while at the same time not have them become hysterical. We do have commuter stop-in mental health centers. We have extended the hours of operation at facilities where people can stop and talk and get counseling or peer support.

One of the other things that we have done is that we have been searching all of the hospitals to see that we have additional beds if they are needed. Thus far, we have not needed any additional beds, and that is good and bad news. The good news is that we have not needed additional beds. The bad news is, if we do need them, we have a problem. Like many of you, our mental health capacity was pretty much at level anyway, so that if we have an incident where we need a tremendous amount of new beds in order to move people, Dr. Benjamin has a problem, even though he has a system and all the hospitals are reporting to that. We simply do not have a lot of excess capacity. When you talk about resources, that is definitely an area where we are going to be looking to do some things.

We are taking advantage of the local core service agencies back in the counties. We are looking to them to provide some leadership here. They are doing some things, they are adding crisis counseling, they are staying open longer, they are looking for more volunteers, but the example still is, how do you add more capacity to a system that was already functioning at near capacity? That is certainly a struggle for us in the local governments and our local areas.

I might add the whole role of faith-based organizations. We have been looking at those again from the leadership perspective. Is there something else that faith-based organizations can do? In many of our communities, we have some limited government capacity, certainly some limited private, nonprofit capacity, but in some of our communities, quite frankly, the most respected institution in our community is going to be the local church, synagogue or mosque. The question is, are there ways that we can look at some of the resources the government has in order to make sure that those institutions are there? An initial response to all of this and the first place that many people went was to some type of church. Churches opened up. People went there to be ministered to and to support themselves and others. I think we would be missing an opportunity, so in Maryland we are trying to figure out how to give more support to those institutions in such a way that they can be of more use here.

We are trying to make sure that we listen to our Mental Health Association, the 501(c)(3) of all the mental health agencies, to see if they can give us more involvement, thoughts and ideas as we continue to move things out.

We are certainly in the same struggle of making sure that the initial emergency response capabilities are there. We have a fairly good system. As we talk about bioterrorism, even though Dr. Benjamin is part of that other strategy, we are now moving his operation and his leadership front and center. To have them out in front

and center and provide those kinds of directions is something that we are working and struggling through, and we have a ways to go on that.

In addition, just being able to indicate what mental health services we need, how to get those and what should we be asking for from the Federal Government. We are getting these calls. One yesterday had to do with homeland security. The one before that had to do with bioterrorism. When you begin to overlay all of this leadership and these phone calls, quite frankly, you are talking about people, whether it is on the front end with the terrorist act, or on the middle or the back end when you have to respond and get people's mental health needs, so they begin to overlay all of that. We certainly need your thoughts and some outcome from you all to make sure that those of us that are at the highest government levels are asking for and doing the right things in those regards.

DR. MARLOWE: A significant area was opened up, and this is the question of language, of the whole question of what do we mean by normalcy. Perhaps because the President used it, it came into common coin and may be the wrong term. For most people, normalcy would be life as it was before September 11th. What we are really trying to tell people, and this gets to a central issue in prevention, is live your lives as you did, but change your behavior in certain discrete ways that will minimize the possibility of harm to you. This is not normalcy to the average American, who has been used in the terms of the metaphor of "normalcy" to wandering around essentially blindly, thinking that American exclusivism relieves he or she from any possibility of an external threat. One of the critical issues for government and for mental health is how do we tool the right language to enable people to understand how to keep going but altering your behavior in ways that are more helpful.

MR. NOVINSKI: We are doing, in response to September 11th, a lot of crisis counseling training across our state, and included in that training we are trying to deal with a lot of these kinds of issues. One of the ways we deal with it is we talk about people's belief system, how they feel safe in their homes, how they feel good things happen to good people, bad things happen to bad people, as well as feeling safe in our country. And when things like this happen that shatters that belief system and really demoralizes us, it throws us for a loop. But we are able to put it in the context of "that's what we thought then, and things have changed," much like talking to people who have been through disasters.

I was talking to an old gentleman in Georgia, who was surviving a tornado in his area. He was sitting in his driveway, looking at the damage in the area, saying in conclusion basically, "the world has changed." We need to recognize that. We need to acknowledge that, and rebuild that belief system.

DR. BENJAMIN: What did we do in World War II? Did we say "go back to normal" during World War II? And the fundamental question is why are we doing that now? Why should we do that, we are at war? Why don't we behave that way? Because the other way is an extraordinarily mixed message. We are at war, but you are not at risk. During World War II everyone felt at risk. I understand we started that message

and this thing just dragged on, but many other things are going to happen and we do not know what these are. I wonder if a better message is not to return to normalcy, but to go to some other state which we can define, and then give people something productive to do in that state. The big issue is that people are drowning in emotion, they do not know what to do and, therefore, they are making up things to do.

DR. SCHOCH-SPANA: I think the message, "just go back to normal", is based on the assumption that the public is going to act hysterically, it's going to panic, it's going to have negative psychological effects, or the incident will, and we need to shift that assumption to be "the public is capable of getting through this." To go back to normal assumes that people are tending towards the abnormal and if you look at reactions to disasters and to outbreaks of infectious disease, generally, the norm is positive. People do act collectively, they are resourceful. This is not to minimize the negative impact of catastrophe of various sorts, but we need to find ways of building on the assumption that people can act positively to crisis, and give them both organizational outlets for channeling positive reactions, and then giving them the information they need to feel confident that they can get through crisis. Maybe there was a different mentality during World War II that presumed that the population had something itself to get through that.

DR. MARLOWE: Let me speak as someone who is ancient then. The different mentality today is when so many people seem to think that the American people are incapable of coping. I was 10 at Pearl Harbor. The assumption was that we would all change our lives enough, even those of us in school, to do our part. We were tasked not only in the collection of scrap metal and newspapers, but there were things we knew we were supposed to do. We assisted in civil defense. We also accepted risk. In junior high, we were all given ID tags, and we were told quite straightforwardly, "so that your body can be identified for your parents if a bomb hits the school." Okay. Got it. Why not? They will want to know.

Instead, we have moved to a vision of weakness, fear and vulnerability, of incipient panic on the part of the population that I think, if we look at the experience in the Twin Towers of New York, was not there. The images of people carrying down paraplegic colleagues, of firemen rushing up the stairs to their deaths while they directed people as to where to go, on and on and on. I think we have so undersold our population that this is a niche we have created for ourselves.

MR. COLLINS: I am sure you are right, however, if you go back and check your 800 numbers – it is initially an issue of safety. When the Governors spoke about return to normalcy that meant that it was okay, we have done as much as we can, we are continuing to improve, but it is okay now to come out and go shopping. It is okay now to go back and use the airports. It is okay to go back into the building when there has been an anthrax scare.

From our perspective, return to normalcy had to do with responding to citizens' concern about how safe is it for us to do certain things. That is where we were coming from. If there was a better word to do it, I would do it. Your examples about being

prepared for the bomb, this is a case where we have had a bomb to hit. What we hear from a different leadership level is that people did not panic, they wanted to be assured. Once we did all we could do in response to everything we could, we asked them to return to their normal patterns of using the airports, going to the shopping centers, living their lives and not being hunkered down and be afraid to do anything.

DR. MARLOWE: But they have the media and government officials doing everything they could to terrify them.

DR. FULLERTON: What we are talking about is expectation, what you are expecting. You expect a soldier is going to go back, or expect if someone gets sick they are going to recover and come back. That has a great deal to do with what actually happens.

DR. MARLOWE: People can change their expectations very quickly. Most Americans did not expect to go to war on December 6, 1941. Most Americans denied it and did not want anything to do with it. I remember going out to the front stoop of the apartment house we lived in Brooklyn and saying, "We're at war." And most of my neighbors said, "No, we can't be. Nobody is going to go to war over some island in the Pacific." A week later it had changed because the nation had been called upon. It is the same thing as when Jack Kennedy said, "Ask not what your country can do for you, but what you can do for your country" -- nobody is asking that. Right now, the White House is saying, "Hey, go out and buy things." There is no template being offered as there was then.

DR. HOLLOWAY: We ought to recognize one part of a template, though, that has been proposed, and I would argue that words are only part of what is going on. I was struck by the behavior of the Governors and the Mayor whatever their language was, whatever their verbal language was, about where they went, what they did, and the way that behavior was projected. Returning to the World War II theme, all of us have seen the great pictures of the most effective campaigns of one of the most insensitive leaders that ever lived, in some ways, with regard to the poorer classes, named Winston Churchill, when he went to the poor neighborhoods and shared the -- was there(missing word) on the East End following the bombings. His presence was probably as important as all of that language that we heard him use so wonderfully. One of the things we ought not ignore are the positive influences of these behaviors. I agree that in addition to the words, there have also been examples (the media recently, as they have been under attack) in which what has been conveyed by the behavior is not helpful. But we need to think about all of these things in terms of what they communicate, the behavior as well as the language.

MR. MARSHALL: I am going to quote another famous President -- "The only thing we have to fear is fear itself." I turned on the TV last night and saw a clip of that and thought we have not had anybody come out and state it in terminology like that. Another hero that has come out of all this was the pregnant widow whose husband died on the airplane who most likely attacked the terrorists and took them down. She got on the plane that he was going to take and said, "There is this risk now. I accept this risk,

and I'm going to move on with my life." What the "return to normalcy" is saying is that there is no return to normalcy. The definition of "normalcy" has changed, we all agree with that now. We have to state it in those terms. You can not go down to the shopping center and say, "Hey, look, I'm shopping now, there's nothing wrong." You have to be resolved. There has to be resolve in Americans now. Most Americans have not realized we are at war. It is going to be a long, hard war and we have to put forth that kind of terminology.

We also have to put forth a real understanding of risk and, as an epidemiologist this is my job, but this is something that is incredibly hard to get out to the public. Inevitably, whenever we do a media interview, the first question is what is the worst-case scenario. I never answer that question. I always say we do not deal in worst-case scenarios, we deal in the most likely risk, and then I explain what that is. Someone mentioned it takes a lot to get anthrax spores to actually infect somebody. We need to get that message across. Something as simple as "open your mail and wash your hands after the mail." This is something that people can do and they need to have something to do. In World War II, people had Victory Gardens. Whether this helped the war effort or not who knows, but it was something that they could do. We need, as a group, to come up with ideas today with what those people can do, i.e. join your local Red Cross, be a volunteer, be involved in your local emergency management teams, go through your Red Cross training program so that you can be trained in another event, and to come up with other types of volunteerism ideas so that people will have a function to serve because they can not go on with their lives until they feel like they are doing something for the war effort.

I was a bacteriologist for a couple of years. I was in clinical microbiology research, researching drug-resistant bugs for about eight years. Now I am an epidemiologist for the State of Wisconsin. I head up their Bioterrorism Response Program, which is basically coordinating the CDC grant that we have received. Now, apparently, I am a mental health expert as well. One of my biggest tasks is to put together a surveillance and epidemiology response for the state and local health departments on how to deal with all this. This is only in draft form at our point and we have not been able to deal with it right now because we have been dealing with all sorts of other details. Part of our plan takes into consideration the mental health aspect. We are asking community mental health leaders to have a representative on each local Emergency Management Team. We are also asking there be a faith-based representative on each one of those teams. This is terribly overlooked and a great resource. These are people that really want to help and they just need direction from us to help them out.

DR. FLYNN: A question on how things are working in Wisconsin. Is there a close relationship between the mental health authority and the health department, particularly in the area of bioterrorism? Is that a link that exists, or is that one that is yet to be made?

MR. MARSHALL: It is a link but not a real strong one. We have some mental health people in our state that have worked through the Red Cross and work with all the community mental health centers. That is a link that we have been able to maintain. It is

not something that is emphasized. That is a real problem throughout the whole country.

DR. VEENHUIS: Basically the Departments of Mental Health do not deal with mental health, they deal with mental illness. The majority of services for mental illness are delivered by nonmental health professionals, namely, primary care physicians and the clergy. That is an important aspect. Mental health has not been mental health for a number of years. Much of the wisdom regarding mental health issues in disasters is still in public health in terms of behavior modification and so forth. May I just say that in the flood in North Carolina, we found that "communities of faith" were enormously effective on a regional basis. Other states were trucking in materials to co-religionists, but the distribution was even outside of the church. This was done without our doing very much. The majority of people look to the clergy and churches for explanations as to why the world has turned upside-down. May I also remind you that the Moslem terrorists are claiming that religion is what is making them do this.

What are we thinking? World War II was preceded by the Great Depression. People's expectation in this country were far different in 1941 than they are in 2001. Getting back to normal is the wrong term. There needs to be transcendence, mastery, and getting on with life. Normalcy is a bad term. For the greater span of mankind's existence, normalcy was not what existed in the 1990s in the United States of America.

DR. MARLOWE: In my opinion we are saying that the time has come for the resuscitation and revivification of what we once called (and practiced) social psychiatry. Community psychiatry is understanding that we are dealing with mental health processes in a social and cultural context and not with problems of individual pathology.

DR. BENJAMIN: We can not do that. People might get better.

DR. OLDHAM: We would all agree that we are trying to find the right words to use. We know what we are saying and we are trying to find what the best words are. It is a different world and it is going to be that way at least for the foreseeable future. It is not normalcy as we once knew it. I had an interesting experience the week before last. I was asked to come and meet with the Advertising Council of America. This organization is a wonderful, voluntary organization of a group of powerful CEO's of the advertising world. It was created by the War Office in 1942 in order to develop a campaign to help the national morale. You are very familiar with some of their World War II posters, which included "Loose lips sink ships." They also invented Rosie the Riveter, and later, Smokey the Bear. They are interested in trying to come up with a national campaign now and they are putting some smart heads together to do that. That is the kind of thing that will help focus on the reality of the situation such as things you can do, as people are suggesting.

Part of our challenge is this complex mix of the wonderful resiliency and strength of everybody in coping with the situation. That goes across-the-board. Those who have identified diagnosable illnesses that emerge in the context of this disaster also have a lot of strength and capacity, and if we can provide the right help for them, they will be right

back doing well very quickly. If we do not identify who they are and we ignore them or we do not understand that reality, then we are going to create a whole category of invalids which is going to be our failing.

On the other hand, there are many ways in which that is not going to be the case. Most people are not going to develop these kinds of reactions and they are going to be coping very well. We need to answer the questions with the right information so that people understand what the facts are. That is what we keep coming back to in these discussions. This attack on the media we all recognize is a way that many of us have felt. At the same time, part of our new reality is the new telecommunication part of the world, and that has not been that way in the past. This is part of what is happening and probably will happen, how can we best use it to work for us instead of griping about it.

MR. MARSHALL: There has been a great deal of bashing about the media, but in our dealings with the media, they have been a very valuable tool. There have been many times when we were trying to get a message out to the public and because of bureaucratic reasons it does not get out quick enough. But the media has gotten that message out and they have gotten it out accurately. They have checked their sources very well. There are a lot of instances where that does not happen but for the most part, they have been a very valuable resource. I want everybody to understand they are not your enemy, they can be your friend.

DR. FULLERTON: I remember as a kid that we got involved in school when there was a big campaign about traffic safety (Smokey the Bear reminded me of this). In all the classes, we were drawing and we were coming up with slogans like "wear white at night", and we would go home and work on that. My thought is that might be something important and something that gets kids involved and they will remember when they grow up.

DR. URSANO: The most effective public health campaign occurred in Australia to deal with the question of malignant melanoma. The slogan was "slip, slap, slop", and it had to do with putting on oil to protect your skin, putting on a hat, and putting on a tee-shirt. It was that phrase that carried it off throughout the nation.

DR. BENJAMIN: One other issue is the fact that from a communications perspective, what we are fundamentally dealing with is a change from the World War II days when the press had time to get it right. They did because they would primarily print journals and do radio. Radio was the cutting edge, or they would read from the papers. Now we are dealing with a 24/7 operation. People simply do not have the time to put that in perspective. That is important, at least from the public health community, because the public health community has been used to doing what we do quietly and in silence, and having time to get the message right, or time to analyze it. Those days are now over.

DR. MARLOWE: That is a fantasy. Today the media has more modes of checking, if it chooses to use them, ranging from Nexis to a thousand different databases on the Web. The competition for viewers and money drives telling these stories they have

digested. Vietnam, 1964. I was in a bar having a drink with a friend when a television news crew came in from one of the major networks, before escalation. The correspondent, who became quite famous, knew my colleague very well, and came and sat down with us. He was very angry and upset. He said, "I've been out with an urban division, South Vietnamese division, for two weeks, and I have nothing New York will use." And I said, "You mean, no firefights?" And he said, "Oh, lots of firefights. New York isn't interested in slopes, Vietnamese killing slopes." And being young and naive, I said to him, "Well, what is New York interested in?" "Dead babies, man, dead babies sell Exlax. If we can get a 1/2 point rise in the Nielsen for Primetime News, that's an additional 15 million bucks a year." That is what you deal with in the media.

DR. TINKER: I am going to come to the defense of the media. Not since World War II has the media confronted a situation like this or a challenge like this. They are figuring this out just as we are figuring this out. They are fumbling through this just as we are fumbling through this. What it really points to is the need for us to work with them very closely so that there is that clear, consistent, accurate message.

DR. SCHOCH-SPANA: The media does not have a monopoly on instantaneous communication today. It is the 21st Century. Let us look to the commons in our day, which is the Internet. Why is there now no emergency Website specifically dedicated to bioterrorism? I had to maneuver through the CDC Website. I had to maneuver through HHS. Let us quit fingerpointing at the media. Why has the Federal Government or local health departments (I know that there are great websites put out by the city, by local health departments) but why is there no emergency Website now dedicated to this issue, with readily accessible, easily digestible information? We need better working relationships with the media but there are other forms of instantaneous communication that government institutions can take advantage of.

MR. MARSHALL: There actually is. The CDC has funded many states to develop their own health alert network, and the CDC has their own health alert network which broadcasts emergency messages to all the states. We have had many of those messages in the last couple of weeks.

DR. SCHOCH-SPANA: In terms of the general public being able to tap into those flows of information that is great. But what is being projected out to the lay-public on these issues?

MR. MARSHALL: The CDC does have a public bioterrorism site and all the states that are developing their secure health alert network sites are also developing public sites for them. However, they are only in the second or third year of their funding and it is a five-year funding. It is going to take a little while. I like to describe our health alert network as a baby. It was in utero for a long time. It was born last April, and it is just learning to crawl. It is going to take a while.

DR. SCHOCH-SPANA: As a nation, we need to invest in state-of-the-art emergency broadcast systems. We also have to recognize that not every sector of our society can plug into the Internet as well, and we have to find some low-tech avenues to

reach certain components of our society right now.

DR. DeMARTINO: In our Federal attempts to deal with behavioral and mental health issues related to biological terrorism we have not had any success in getting attention drawn to it in a bunch of years. I can only hope that if it is not going to happen now, we are really sunk. This is a fortuitous time for trying to get the message in front of those who can allocate some resources to this. The plan that has been on the table for three years is a comprehensive plan. We had great recommendations in the areas of policy, risk communication and research. The reality is that we are not entirely sure what we are preparing for, and how can you make a plan when you are not entirely sure what it is you are planning for?

That is one of the big problems. That is one of the things that means that the investment that has to go into this has to be widespread and comprehensive because you have to figure out what it is that you are planning for and plan at the same time to change your plans once you figure out what you are planning for. That is what they have not bought into. Someone wants to know what it is. Someone just wants a piece of paper downtown a little bit later on today, "can you draw something up?" That kind of investment is not going to work.

The plan that has been thrown out on the table is very comprehensive. It talks about research at different levels and trying to figure out what is going to happen short-term in an event like this. The kind of thing that is happening now would have been one of the scenarios that we would have wanted to play out. What happens if this and this? What would we have seen? What happens two months, four months, a year down the road? What are the long-term effects? These are the kinds of things that we would like to know that would help our planning. In lieu of that, because that reality is not yet here, we have little parts of models that would work for this, little slivers of models that we could apply to this if we are forced to make some of those decisions now, which we are going to be. As a community, we are going to be asked to make some of those decisions now. We can only hope that over the next five to ten years that some of this information gets fleshed out and we actually make plans that are much more relevant to the realities of these situations.

One of the things that we can do today, and one of the things that we would really like to put into place, is something that is one of the one things I think we can prepare for and use different kinds of models for. It has to do with risk communication and public education, because we know that has meaning and it is something for which there is a widespread body of knowledge about. Even if it is not in relation to biological terrorism, we have the model of infectious disease and epidemics to draw upon, and it is something that we can actually help with. It will have impact while we are trying to convince those with access to resources to help us with all the other parts. This is the kind of thing that has its own life, so whether we are prepared or not, it is being asked for. You either jump on and figure out how to guide it , it is like a runaway horse. This risk communication is going to be happening over the next year and a half with regards to biological terrorism, and it is the one thing that public officials have felt this is something we really need and can use now.

One of the things I would bring up is the issue of what kind of messages and to whom. We have messages to the public and public officials, and to public officials to give to the public. We have leadership messages. People have been talking about how do you set the tone, are you setting a tone of victimization? Are you setting a tone for resiliency and combativeness? What is the tone that you set? And what about how do we get people to talk about the spores that they found the day before yesterday, with a message that is in context so that people can understand? The American public wants information, and controlling information is just about an impossibility in these days.

Maybe he is not going to work with Frontline, it is coming. You are going to see it on there somewhere. The question is not so much how to control it but how to shape it and to educate those who are giving the messages all the time? Is the message different in localities as it is from the Federal Government? Should this be a centralized operation? Should we create one message and just spread it all around, or do we need to create a whole bunch of different messages? We were talking about Federal control over state control. Things happen in people's homes and in people's individual lives, but where can we get a most effective constellation for this idea of shaping this message and deciding from whom it comes and to who it is going.

DR. SHAW: There are two questions that everybody wants to know. One is, how safe am I, and the second question is, what happened, what is happening, and what is going to happen. They want some clarification of what is happening. Somebody brought up the plague in Surat, India. One of the problems in that plague was all kinds of misinformation. One of the headlines said "Mysterious disease kills thousands." In retrospect, we know that only about 56 or 58 people died. Those are two of the questions that any risk communication has to address, issues of safety and what happened and what is going to happen.

DR. DeMARTINO: Who delivers that message?

DR. SHAW: The problem is there are too many spokespersons, and the media is like a computer, it is only as good as the information you put into the system. We have to educate the people who relate to the media. The media, because of needs for speed and essence, want to present as quickly as possible. In some ways we have to regulate; I hate to say it because sometimes individual rights takes priority over what is right. In some ways we have to, in a preemptive way, put together some kind of risk communication packaging that we can agree on, and there should be a limited number of spokespersons.

DR. DeMARTINO: Should the message be the same from Secretary Thompson as from the local health commissioner?

DR. TINKER: No. What do they say in real estate, what is the most important thing? Location, location, location. What is the most important thing in news media? Localization, localization, localization. A message that will resonate in Dubuque is not going to resonate in Chicago.

DR. DeMARTINO: That is very complicated. You have made our job about a hundredfold harder.

DR. URSANO: Let me suggest a mechanism that follows directly on that. Instead of trying to answer all the messages that are possible, one could think about funding local talk shows where local people respond to the local people asking questions in the language they speak, with identifying folks who are locally able to have the information that is needed. You have solved multiple problems by getting the funding out of the central area, distributing it locally, and letting the local people decide how to apply it, as long as it has been designated to a particular form of communication to meet Tim's directions.

DR. MARLOWE: That is viable only if the people are competent. One of the things we forget about the media is that the majority of people who are communicating are not reporters, they are what the Brits quite correctly call "news readers." Those of you who watch have seen the transformation of CNN Headline News to bringing in entertainment types to read the news to hype the ratings. Therefore, it becomes terribly important that what is disseminated is cogent, logical, and makes sense. My fear about Dr. Ursano's model is that we will then have 500 Don Imus clones going crazy with local talk shows.

DR. URSANO: I did not mean Don Imuses, I meant John Oldhams and Michael Hogans and others like that who are available locally to provide the expertise when one can give them a venue to do that. They can adapt their message much more rapidly than we will ever be able to do by trying to think through what is the right thing to say here. I agree, you have to find the right person to speak.

6

THE NEW YORK EXPERIENCE

John Oldham

DR. OLDHAM: Let me start with a word about how this unfolded starting on September 11th. Though that is not the focus of our talk, it can not be disconnected. It is important to start there. I was holding a meeting of the Behavioral Health Service Line Executive Committee that I chair in my office on the morning of September 11th at 8:00 o'clock. My Director of Nursing came in and said, "The World Trade Center has just been bombed." That was the initial news coverage. I thought she had just gone around the bend. I could not accept it but we rushed into my office, which looks straight down the river. I am on the West Side, near the George Washington Bridge, and there was the billowing black smoke coming right out of the World Trade Center. Horrified, we watched, and it proceeded from there for us just like it did for all of you and the rest of the world because soon this was now headline news times ten.

For us, this was something that did not compute. We could not keep up fast enough with the implications of what was going on. I am not sure I am saying that right. We could not accept it. We could not believe it. And I think that was true for most people. For me, as a New Yorker, I remember having known about the previous attack on the World Trade Center. I celebrated the 100th anniversary of the New York State Psychiatric Institute at Windows on the World on the top of the World Trade Center a few years ago. That it could be damaged I could accept, but when I learned that the Towers had collapsed, I was just speechless. I could not believe it. I could not comprehend it because these are massive structures, and it was unbelievable to think that something like that could happen. You could not even begin to think about the human toll at first, inasmuch as you were trying to respond to the situation itself, which was so shocking.

We have all had versions of that, every single one in the room and in the world, so I need not belabor that. But there was a steady immediate need for emergency help that quickly spread. I can only give you my local version. The Psychiatric Institute is at the Columbia Presbyterian Medical Center, which is uptown in Manhattan. It is near the George Washington Bridge, so we are fairly far from the actual Lower Manhattan Ground Zero site but everything was very visible to us. We immediately had an emergency

meeting of the hospital itself (and this happened throughout the city) with the expectation that there would be enormous numbers of wounded and disaster and casualty cases that would be coming our way once the Lower Manhattan medical facilities had saturated. We expected that to march north and that we would need to be prepared.

I went to the Emergency Room. At the time, we already, prior to the attack, had 20 patients in the Emergency Room needing admission in the Psychiatry Emergency Room. That was before this happened; things had been busy in New York recently, particularly in psychiatry. I arranged to help out and got the state van to come over and transport some of these patients up to our satellite hospital and admit them in Northern Manhattan. The ambulance could not do it because they were no longer available – just a little example of the ripple effect that immediately started happening – whereas normal services were no longer things you could count on and everything was atypical. We cleared out the Emergency Room, transferred patients over and admitted them to the Psychiatric Institute, and then you know the rest of that story. That was our version of Mount Sinai and all the other city facilities. It turned out that there was no need because there were no survivors of the magnitude we anticipated. That was both surprising and horrifying as we began to understand why.

We then tried to be as tuned in as we could be. The hospital held an emergency meeting of the medical staff every morning at 7:00, but the city was extremely immediately complicated so at the end of the day on September 11th you could not even leave the city, and you could not go home at first. They finally let people go home but then we had to worry about whether we would have our evening shift workers and whether the nurses could get to duty. Just to provide their ongoing regular care all of the hospitals were now quite concerned because they were not sure that there was going to be mobility of people. If you could get home, especially if you lived outside of the city, then you could not be sure at all you could get back in the next day because they had announced they were closing all the bridges to Manhattan. There was concern about staffing and providing regular services.

There are many hidden, derivative aspects of this kind of a disaster that the whole city was coping with. There were police blockades and checkpoints all over the city the next day. I got in just because of being a physician, having an ID and going to the front. They let us by but no one else was allowed to drive into the city. This fluctuated after. As things began to loosen up, travel began to resume, but people were already frightened. Now the fear spread so you began to hear the concerns about taking the subways and crossing any of the bridges. There were authoritative sources as well as media coverage saying there will be a second wave because that is typical. Therefore people were worried that the events of September 11th would quickly to be followed by something further catastrophic that was planned. People were very frightened. That initial state of intense fear became quickly replaced with the grief and response to the devastation itself, and to the reality and the magnitude of the disaster.

I later had an opportunity to go down with the Commissioner and with Bernie Aarons and some other people for a police-escorted, hard-hat walk into the Ground Zero site. Some of you may have had that opportunity as well, but if you have not, I can just

mention that the magnitude of the destruction is just staggering when you are there in person. Nothing on the media can convey anything even remotely that transmits the nature of this disaster. If you think about those towers of hundreds of floors of steel, after they collapsed the estimated distance between the steel floors is about the width of your finger in terms of the collapsed structure. People were just pulverized, and then the fires burned at about 2,000 degrees Fahrenheit for weeks after that. It was just an absolutely disastrous scene.

The second thing I would point out is that very quickly this Ground Zero site became a war zone. You go down to Lower Manhattan and it is covered with military in fatigues, with security checks, with barriers, with police, with all the rescue operation going on the disaster had transformed not just the Towers but the whole environment of Lower Manhattan. This is a continuing impact that is a very real presence in the city.

I had the opportunity to go down again earlier this week because a number of calls came in and I had been asked by the Commissioner to meet with the Superintendent of Banking for the state. It is an encouraging example of how the city is coping. The New York State Banking Department had its office building just adjacent to the Towers and they all had to be evacuated, about 600 employees. Luckily they did not lose anyone but every single one of them thought they were going to die. They were on the street when the Tower collapsed so they were all covered with ash and ran for their lives. She wanted to meet because they were now being told that their building was structurally sound and they were required now to move back into the building, with a whole wall of windows that looked right over the site. They were eager for help as to how to deal with their employees. It is an illustration of what I was saying earlier about how a situation like this just changes the rules.

I figured she would want to just talk on the phone, but she said, "No, can I come see you?" She is Superintendent of Banking for the state and she comes to the New York State Psychiatric Institute. I do not think she would have set foot in a building with that name previously. But we had a good talk, and then she said, "What should I do?" And I said, "Well, what you should do is pick your sturdiest managers and supervisors and bring them here and let us talk for a while." So she brought about 20 people including Randall Marshall, a faculty member who is a trauma guy, and I spent several hours with them. I tried to help them and also give them some facts, tell them what was a normal reaction in an abnormal situation, give them permission to feel the way they were feeling, as well as to understand the flexible sensitivity they had to figure out in working with their employees. They came up with many good ideas of their own that we did not have to suggest. Again, there was an illustration of how the times change. I do not think in ordinary circumstances bankers hug each other. But these managers did. They were bonded in a way that you would never see otherwise.

After all of these plans, they called me the following week and said they were having a two-day symposium that was scheduled previously, that they have every year, for bankers management throughout the city consisting of approximately 800 people, and they had decided to have it anyway. In the meantime they had already moved back into the facility because the Governor's Office of Employee Relations said the building is sound and

they were ordered to reoccupy it next week. They planned a phased-in move. They had to move more quickly than they wanted but it worked and they had some better capacity to deal with it. I went down and spoke to this group of bankers in this symposium because they asked me to be on the program. I was on the program the second day (the Governor actually addressed the same meeting later in the afternoon) and this was a banking symposium all about banking but they wanted a presentation about the human impact of the disaster. People were glued to the stage because everybody was still so affected. This was going on right at One Chase Plaza, which is across the street from the still visibly smoking Ground Zero site, and it is an illustration of what Brian was saying earlier and the resiliency of this group of very traumatized people trying to get back to business. In their case, at least, to try to do it well.

Not every place in the city has had an opportunity to get help or has been able to get help. I went from there over to Pier 94. Originally the Lexington Avenue Armory was set up as the family center for the families to come. That was moved then over to one of the piers. I went over and it was just a tremendously stressful experience for anybody, and it was for me. You have seen pictures of this but to go in person and see this wall of photos as long as you can see, and then read the handwritten notes to the lost ones from the surviving family, you are a wreck by the time you finish that. That process is still going on.

I was on a program earlier this week with a group of lawyers, and one of the people who was also making some remarks was Judge Roth. She has been the Acting Supreme Court Judge designated as the sole Judge empowered to authorize death certificates for all of the lost ones. She is remarkable. You could tell that has been very stressful for her. If you think about the kind of challenges that come along, sometimes they are surprising. For example, she said she has issued 1500 death certificates so far, and one thing that surprised her was how few there have been. I explained to her that that was the avoidance item in the acute stress reaction list. When you have someone who dies under ordinary circumstances, you do not want to do it, but you have to go and claim the body. You have to have a funeral and you have to go through that whether you want to or not. Here, it is atypical and you can hold onto a magical fantasy that maybe yours is the relative still in a coma in a hospital somewhere who will still show up someday, or you can just say, "I can't deal with it yet." It is a long process.

Judge Roth had to read all the transcripts of the cellphone calls to the survivors from the plane just before it went down because she has to review any evidence that may be present. She gave us examples of that that were just heartrending to hear. But she said the challenges were very complicated. Another example was one woman who came to see her to obtain death certificates for her three siblings, all of whom were killed, a brother and two sisters. She said the brother was a freelance employee who happened to be working in the Trade Center that day. One sister was self-employed, and the second sister was unemployed. Her impulse was to sign them all, but she could not because she was warned that there would be opportunists coming along without any evidence, taking advantage of the situation to try to collect benefits and things that were not rightfully theirs. She was in a no-win situation. If she did not approve this until further checking (it was not clear how that was going to be done) she could further traumatize this woman who legitimately may have lost three siblings. You can just imagine the magnitude of that kind of decision

making process.

I am illustrating some of the kinds of things that people have had to deal with. The destabilizing nature of this whole disaster is part of what I am trying to illustrate to set the stage for the ongoing nature of the situation now. One other example, one of the executives called me for advice from one of the companies that had many employees. Most of its employees were in the Trade Center. They lost about 400 employees, and they had 1900 who worked in the Twin Towers. This person called me and they were just completely derailed. They were trying to figure out places for people to work. All 1500 who survived either had not made it to work yet or were successfully evacuated. They said they had Midtown offices and they had been given access to Radio City Music Hall for the following Tuesday. This was only two weeks after September 11th. They wanted to know if it was the right time or not to have a memorial service because they figured they would have about 5,000 people, and that would be a place that would hold the right number of people.

Well, what do I know about that? Where did I get trained to figure out anything like that? Nothing prepares you for that. Furthermore, the person who was asking was a world class executive who, through his whole career, had made nothing but hard decisions. It again illustrates the topsy-turvy nature of the situation. I said, "There is no blueprint for this. I do not know any blueprint. However, I think there is a difference between coping and remembering, and I think it is too soon to be remembering." And he was immediately relieved because he felt the same way. And I said, "You have to forget about the fact that Radio City is available, that is beside the point. You will find a place to do what you have to do when the time is right." He was enormously helped by that. That had very little to do with my professional training. He needed an objective outside person to help, but partly it is the bewildering impact that this has on people across the board. Everybody now is in a vulnerable state.

We had an opportunity where Bob and Robert were on an international telecast a couple of weeks later. From our studio up at PI, we had the City Health Commissioner Neal Cohen, the State Commissioner of Mental Health Jim Stone, myself, and Joe English who is Director of Psychiatry at St. Vincent's, which is the hospital down near Ground Zero. The four of us were in the studio there, hooked up with people here in Washington including Robert and Bob and a number of people from the APA including Darryl Regier and Steven Mirin. We were hooked up with the World Psychiatric Association Plenary Session as it was underway in Madrid, and the technology was remarkable. It was real-time and it worked. That was an interesting opportunity to have some discussions about this whole situation. One of the points that Dr. Ursano made in that discussion was one that I was also making repeatedly, and that is that people make the mistake of talking about this as a piece of history that has now happened from which we have to recover. This gets back to what we talked about earlier today about getting back to business as usual. There is no business as usual. It is a whole different world and we have to get used to that.

On top of that, we had had the notice of warnings of further terrorism of unknown type, and all the fears people had about going up into the Empire State Building or any tall building they work in the city, or any kind of event that could happen at anytime, and the

universal startled reactions everybody had when the sirens that they did not even hear before went by which were probably the same sirens that had nothing to do with anything unusual. It was a very heightened sense of alertness. Then when the anthrax announcement came along, it is in this environment and culture and state something like this begins to be announced. One reason I am thinking about it this way is when we were talking earlier about the media and how they feed this thing, I have had concerns about that, too. I was advising people that I had been consulting with to just turn the television off, turn the news off and get away from it. You are getting overdosed with this stuff and it is hypnotic. People every day will go back to it because they want to see what is happening next because something kept happening next. It was not easy for people to turn it off. It was not just that we had constant coverage. There was this little window in the corner of every news screen that had the replay of the plane going into the Towers or the Towers collapsing. It is imprinted in my head and every one of us here, in a way that we are hardwired almost with that to be there.

On top of that, people really needed to get information. They wanted to get information and they were trying to deal with this new threat. In that context then to learn about the anthrax, it is very difficult for the media or anybody to get the real facts out there and have them sink in because there is a heightened tendency not even to believe what you hear because there are inconsistent things that are said. One report will say this, another report will say that, and you do not know which is right, and so you automatically assume that they are not telling you the real story. Somewhere, down here in Washington, you guys know what the real story is, but you are not telling us. If they say this is a cutaneous form of anthrax and that is not of the highest level, what about that guy who died, the only guy who died, and that was the respiratory form. They are trying to keep the panic down. There was a knee-jerk disbelief of the reassurance part of the message that everybody was trying to convey, and still is.

Part of the challenge that all of us have is to try to get that information out accurately in the context of a disastrous, continuing, managed message, while at the same time keeping track of what is going on and trying to find the right balance between warning and true public health safety measures, and overreaction from occurring. I would say that that has been handled on balance pretty well because I do not think there has been a huge sort of consensus that this is more of a risk than it really is. I believe people have ended up understanding that this is something that is a very real worry and a concern. Most people I talk to understand that the goal, as much as we can know it, of the anthrax component of the current scene was not to create a second wave of fatalities, although of course if that happened the terrorists would not object, but rather to psychologically destabilize the entire situation and keep us on pins and needles. That has been, to some degree, successful. I see efforts in the news on the other side trying to help get the right message out. For example, public service messages such as "there has been one death from anthrax and last flu season there were 20,000 deaths from flu" put it in relative balance. But you are nonetheless braced for anything that may happen next, and sometimes you never know sort of where the source of worry will come from.

I mentioned my concern about how we are going to handle information about additional bioterrorism that might be more of a problem. The smallpox threat is something

people talk about that I think does have the potential to be extremely frightening if people present excessively or in the wrong way, or if we do not try to keep some sense of calm about that.

How have we tried to respond in terms of the psychological and emotional reactions among the people with the needs in the city? There have been enormous amounts of response. There is a little group called Disaster Psychiatry Outreach, which is a group of psychiatrists that had banded together way before this happened, to be prepared for disasters. They had been advising on the TWA Flight 800, and a couple of other examples. They took over the headquarters at Pier 94 of the family center there to provide the management for the professional round-the-clock staffing of that location with some newly built temporary offices there on the pier. Families would come in and they would provide help round-the-clock. Alerts went out through many different networks throughout the city seeking volunteers. It was an enormous number, a generous outpouring of volunteers of people who wanted to help, over and above their usual jobs, around-the-clock. These are at all levels.

The State office called to inform me that they were setting up a New York City based office of SEMO, the State Emergency Management Office at Pier 90. I got the e-mail on Friday afternoon at 4:00 o'clock, and they wanted volunteers to staff 24-hour shifts over the weekend in three categories -- clerical, administrative and clinical. I had more volunteers within one hour on a Friday afternoon than we could even begin to use. They just flooded that. People really want to help. It gets back to the question we have talked about earlier in terms of what is the message we can get out there, and that is how can we help shape things so that people can help who want to help. If they bring clothes and food, which they did, to Red Cross sites and they have so much that it is going to rot, go bad and nobody is going to use it, that will backfire. It does not help people help other people. That is one dimension of the problem.

The second dimension is one that I am struggling with and do not know how it is going to be figured out. We talked about some of the challenges to make sure everybody understands how to provide appropriate response and to try to keep the balance between recognizing people's strength, and not inappropriately convey to people who don't need help and are doing fine. We talked about educating people about what normal universal reactions are, which include insomnia and irritability and lack of job effectiveness and distractibility and all the things every single one of us has been experiencing, while at the same time trying to put in place some kind of mechanism to do early identification of those who from past studies tell us we need to identify early, who really are going to need help for a continued or protracted set of problems, such as those with PTSD or depression or many other things. Pharmaceutical prescriptions are going up off the charts in almost every category -- sedatives, tranquilizers and antidepressants. Suicide rate is, we think, going up, at least I have heard reports to that effect. I do not know how certain the data are, but I would not be surprised. We have to be able to provide that help as well.

How can we do training to provide crisis counseling, how can we do the best we can to prevent bogus, lousy or uninformed interventions out there? I will reveal my particular opinion about one example. I was called about an investment banking firm on lower

Broadway which had hired a private consulting firm, and that consulting firm had come in and performed EMDR on every employee. That is eye movement desensitization reprocessing. I was called because the entire company was a wreck. It was just a mess. Well, that is bad. That is something that should not happen. There are other things like that. Then the next day, just to try to figure out a way to get the best access to appropriate treatment for those who really need it. That is where a new planning process is in the air, and let me just close with an illustration about that.

In Albany, at the Office of Mental Health, I was getting people to brief me on the current status of the funding sources. We went over the status of the FEMA money, which is the 60-day phase money that has been made available. The application is in development to apply for a second phase of FEMA money, which will be for nine moths, and that will be due about November 10th. This is money to provide capacity for crisis counseling and bereavement counseling, which can be done by appropriately trained individuals, whether they are paraprofessionals or professionals (there is an effort to try to clarify that). At the same time we had good conversations and Bernie Aarons was very helpful on one of our conference calls to clarify the availability of Federal money through the $40 billion that Congress authorized, $20 billion of which is available. Out of that there were about $126 million that were made available at this point to Health and Human Services, and out of that there were about $28 million that were made available for mental health and substance abuse combined, and $7- or $8 million, roughly, of that had been distributed with another $21 million available at this point, with the capacity to go back to HHS and request additional moneys. This is money which is available to help provide mental health treatment services, as opposed to the FEMA money which is to provide counseling.

The question to the people in Albany is that I am not clear what the money is for and how we are going to deal with this. Let us say we are right – and we have to be right – that there is going to be a significant increase in what we call the "practice burden", or the "treatment setting burden" because of the increased need to treat the cases of PTSD and depression and other treatable conditions that need attention. I looked at some of the Oklahoma data and the estimate there was that about a 9% increase in practice burden was identified within the general practice treatment community at a certain point in time. It may be a different percentage at another time, but you know you are going to have an increased need because of these patients who have this need.

It was not clear who would provide the extra professional treatment needed for these additional patients. Is it going to be the existing providers in the city who are all going to work longer and stay in the office longer and work weekends? Now, that may be, and certainly some agree that will happen, or they will just pack in a heavier schedule and do less teaching and try to take care of more patients than they would ordinarily take care of. If that is the case, wouldn't those services be paid for by ordinary third-party billable services, in which case, what is the money for? And if that is not the case, but the money is to bring additional people to the city to provide extra manpower from professional groups to provide those services, where are they going to come from? Who is going to be able to sort of come in and park for a while and do definitive treatment? There are a lot of questions that go with that.

What struck me was that nobody seemed to have thought of this, at least it had not been figured out yet. I am still at that point in time. That is part of where we are now because we are past the initial phase. We are well into the period when we are starting to see PTSD patients who need early treatment and who will do better if they have early treatment. We also know a lot about how to do treatment. There is, for example, a very sophisticated, well validated form of brief intervention based on prolonged exposure, developed by Edna Foa at Pittsburgh, that is impressive and has a manual. It has not even been published, but she has made it available to us. We are trying to look at that and see if that is something we can get people trained to do, who have the background to be qualified to do it. That is one thing. There are plenty of people who know how to treat depression. If that is what comes to the surface, we need to make sure people are available to do that.

I do not know how to measure all this either. I am concerned about doing a good job of evaluating how we deal with this, and doing an evaluation of what the system's response is, and how well we have provided to meet the need either of crisis intervention or certainly of treatment services for people who need it. That gets tricky because unless you are careful, it gets called "research" and this causes people to worry. Personally I do not have a problem with that because I understand what I mean by that and it has to be done in a sensitive and a careful way, respectful of the nature of this population. We certainly do not want to have a thoughtless process where a survivor or a traumatized victim gets 20 different telephone surveys all asking the same questions that come in from all parts of the country.

An effort we are trying to put together is some kind of coordination process. We have thought about developing an oversight steering committee to provide some coordination of information about that. It is an important issue because if we do not do that, then five years from now we are going to be saying "What happened, and who did what." Unless we have this information we will look back and feel we have really missed an opportunity, although you hate to use the word "opportunity" at all in this kind of situation, or necessity of trying to find out what works and what does not and what is the best way to help people.

MS. CAREY: I have a question on the concerns we have in terms of looking at the moneys that we have and looking at that very issue of outcomes. Have you thought through where you would look at some of the elements for consideration to plug into, what you would then look at probable outcome issues, clustering, domains, anything like that?

DR. OLDHAM: There are a number of proposals that have already been put together, some of which look quite good, to do a needs assessment and to do screening. One example and one discussion that we had is that we have to be as nimble and smart as we can be, so we need to take advantage of systems that are already in place rather than trying to reinvent things. For example, in terms of children's needs, there is a fairly sophisticated network of school-based services that exists in the city that has been actually developed as a result of the concern about teenage suicide and youth violence. There is actually a set of screening programs in many of the schools that is done by a number of researchers, some of whom are at the Columbia School of Public Health, some through

child researchers at NYU, some through our Department of Child Psychiatry, where there is already a link with school counselors and acceptance by the school of the need to have this screening mechanism. One of our researchers got a call from the CDC asking if they could add five or six questions to get some additional information about exposure to the trauma. This would be an application for a supplement to be reviewed by the granting agency. OMH is developing a needs assessment that will be part of the FEMA application, but that should also help in this regard because it is designed to identify those who need more than crisis intervention and would be needing referrals for treatment. The flags to begin to identify people may be achievable in those ways.

Other proposals have come in to use existing organizations such as community organizations and try to develop representative samples that could be followed. But this all has to move very quickly in terms of being reviewed by the granting agency and then if it is truly going to be identifiable information it requires an IRB review process and appropriate protections of human subject participation, even if it is just an evaluation program.

DR. CLIZBE: I heard you say that you were uncomfortable with the word "recovery" because it implied going back to an earlier stable time. Early on when we were talking to some of our people in New York they objected to the concept of "healing" because they thought that was way too premature for the people in New York. This gets to something we have all been struggling with and maybe it is regional. Maybe there is one theme in New York and another theme in Wisconsin, but do you have a sense of what message or the concept fits with the people in New York, if saying helping them "recover" implies sort of a regression back to an earlier stage, and if "healing" is premature, what concept would be better? Have you come up with a theme or a concept?

DR. OLDHAM: I can put it in a bunch of words, but I have not come up with a single one. I am not sure there is one. To me, certainly, for those who need to recover -- and there are large numbers who do -- we want to see that happen. There are many who are going to need definitive help to recover from real development of or reactivation of preexisting conditions. We know that those who are already in treatment with an anxiety disorder, or a depressive disorder, are at risk to have that either intensified or reactivated. That is true for those within the mental health professional side.

In terms of the community at large, the words I keep using are "coping" and "understanding the new reality." In a sense coming to terms with it because there is a constant gradient that, which I run into all the time, of people who will know in their heads that this has changed the nature of the world, but internally do not accept it. They keep behaving as if they are waiting for the world to go back to the way it was, and we have to keep helping people understand that that is not going to happen.

DR. MARLOWE: I am reminded of two things. One was the priest in the town in Scotland where the children were shot in the school. This bears on the whole pop-psychological business of closure, recovery, et cetera. An American reporter said to him, "Well, tell me, how long do you think this community will find closure and recover?" He

said in his deep Scot's brogue, "Good heavens, their hearts were broken. You never recover from a broken heart." One of the things that we do not talk about and you just did, but don't like to talk about, is that we all carry with us wounds and scars that do not disable us, but that restructure the world for us. We have to come to terms with that rather than "life is a lovely cocoon."

DR. SHAW: I would like to share a comment about children. About 3 to 4 percent of the population are probably children. We did a two-year follow-up study after Hurricane Andrew, and while the Posttraumatic Stress symptomatology improved, predominantly in boys, in actuality, two years after the hurricane, the children as a group were worse off in terms of internalizing and externalizing symptoms. This data was also replicated in Australia by McFarlane, who followed children two years after an Australian bush fire. Those things continue unabated despite our best intervention. One thing we did, which I think was very helpful and speaks to the world academic institutions, is acquire a grant that allowed us to work with the Dade County Public School System to train 100 crisis intervention specialists. We divided them up in eight teams, and we basically divided the school system, about 50 schools, into eight catchment areas. These teams would be responsible for a certain number of schools. Much of the endeavor ultimately has to be decentralized. In a school system, as an infrastructure it is an extraordinarily useful infrastructure because it normalizes behavior just by being there. There are resources inherent in a school system in terms of counselors and nurses, and with appropriate training the school site could be a wonderful place to triage, identify, and share information, and utilize macro-intervention, such as classroom interventions and group trauma focus therapies. Ultimately one has to take advantage of some of the infrastructures that are already there.

DR. OLDHAM: I certainly agree. That is the historical experience that we need to know about and benefit from. If you think about the numbers here again, the estimates are that about 10,000 children lost one parent in this single disaster. That is a staggering number. Those are kids who actually lost a parent. That is not the children of all of the survivors and the severely traumatized parents who are dealing with an enormous amount, so in effect the children have lost parts of their parents for a while. Those numbers are huge.

DR. URSANO: I have a comment about the work that you did with the person who was dealing with Radio City Music Hall, which is an elegant example. The difference between coping and remembering is an elegant formulation, which you pulled from years of experience. We may overlook what constitutes the important skills in this setting. One of them happens to be an awareness of how people respond. Another happens to be what we choose as our target. In other words, our target is behavior and mental health in the mind. And, lastly, a willingness to participate at that level.

Defining the skills in that way already says there are very few sets of people willing, or able -- not that it is minimal, but it is a limited number. Therefore, we need to identify those people to be able to move forward and think about what skills are necessary to make exactly that distinction that you made. It is not only psychiatrists, but it is people with

certain skills. What is the skill set that we are looking for in terms of disaster, mental health, and behavioral interventions?

The second issue I wanted to be sure was on the table was the term "crisis counseling." I am not sure I like it. I am not sure I have a better one. I certainly use it. But it limits our view as to what we can do. The alternative term "crisis intervention" is a little broader, but may have some disability with it as well. Why am I targeted to that? Because when we say "crisis counseling", we often forget the idea of working with couples and couples' emotional support.

We also forget a wonderful model by Doug Zatzick at University of Washington, which is working with burn patients after they have been hospitalized. It is a case management strategy which involves follow-up and continual work on the telephone and localizing services, and in some ways actually gets to what Mike was referring to earlier about the concierge service in the employee assistance program. We need to be careful about what are the repertoire of possible early crisis interventions rather than just one, and that we limit ourselves if we do not.

Lastly, I am interested in Betty's response to your comments about Oklahoma, particularly this question about treatment of two populations, those that have recently become ill, meaning PTSD and/or depression, and then, secondly, those who were reactivated. These are serious mental health resource issues. We can say they do not belong in Brian and Robert's shop, or we can say they do, but they are a mental health demand in the community. And if these were people with broken legs, we would not be here debating this at all.

DR. PFEFFERBAUM: One of my concerns throughout the last six years in Oklahoma City has been that many resources came in to help the general population -- outreach services, public education, triage early. I do not think we did that very well in Oklahoma City. We were the largest grant that had ever been awarded up to that time although Oklahoma City is very small. One of the concerns I have had consistently over the last six and a half years has been that we have put a lot of effort into treating those who have had the normal reaction to an abnormal event and, although the numbers are relatively small, very little focus on those who have had true psychiatric problems, either exacerbated by the disaster or de novo since the disaster. Brian gives the best statement of what the Federal Government believes its role is, which is not to supplant already existing services for individuals who have psychiatric problems.

My view and one of my concerns and one of the reasons that I would like us to look at the legislation and the regulations and the interpretation of them, is that we have put a great deal of money and effort into treating those people who are basically going to do well, and not much effort or money or focus on those people who do not do well. I try to be very sensitive about the issue of turning people into patients but there are some real patients that evolve from a situation like this, and they need some attention and concerted effort. We need to know what is the psychiatric morbidity that occurs after something like this. It was high in Oklahoma City. I suspect it will be much higher in New York City.

I will throw out one term that fits for me when you talked about healing or recovery, and it is a term that I have used with respect to individuals, families and the entire community. It is that we will never be the same, but there is a process of integrating the event into who we are, both as individuals and as a community. The term has been "integration" in the way that we typically think of integration. Oklahoma City and many of the residents there have new identities that include this event. There are people whom you have seen in the news from Oklahoma City for whom a whole new identity has emerged as a result of the bombing. Most of us think those people are not so healthy, rather the ones and those aspects of the community that have been able to integrate the experience we think are healthier.

DR. FLYNN: One of the challenges that we have is that not all traumas and disasters are created equal. What tends to happen when the Federal Government gets involved is you get a piece of legislation and you try to fit that into a wider variety of situations than it is applicable for. To go back to some of the history, the Crisis Counseling Program was designed for natural disasters, and it was designed in the context of a Federal response to natural disasters. That is that the Federal Government steps in only to fill a gap between needs and state resources. There is not a lot of epidemiology to indicate that following a natural disaster, or most natural disasters, there are huge unmet treatment needs that can not be met by the existing resources. That is the way the program has gone. It is not that some portion of folks who have experienced natural disasters do not need those long-term treatment resources, but the argument has not been able to be made consistently that there are enough numbers of this that we need to change that program.

We discovered in Oklahoma City that we had a different situation. There were more treatment needs there. The Federal Government struggled with that. There were efforts to get the Federal Government to pay more for this. There were a lot of issues. The whole concept of disaster response is on filling that unmet need. There were, as there are in New York, huge numbers of monetary resources that existed in the city for the victims – Red Cross moneys, other kinds of moneys. The question as we tried to struggle with that was, okay, maybe we can fill that gap, but somebody is going to have to address why some of this other money can't be used for that. What happened was that we were very fortunate to be able to fund a number of treatment needs out of moneys the Red Cross had allocated for Oklahoma City over the years, a situation the Red Cross does not like. We were lucky in that.

I bet the same issue comes up in New York where there is over a billion dollars now that has been collected for victims of this. As other people and I begin to try to make the argument for more treatment dollars there, that is going to get somehow mixed in there. I can guarantee that as sure as we have been sitting here. I do think there has been a realization that situations like this are different than natural disasters, and that the Federal Government does need to have some opportunity to provide support for treatment. It is in New York supplemental appropriation requests that you submitted. It is in what I have submitted for our agency. We have requested $175 million just to support treatment services beyond crisis counseling. Whether that will get approved or not, I do not know.

There are any number of bills now that one of our challenges in it is hard for us to

figure out a way to get that money and titrate it out over five years. Government funding does not work easily that way. You get money in a year. If we know this is going to be out over five years, over ten years, how do we do that?

There is some legislation being considered now that would allow us in a situation like this to go back to a congressional committee and say, "We need this for treatment resources", and not have to go through the whole supplemental appropriation. It is the long way of saying we, from the Federal Government, recognize that there is a very different situation than we have in terms of the need for serious professional treatment that does not exist in most kind of natural disasters. This issue is still in flux, but there is an appreciation that those funds are needed.

DR. OLDHAM. That is very reassuring and your point that every disaster is unique and has to be thought about for what the specific needs are is very important. This is certainly one that we have never had the magnitude of before. The concern I have is whether there is some way we can try to be flexible enough to identify where the need is going to show up and then be able to bring the resources to meet that need. For example, I am already hearing that the emergency rooms are bulging at the seams in New York. These are in the voluntary hospital network, for the most part. Some of them are city hospitals, but many of them are in the Greater New York Hospital Association network of voluntary providers. Some of them have special psychiatric emergency rooms. They are very busy. Some of them are components of general emergency rooms. Now with the anthrax and smallpox concerns, we are going to see an increase in people coming in across-the-board in emergency rooms.

I do not know if there are ways that are in motion that are going to help provide some relief to those hospitals. Some of these are the same hospitals who are worried because they have a lot of vacancies in their med/surg beds. They are less occupied. Psychiatric beds are generally full. Lower Manhattan hospitals, for example, people don't want to go down there. If they can get care in Queens or Brooklyn, or if they are in adjacent states they will go locally.

There are many ways in which there are some broader implications of this with funding needs. The only thing I have heard discussed about that is that there was a recent amount of money, about $35 million, that was made available to compensate hospitals for losses related to the disaster. I am skeptical about how much good that is going to do. That is my personal opinion, because I understand that it is shaped in such a way that it is generally expected to be somewhere from $500,000 to $1 million per applicant, with a fairly high threshold of data justifying the request that has to be submitted. That may be perfectly legitimate but I do not think that is going to come close to meeting the need. I do not know what the rollout capacity is going to be as we go forward.

DR. FLYNN: The need to account for Federal money and at the same time be flexible enough to use it is always a dilemma. It is a constant tension. It is a tension that Tommy Thompson has talked about. He mentioned to me that he has to convince OMB that these things are necessary and has met with mixed success on that. It is a dynamic process.

One of the things I have learned in all my years of disaster work is, whatever else disasters are, they are political events. Probably the politics of these situations will move things more than science will any day of the week. When things need to get done, probably the second and third place we ought to look is science and evidence. The first place we ought to look is the politics of it.

DR. HOLLOWAY: Let me say something profoundly cynical. You are describing an organism which has organized itself so as to operate without any external receptors, that forbids the overall development of good epidemiological data by the way it funds things and does not carry out decent epidemiology. I want to suggest to you that that failure is not a failure by chance, but is an explicit political act which allows the distribution of these resources in an arbitrary and largely silly way. What I have been listening to described here is a situation in which we are doing various kinds of treatments that do not work, that are unmonitored, that are going to be developed and in which the phasing of the overall occurrence of casualties is largely ignored in the funding plans for dealing with those casualties, and in which the overall fragmentation allows people to exercise various centers of political power, whether it be urban power in New York, or national power in OMB. They can do this because there is no contrary data to suggest how they have gone astray that the media can report. The media can not report anything because the data is unknown. If you find a situation in which you are systematically blinding yourself because of the way you are funding it, one of the suspicions there is that this is occurring by chance. In my world in which the normal hypothesis rules, that is a pretty good bet. There is another possibility and that is that it is operating to someone's benefit and being manipulated that way because, in my period of working with disasters which only stretches over the small area of 43 years, this has been forever the way it has gone. It has not changed.

We have gotten better in terms of identifying some of the problems. I believe that some of the data is better but there is still not any commitment to developing the database that would allow the development of a reasonable plan that is based in data.

DR. PFEFFERBAUM: We are starting a study in Oklahoma City of direct victims that will be a six-year follow-up of a random sample.

DR. HOLLOWAY: And notice that when you are starting it, you are starting it retrospectively. You did not start the overall study in the past, and the epidemiologists are going to criticize the overall causal things you draw down. It is not going to be definitive, and there were proposals made in the past that were not funded.

DR. PFEFFERBAUM: I would add a bit of cynicism. Not knowing how well our system works in the U.S., Brian and I successfully transported it to Nairobi, Kenya, where we have much greater questions because of the cultural and social kinds of differences. We struggled with whether or not we should do that, and how we should do that, but it was the best model we had.

DR. HOGAN: I just want to say "amen" about the research thing. If an integrated, sensible, overall research approach is not commenced with respect to what has happened

in New York, we ought to blow up our research funding institutions. It would be completely unacceptable. Mechanisms exist to do it now. The denominator there with respect to the infrastructure of care that is available is going to be variable as well. Here are large parts of the country where in the public system, unless you are Medicaid-eligible or acutely ill, you cannot be seen, period. That is what the public infrastructure is now. The trend line is in the wrong direction with respect to that.

In times of crisis you can always tinker that a bit, and case managers can let their prophylactic visits go, and therapists can put off repeat visits to deal with new crises, but that is where we are with respect to the public mental health infrastructure. To the extent we are thinking ahead to the future and thinking particularly about biological events, it seems important to set aside and invest a little bit in proactive planning for this; I wonder whether it might be possible at the Federal level or maybe it is something that states could resolve to do. It does not take a tremendous amount to do that. Those people that you talked to, most of whom are a tenth or a quarter of an FTE, for them to gin that up would be relatively inexpensive in the larger scheme of things, and would have a significant impact over long-term. Some capacity at the state level and in major local counties or metropolitan areas, to look explicitly at the mental health components and to look in a preventative and planning way, would certainly be indicated.

Although people involved in managing Employee Assistance Programs are not at the table here, and with the way that the marketplace is shaped out now, there is a relatively small number of corporations that do managed health care that also tend to be providers of EAP for large companies. If you talk to three or four people, you probably touched on 70 million covered lives, and the state-of-the-art in larger corporations, despite tensions in the economy, is to move those EAP's more toward a preventive and early intervention model, and to look at workplace health and conceive of behavioral health in the workplace as directly related to productivity. An example of the leading edge of those companies is Sol Feldman at United telling me about just having acquired a company that essentially has nothing whatsoever to do with health or behavioral health, but is essentially a workplace concierge company that works on things like whatever is stressful that might be keeping an employee from concentrating, whether it is child care or a problem with parents with dementia or something like that. There are people available, whether connected to the EAP or separately, who work on essentially helping people solve their problems so they can get rid of the stress so they can concentrate. But the more concrete thought was to link both in terms of what are you doing now and what might you do in the future, to the big EAP provider.

DR. HOLLOWAY: I do want to give one warning about that because in a sense that reflects the system the way it was organized in the old Soviet Union, that we encountered in Armenia. It was not a bad system. It showed many aspects of public health response in the acute earthquake phase, with the generation of probably 90,000-plus deaths (although the official figure was 25,000) and more than 100,000 other casualties. It showed in the acute phase a real capacity to operate. Fundamentally the system for providing employee help which came through the organized industries was an employees' assistance type operation. Done within the Soviet system, it completely went away when you buried all the plants. That was a huge problem. Once the earthquake occurred and the industries

went away, the overall capacity to support precisely those caregiving institutions went away, so the disaster had part of its large effect by destroying the capacity to deliver those mental health services. That is an aspect of future planning you ought to keep in mind.

DR. URSANO: Dr. Holloway, this is a good opportunity to tag onto that the issue of secondary stressors, which we have not addressed. It is that we know with good data it increases the probability of PTSD as well as other disorders such as unemployment, the offices that have closed. The question of how you deal with the issue of unemployment is a mental health issue but clearly never funded under mental health. We know its impact is huge and you are not going to get to an employee assistance counselor if you are unemployed. Another dilemma for us to face in this is how do we deal with data that we know is present, we know impacts mental health, and represents an important mental health intervention.

DR. SCHOCH-SPANA: Hopkins actually sent up a rapid response research team to New York, and we were focusing on the way in which people organize themselves to offer goods and services as volunteers. Along the way, we learned this conflict around who was being defined as the appropriate recipient of mental health services. I want to share this data because you seem to be the right bunch, and we are just sitting on it right now. There were displaced residents of Battery Park who felt that they were not being seen as victims to the same extent as families who had lost members in the Twin Towers attacks or responders. Responders and families had been elevated to the apex of the status hierarchy of victims, and they felt that they were not being taken care of. Owners of small businesses who were shut down in the area right around Ground Zero parallels the farmers who were losing not only their livelihood, but a sense of themselves in that business, their family business. They felt that they weren't being treated appropriated. There is that conflict, who is deserving of support.

That is a bit of data that we would like to share that we picked up along the way. To follow up what John said, you brought up this issue of the better use of volunteers, and I again want to underscore the positive community response to disaster. We need to understand that. I know I am with a lot of psychiatrists. I hang out mostly with anthropologists and sociologists, so maybe we look at the glass half-full more, but I think we need to understand those social processes as well.

When it comes to emergency management and response plans, we need to somehow build into them an acknowledgment that there will be this insertion or offering of vast amounts of goods and services from people. The Red Cross is great for giving people the tools that they need and for the efficient use of large numbers of volunteers, but the Red Cross can not do it all. There must be other ways and other institutions by which we can channel those positive responses of a community.

To follow up Mike's comment about thinking ahead to the needs that are specific to bioterrorism, there are two issues that get wrapped up together. There are good reasons for that, but we need to make sure we do not conflict two issues as it relates to outbreaks of infectious disease. There are at least two needs (I am sure there are a thousand, but let me focus on these) and the communication needs that are this: guidance and education on

containment of disease. If we are faced with a large outbreak of lethal and communicable disease, we are going to have to equip the public to be allies in epidemic management. That means good guidance and education and that we task them and they become public health, whether it's practicing isolation practices at home, or making sure people are following their antibiotic schedule correctly. There is that communication need specific to epidemic management. We have to assume the public can take care of itself because it is going to have to since there are not enough professionals.

The second issue is psychological support over the short- and long-term and how are those going to be similar to or different to the Twin Towers. Hopefully we will never find out. Although these two issues get wrapped up together because they are relevant to one another, we need to provide the infrastructure that addresses the specific qualities of these two needs. The conversations tend more towards the delivery of mental health services, but we also need to focus on this vastly important communication need of good guidance and education to a public that could be facing a catastrophic epidemic, or even a bunch of anthrax letters. We do not have to talk about smallpox, pneumonic plague, and all those, the letters are enough. We could be getting better information out to folks right now.

DR. MARLOWE: There is an implicit issue that really is not that implicit, but should be brought to the surface by the group, and it is this: what should be the division of resources, economic, intellectual, professional, in terms of those dedicated to prevention, to the creation of institutions in concept nodes designed to prevent and moderate the emergence of casualties with significant symptoms or disability, as opposed to those that should be devoted to post-hoc caregiving. We have to keep these two both apart and together because they do not involve necessarily the same phenomena. One is individually oriented, the other is far more group and socially oriented.

DR. SHAW: PTSD is a very bad model for understanding trauma or disaster. PTSD implies a psychological response to an event that has a beginning and an end, something that is circumscribed in time and space. In actuality, these events do not end. You have a whole repertoire of secondary stressors, the dislocations, separations, unemployment, destruction of an infrastructure of a community, and it seems that much of the prevention has to go on in the aftermath. That is, how do you prevent cascading psychological morbidities, co-morbidities? Part of the difficulty is that we always see it as an acute problem rather than a process problem with enduring derivative effects. We do not mobilize resources for those enduring derivative effects, but we always think of something as if it is going to be acute and circumscribed and quickly over.

DR. SCHREIBER: It seems like we have tremendous resources federally. You talked about the personnel that come out and nationally everyone is concerned. I do not think we have a consensus model that is ready to go and that we could apply. It seems like we reinvent the wheel every time. There is a great deal of experience in this room about things that work and things that do not work, such as how to do surveillance, how to do treatment, looking at phases of response. It seems we need to have some integration nationally so that we can be responsive in a quicker way.

MR. ARMISTEAD: I wanted to go back to the unemployment piece. This morning

we talked about, and agreed, that the mental health system is strapped. When you look at the unemployment, Reagan Airport and all this with Virginia is partially open, we have gone through the immediate services process and had the grant, and drawn down money. You do that quickly. We have community service boards in Virginia, 45 of which are in the Northern Virginia area, that are our local service providers. They are creatures of local government, they are not state employees, and they are partially locally funded. These are the most affluent boards we have in Virginia. Of the five that we put in for, the impact last week now is such, in the economic area, that two of them now have budget cuts, and one of them is having to lay people off. You have got a system that is overtaxed now, and when you have one of these events, even though the Federal Government is trying to put money in here you lose some of the precious capacity that you had, at least right now, and it makes it tough. Immediate services grant, you are talking about in-kind contributions and stuff. When that starts happening, it throws everything off, and we are already beginning to see some of that. With all the revenues, you are talking about creatures of government. Virginia's economy (and I think most of the states' economies) was going down anyway. There is concern over that, too. Things could get actually worse instead of better.

DR. URSANO: To comment on a perspective piece, keep in mind that we do not have to make this one issue to solve. In other words, it clearly is a multiple-issue problem. The idea that we must deal with prevention as well as caregiving strikes me as absolutely true. It is not one or the other. We can outline the different issues and problems. What we are going to do with these is punt them to our all-knowing people here who are going to solve, and select, and decide it -Brian and Robert, whose office we are reporting to and providing the report to, as well as making it available to other people, and also hopefully providing you all with documents that you can use through your own channels as well. Our goal is to outline the multiple problems that need to be addressed in this type of issue so that we can join around agreeing that yes, that is a problem. And then what are alternative solutions?

DR. TINKER: I want to follow on Monica's comment and put in another plug for the public's involvement in this response. We quickly lose sight of their role in this. Alvin was talking about a human response system, and we spent a great deal of time talking about the expert's role in all of this response (the "first responder") but we are also overlooking or neglecting what I would call the "unofficial" or the public's role in this response. I brought in a handout, and this is a concrete example of what is happening on the ground right now, real-time, with real people. It is called the Garrett Park Action Plan, and it is the community that I live in. Shortly after September 11th, a number of people in the community decided, unaided, unguided, unmandated, unfunded, to come together, lawyers, doctors, housewives, electricians, carpenters, and took it upon themselves to figure out what our community needed to do in terms of response, not only in response to bio/chem disasters, but just disasters in general. It is a great example of this ripple effect and I appreciate Brian's comment about the issue of resiliency. In our communications, it is important that we not only communicate the message, but that message is balanced with the message of resiliency. Since September 11th we are seeing crude forms of mini-democracies popping-up all around the country, and they are taking it upon themselves to develop plans.

If you look at this plan, this is just their beginning. To show you how crude it is, this is a lay model. They have lumped their mission statement, their objectives, and their goals all together. But what I appreciate about the attitude and the process and the thinking is that it exemplifies resiliency. From a communications perspective, we need to figure out how to harness this resiliency around the country. I would hope that we, as experts, tend to focus on risk, risk, risk but we need to counter-balance that message with resiliency. If you scan through this plan, at the bottom they are talking about buddy systems, safe houses for school-age children, developing multi-level PR campaigns in the community, neighborhood papers, civic meetings, and bulletin board flyers. This is an energy that we need to harness throughout the country. It is happening spontaneously, it is not happening as a result of a room of experts gathering and then us providing the guidance or some type of charge that you need to do this. No. This is happening spontaneously, and it is something that we need to be aware of and work alongside.

DR. URSANO: One of the things it would be easy to do would be to go to civic associations and ask them what they have done, and collect exactly these kind of ideas that are being percolated out there right now.

DR. TINKER: I am a communications person, and one of the challenges in all of this, and what we have to be careful about, is that we are not operating from a purely information transmission model to where there is a one-way communication from "the experts" to the lay audiences, but we have an information transactional model, where we are engaging with people through mechanisms like GAP. We are not making assumptions about what we think people should know, but we are finding out what they want in terms of information, how they want it, when they want, and where they want it and that is a pure risk communications response. The beauty of what I got out of this today is that we are now balancing out with a resiliency message. That is part of the massaging here.

DR. NORWOOD: Is anyone doing focus groups for different populations to see what messages about anthrax are reassuring?

DR. TINKER: Not that I am aware of, but it is a big part of this process, to find out not only what people need, but what they want because, if we find out what they want, it is going to make them that more receptive to our message.

DR. SCHOCH-SPANA: We put in a grant proposal to MIPT for this. It is risk communication during an outbreak of infectious disease that was initiated by bioterrorism, and it does include focus groups. I do not know if the money will come, but we are hopeful that it will.

DR. PEELE: You might want to give them background about Garrett Park and who decides to live in Garrett Park. On the other side of the coin, what you are saying highlights a sense of isolation that most feel that do not belong in communities like Garrett Park.

DR. TINKER: I do not think it is just Garrett Park. There are five other groups within Montgomery County alone that are also doing the same thing in their communities, and

this is happening all over the country. There are hundreds of these groups now across the country.

DR. URSANO: Garrett Park is quite a liberal, outspoken group. I think they are the only nuclear-free zone.

MR. NOVINSKI: I would like to go back to one issue we talked about, scapegoating, and we did not deal with any of that. When we are doing our crisis counseling training, we have decided to treat that as displaced anger and part of a grieving response, recognizing that we therefore have to be aware of anger management programs. We have developed some things with the help of Minnesota; they have some videos that are 15 minutes that discuss those things. They are set up to develop support groups in the community and allow venting dealing with those issues. In our training in that, we are dealing with that and recognizing that it is part of a process. We are trying to normalize and focus those energies in terms of healing events in the community instead of the displaced anger.

DR. SCHOCH-SPANA: As professionals we need to advocate for a better reporting system in the United States about hate crimes because currently there is no centralized reporting of hate crimes to the FBI. Not all law enforcement agencies are required to report hate crimes to the Federal Government. That is a problem. The Arab Americans might feel better protected if the Federal Government were actually following and documenting this phenomenon, in addition to providing protections. That is part of our role, to advocate for documentation of those problems, and recourse for the victims, too.

MR. NOVINSKI: A problem is that we have people being targeted but not verbally, so there is no documentation of who and why. You have to be out there in the communities and be sensitive to what is going on.

DR. MARLOWE: The best general documentation comes regularly from the Southern Poverty Law Center, and those of you who do not know it should. It is Morris Dees' outfit, and in every bulletin they document every known hate crime that has been reported in the United States.

DR. TINKER: This is something that we have been doing since September 11th. It is called Media Analysis of Mental Health and Post September 11, 2001 Reporting. What it does is provide a fairly quick and dirty overview of how the media, according to the various formats, have been reporting on mental health issues. If you skip over the first two pages, which is a sample press release that we did for a client around bioterrorism, there is a quick and dirty analysis broken out according to the various media formats. The preferred information source, newspapers at the very top of the list, wires, paid wires, magazines, TV, radio, and government. What follows is a sampling of clips from the full universe of analysis that we were looking at.

The interesting and fairly humanistic observation on my part is that in the first three to four weeks after September 11th people were going to the information sources that they were most comfortable with, and those sources were print and electronic broadcast media. We also observed that the news people are now starting to reconnect or rediscover their

human information sources. Coming back to Garrett Park, they are reconnecting with neighbors, friends, family, and that is another channel or vehicle of communications that we need to think about very seriously, and play to.

DR. CLIZBE: Randy mentioned this being up on the Web. This is the new Red Cross brochure. It is called "Preparing for the Unexpected", and it is an attempt to go through some of the rudimentary things that families can do to be prepared. The Red Cross has a great deal of age-sensitive information available on the Web. For example, we have information specifically geared towards young children, middle school, high school, and adults including information specifically for seniors. The problem is that the information is generic in that it assumes that what a high school in New York City needs to know is the same as what a high school in Madison, Wisconsin needs to know, and that may not be true. The weakness is that it is presumed to be applicable to everybody in a particular age group. The strength is that it does go from very young to the elderly in separate materials.

DR. FLYNN: One of the problems that we have is our cultural inability to take the long view of things. It is reflected in funding patterns. It is reflected in how we deal with these kinds of situations. As a concrete example of that, when we look at the funding proposals that are in, there is this Sophie's Choice dilemma that is uncomfortable and pits the national needs to build this field and getting more people trained to understand this kind of work against the acute immediate needs of the states. Both of those are important, but our tendency is to respond to the immediate needs and not take the long view. Until we can somehow figure out that these are issues that we should be caring about as a culture, and if we say the world is different now and will always be different and translate some of our strategies into reflecting that new reality, that is very tough because there are things we need to do now and there are things that we need to do in the future.

One of the challenges that Robert and I have had about getting our bioterrorism plan approved, or at least even considered now, is that they do not want to hear about a five-year plan for this, they want to know "what can you do now?" Our response has been there are a few things we can do now, but this is a five-year issue. What can you do now? We want to fund you to do something now and, if you can not do it now, then maybe we will not fund you. That is a cultural thing that is problematic.

DR. HOLLOWAY: It is not exactly cultural, it is called the Constitution of the United States. As long as you fund everything on a yearly basis, you end up with yearly plans. We have been doing that for a couple of hundred years now, and it makes this long-term planning extremely difficult.

DR. FLYNN: The Constitution is a reflection of our culture.

DR. HOLLOWAY: In fact, you could argue the other way around, too. One of the things this reflects culturally was a profound distrust of aristocratic classes establishing long-term courses that could not be disrupted by a legislative body acting on a yearly basis, particularly those parts of the aristocracy that could arm themselves – armies. Therefore, we have been very explicit about controlling that aspect. The cultural theme may very well be, in modern times, the reduction of the commons as an overall part of our society because

the commons, as a part of our society, has one characteristic: individuals do not realize the profit from the commons. When that is then reduced, you then are getting into many of the areas you are talking about funding being ensured of funding. It is always interesting to me that although people discuss Adam Smith, who was the founder of the economic system in Wealth of the Nations, what he says in Wealth of the Nations is that there are items from which individuals should realize all the profits, but that a society to survive must examine those areas. He thought military might be one, roads might be another, even though roads in the time that he is talking about were frequently private enterprises. Those were things from which an individual cannot realize all of the profits and, therefore, must be part of the commons in order to maintain a healthy economy. These are issues that are now being ignored culturally in our society.

We need to talk about how to influence politics such that there are politicians who will speak for the commons. It is always embarrassing when you are talking to folks who are, as we are, employees of various governments, to say that this is something that has to reach those electoral politicians that can represent the culture and speak for that aspect of things in order to get these things funded over longer periods.

DR. FLYNN: In this particular situation, bioterrorism, the short-term view puts us at a distinct disadvantage with our enemy, who does think long-term and is very patient. When we want things solved and over and back to normal in a couple of weeks, they are willing to wait. Our culture is handicapping us with this particular enemy.

MR. THOMSON: Getting back to associating all of this together, one of the things that we could do now is fund some capacity type issues for the states. Speaking as one of those disaster mental health people for the states that is tasked one-quarter time or less to this type of issue, one of the problems that we often face at the state level is funding in general for mental health, as we all know, and then seeking funding for these kinds of things that are considered extra (disaster mental health is not one of the basic missions of our state Department of Mental Health, as it is not in most of them). One of the things that could be done that would be very helpful is establishing a granting process to help the states build the capacity for disaster processes, disaster mental health processes. That is something that would have long-term effects but we could do now.

I would like to comment on the importance of providing people something to do. Tim touched on it about going back to the communities, seeing what they wanted and that the communities are acting on their own. Looking back at World War II even, one of the things that made people feel better so much of the time was that they did have specific things to do. This was brought up to me again yesterday afternoon by a psychiatrist that I met in Arlington. He said the same thing. People want something to do. They are asking, "What can we do?" Not only what can we do about anthrax and feeling safe, but also what can we do proactively to help. Both types of issues need to be addressed, both what can we do to protect our families and ourselves and what can we do specifically to help in the long-term process. Those types of things help to alleviate the feelings of helplessness and powerlessness that so many of us and our constituents feel and enable them to feel they have some power and control over the situation, whether real or not. Many of us really feel

that we have to have something specific to do. That is what we can do as a group, too, is to define what some of those things are -- what are the things that we can do.

DR. URSANO: In these types of meetings, I like to use the word consensus, but what we are really looking for is "idea lists", so that we capture the world of ideas and possibilities that we can pass on to those who can make use of them. We try and formulate those, at least some of them, in a way that will be useful to them, which they will provide us some guidance on. We also think about other avenues that such ideas might go to. From our last meeting over a year ago, the particular document that was created, of which some of you at the conference have seen, made its way to New York City and to the National Academy of Sciences within the last three months, and certainly to Brian's office and large numbers of people within HHS. So it is an avenue to get ideas forward in multiple venues. I would encourage you tomorrow to join into this task. We will spin that by thinking about them, spitting them out, and giving everyone the opportunity to talk, thinking about what we have already dealt with, and how to make sure we haven't lost something. It is going to be "think of what we talked about and let's make sure that we have it down somewhere so we can remember it."

7

Discussion

Moderator: Robert J. Ursano

DR. URSANO: The plan this morning is to work on summarizing where we have been, along with any new ideas that you generated last evening. What I have done in order to get us started is to jot down from my notes either idea, points of interest, or recommendations. You do not need to be able to read this. I do, because Ann will come up afterwards, tear this off, and whip it off to our office to make sure it does not get lost because it helps us get organized. It provides us a brief outline to which I will add as you all talk.

After discussions with people last evening, I found myself preoccupied with both what were going to be our recommendations and what were our points of interest. Again, returning to the question -- I know these are hard to read but it will allow me to speak to you about it -- what really is the difference between bioterrorism and other types of disasters. I thought we might end up bouncing back and forth between these two areas. This will help clarify how this is different from what we already know. This is a very skilled and bright audience, with a lot of background in the area of disasters and disaster mental health intervention.

Our focus here is on behavioral and mental health interventions related to biological agents -- biological agents of terror. We certainly want to mention other elements of disaster that are critical, but what is different is our focus on biological terrorism.

So the question of what is different about a bioterrorist attack? We heard more in the news this morning about D.C. and another anthrax contamination. I jotted down three things quickly that highlight the difference between bioterrorism and other disasters. Are there other items that you want me to write down?

First, there is the continuing expectation of attack, the ongoing experience of when will the next attack come, seemingly quite different from an earthquake -- but maybe not so much so from an earthquake actually -- but quite different from a hurricane; certainly quite different from a plane crash.

Secondly, the issue of contagion. We spent a great deal of time on this issue. But I do not think we have begun to scratch the surface in terms of understanding the mental health issues. We need to return to more work that Monica led us to in terms of the historical review. We also need to return to the issues of infection in hospitals and consultation liaison services and how people respond to infection over time, as well as how school systems respond to contagion.

A corollary of this issue is that in bioterrorism we are clearly dealing with the question of public health as the leading edge of intervention, in contrast to some other types of disasters in which that may not be true. We are now open to discussion of items to add to this differentiation of bioterrorism.

DR. WALDRUP: Dr. Ursano, I would also add a fourth, which would be the economic attack.

DR. URSANO: The extent of economic impact, perhaps.

DR. WALDRUP: In terms of foot-and-mouth disease, which is not a public health issue, but it would certainly have a devastating economic effect.

DR. URSANO: The economic effect of bioterrorism may be greater actually than the economic effect of other disasters in particular, certainly in its geographic distribution.

MR. ARMISTEAD: One of the things that feels very different from natural disasters is the timing of certain aspects - in particular some of the mental health aspects. Perhaps for the numbing. Maybe it will be different if we go out further in time. It seems like there is a period for at least certain things, of more extended numbing, and then the onset certain kinds of problems.

Going back to the economic piece. In natural disasters, there is usually an economic impact of the hurricane or the flood the business closures, but with bioterrorism, it seems like, even with the magnitude of the Pentagon and, certainly worse than that, the DARK WINTER scenario, it seems the economic impact is a whole lot quicker.

DR. URSANO: So the economic impact is also phased differently.

DR. TINKER: I would like to add one more, which I think is pretty obvious, that man generated the nature of the trauma, particularly the secretive nature -- it's secret intent --, quickly gives rise to paranoia and scapegoating, and conspiratorial theories.

DR. URSANO: Human caused malevolent intent.

DR. TINKER: I think particularly the secretive intent, so that it is unannounced.

DR. URSANO: Secretive may not be totally different from other war-related elements of disaster, but it is ongoing.

DR. MARLOWE: I think there are a couple of things that we have to consider in respect to the general population: the mysterious nature of the agent, the absolute lack of knowledge on the part of large segments of the population about how the agent works and what it is. We have not discussed the fact that there are segments of the population, e.g., Christian Scientists, who reject any of the interventions that might be offered to prevent damage by the agent.

DR. URSANO: Excellent point. So, we have subpopulations, which automatically will refuse the helpful interventions.

DR. MARLOWE: That's right. Some of this is summed up by the massive and overwhelming biological ignorance of the population and the need to cope with that. For those of you who read Sally Quinn's piece a few weeks ago in the Washington Post. She described the purchase of gas masks and Cipro and creating a safe room in the apartment, et cetera, et cetera, none of which would do much good.

DR. CLIZBE: I think another special feature is the uncertainty and the unknown scale and nature of what we're dealing with. Compared with a natural disaster, where what you see is what you've got. Here none of us know how big it is going to be, where it's going to go. It evolves over time.

DR. HOLLOWAY: Would you accept the phrase "the unbounded nature." You cannot distinguish the boundaries.

DR. CLIZBE: Yes that is a good way to describe it.

DR. URSANO: Size and cost are all unbounded for extended periods of time.

MR. NOVINSKI: I think we also need to realize that, what we have said over and over again, the intent is to destabilize society, erode our confidence in the Government. Here we have also a question of civil rights and the tolerance of the public in limiting some civil rights. At what point, if that confidence in the Government is impacted, will the tolerance of this erosion of civil liberties not be tolerated by the public. I am talking about the inspections, standing in lines, etc. All of these things are tolerated in a very patriotic way right now, as long as we maintain confidence in the Government. But the minute we start getting misinformation, the public has that confidence eroded.

DR. URSANO: My concern is with the word "erosion" which is a valence-based statement in contrast to "alteration" perhaps, or is there a better word? But, clearly, I agree.

DR. MARLOWE: There are also the probable limitations of civil liberties. Probable limitations, functional limitations. I do have another question, and it's not about what is different, but have we defined what the receptor sites are for the product of this meeting?

DR. URSANO Receptor site No. 1 is Brian and Robert and their office. You will notice, by the way, that they are not here. They are downtown dealing with the present

crisis. This conference is funded from Brian and Robert's office. The results of this conference and the recommendations from this conference will first go to their office. That means that our target is how to assist the Federal Government in assisting state and local governments. How to help the federal government in assisting state and local governments and regions. That is our No. 1 target.

We will have the opportunity to send the conference recommendations to many people, including those who were invited but were unable to attend. Dr. Josh Lederberg, a leader in the nation on this topic, requested a copy of the proceedings when he attended the last meeting. We also hope that each of you will find it useful and distribute the recommendations where you feel they may be helpful.

So, the audience is potentially broad. But again, our primary goal is to address Brian's need. His office is the one saying, "How can I better help the states and localities?" He's the one saying, "We need to do this different than we've done it before." It's because of his foresight on this -- which was a year ago, not two months ago -- that, in fact, this conference was set up.

DR. HOLLOWAY: The one thing we do not want to overlook is that bioterrorism engages a different set of institutions -- first responders, follow-up responders, et cetera, et cetera. Therefore ordinary disaster funding may be misdirected with regard to providing support to some of those institutions. I am thinking about the fact that the first responder in the case of bioterrorism is frequently practicing physicians, the involvement of the private sector, the diffuse nature of disease reporting, the overall utilization of hospitals and particular kinds of hospitals -- different wards that are staffed differently, not trauma wards. So, it is all that institutional impact. In an earthquake disaster, insurance companies are likely to be hit; here it is health insurance, not house insurance.

DR. CLIZBE: Department of Justice.

DR. HOLLOWAY: Department of Justice, that is another one. They have a different kind of involvement.

DR. VEENHUIS: Depending on the agent used, health responders themselves may be affected. There may be a diminished workforce to respond. And then there is the unmentionable, health care workers refusing to participate in the care of people they consider likely to infect them or their families. Early in the AIDS epidemic people refused to work with people who had HIV. That was true in the smallpox epidemic in India. I heard that physicians pulled out very early.

MS. CAREY: We have to look at the overlay of a very critical shortage of nurses nationwide. The obligation to serve the public falls upon this part of the public health infrastructure. We are woefully understaffed, and outrageously over taxed because of issues that are now hitting the national forefront such as accreditation related to mandatory overtime, concerns about licensure status if you're working two shifts repeatedly, and a myriad of things.

About the issue of contamination. Wherever you put people with these, as far as the public is concerned, "strange diseases", you need to recognize the possibility that the particular building and/or makeshift, whatever, will have to be taken out-of-service for a long time.

DR. MARLOWE: I would like to pick up on Mike's point about civil liberties. Preparing people who are coming out of two libertarian decades, for things like quarantine, compulsory tracing of contacts, and other things that have been rejected over and over again in the general community, is difficult. These same things were accepted in my childhood because we had nothing we could do about most contagious disease. When I had Scarlet Fever, we were quarantined for six weeks. These are critical issues that have to be addressed beforehand in order to educate the public and get them to understand why these actions have to be done. People need to understand that they are not necessarily arbitrary invasions of personal liberty or personal right.

DR. FULLERTON: My comment has to do with the need for an ongoing relationship between physicians and the media. In other words, the importance of establishing credibility in someone the public can believe in, rather than having the news reporters telling people what is going to happen. I think there is a big difference with the direct relationship of physicians.

DR. URSANO: So the medical-media relationship is different than in other disasters. I would agree with that.

DR. SCHOCH-SPANA: We must remember that there are certain resources that we have scarce amounts of right now, including smallpox vaccine and anthrax vaccine in terms of no availability for the civilian population. So, we are looking at scarce medical resources. Depending on whether it is a contagious disease, what we will see is an increasing movement towards more severe forms of disease containment measures such as quarantine.

Secondly, it is not simply the general public that does not have a working knowledge of the microbial world. This is also true of leaders. They also need to be educated on these matters.

DR. URSANO: Monica, as you were speaking, I was thinking of the number of people affected that relates to the limitation of resources available to accomplish the task.

MR. NOVINSKI: In terms of leadership, I also believe we need to really think about stress management for our leadership. I believe that is really important.

DR. HOGAN: We spoke at some length about the infrastructure issues here. There is also the necessity to connect the public health infrastructure with two sectors that it is not well connected to, one is mental health and the other is acute care. We have not had to deal with anything like this before. Perhaps with HIV, but the health care system has changed so much as the public health system has been eroding.

DR. URSANO: You raised the important issue about the interface between mental health and acute medical care - in contrast to the chronic – and the public health system. HIV really did not raise the acute infection primary care person walking in the door issue, which is a whole avenue for training. The training of primary care providers comes up with this.

DR. HOLLOWAY: I want to argue with that. HIV, you will recall, presented as AIDS, which is an acute problem presenting to the acute care community. That was a real problem.

DR. MARLOWE: An issue of some delicacy in terms of what is different, is how to deal with what has been the political disconnects between some medical institutions -- I'll use APHA as an exemplar -- and folk who, in APHA's case, currently have political power. I think there is an issue of how you professionalize relationships where there have been political contentions between those institutions and the nexus of power.

DR. SCHREIBER: We have mystery, but I also think there is myth that also surrounds bioterrorism throughout the ages. Another issue is the location of damage. It is not simply an external event. The locus becomes internal --your lungs or wherever. What does that mean?

DR. PFEFFERBAUM: I worry that we become enemies of each other through the infectious process.

DR. SCHREIBER: Even within a family.

DR. VEENHUIS: Is that also related to the fact that if you do not have sufficient antibiotic or vaccine, choices would have to be made about who is to receive protection or treatment?

DR. URSANO: Or also if it was smallpox and contagion spread among family members. How would one respond if one's spouse came down with smallpox? How many of us are really willing to maintain quarantine in that setting?

DR. MARLOWE: This is where you get into the issue of quarantine. The classic way of handling smallpox has been to create a ring of the vaccinated people around those who are ill e.g. vaccinate in that area of the ring. Now, what you've got to deal with is the 90 percent of the population that has not been exposed and their responses to this. What is medically and epidemiologically most desirable has to be dealt with in terms of possible political firestorms that can be created.

DR. SHAW: Many disasters are very circumscribed in time and space and resources are implemented centrally. By definition this type of assault is decentralized and requires multiple echelons of intervention.

DR. URSANO I like the word decentralized.

DR. FULLERTON: And it crosses geographic lines

DR. OLDHAM: In terms of the human reaction, there is the difficulty differentiating what would be a truly alarming illness due to bioterrorism, and normal flu or infectious disease. Also the emotional panic factor that ripples through the country. People will come in and even we, in the health care system, will have trouble identifying and reassuring because it is not even easy to make the differentiation at the first presentation. There are many challenges both in terms of the actual medical management and the emotional overreaction that can be very widespread.

DR. URSANO: That would include the difficulties of measuring exposure. If a plane is crashed, you know who saw it and who was there.

MS. CAREY: Another element we have to consider is who is the enemy. As someone said a minute ago, fear of contagion, and what it can do to our financial institutions is important for this very, very essential infrastructure. People's paychecks may not be cut because the staff is not there. This has implications for the entire fiscal process across the United States.

DR. VEENHUIS: Isolating communities may also result in not being able to get food and medical supplies to them. We heard in Minnesota the example where truck drivers were driving 200 miles out of their way to avoid – just out of the fear of contagion. I think much of this can be summed up as the tremendous fear of contagion that could arise in the population.

DR. URSANO: There is a subtle aspect of the recent events here in Washington, D.C. The media was commenting about the number of high schools that have canceled their traditional senior high school trip in to Washington to see the Capitol.

DR. TINKER: This also suggests the need for bottom-up grassroots solutions as opposed to top-down solutions. I do not think we, the experts, can do this alone. We have to engage the public in the process.

DR. MARLOWE: There is another aspect of this that is, in a sense, more critical than in other forms of disaster and even terrorism – that is the activity of hoaxsters, opportunists, and an infinite number of people who we can call "hackers" of one sort or another. These people are going to attempt to exploit this for either their own psychological or personal political reasons. This means that no infected parts of the community will be assaulted with the possibility and the threats that they have been infected. This behavior, of course, has been rather massive in the last couple of weeks.

DR. URSANO: At first, I thought you were talking about exploiters, meaning selling.

DR. MARLOWE: That is another part of it.

DR. URSANO: But that is present across disasters. However, the idea of hoaxes is very important and distinctly different. You do not often have a hoax. We do on plane bombs. But we do not in earthquakes.

DR. MARLOWE: Yes, but a bomb-sniffing dog can take care of that fairly quickly.

DR. FULLERTON: Along with contagion and not getting paychecks, immobilizing the mail system is one of the methods by which that can occur.

DR. HOLLOWAY When I have discussed quarantine with infectious disease folks, Josh Lederberg and others, the number of occasions in which quarantine is worth anything is very small. A number of these issues such as quarantine then begin to raise the question of damage done by doing well. In the absence of a clear set of actions, people tend to do things and, in general, those things are as likely to cause things to get worse. After all, as physicians, we do belong to a profession that invented 2,000 years of bleeding as a way of treating illness. That alone should make people suspect of our future behavior. This does create the opportunity for much iatrogenic mischance, both by politicians and physicians.

DR. URSANO: And with that introduction, let's turn to our list of possible iatrogenic interventions for either good or ill, and begin to list them. One of the issues that came up multiple places is, for us to remember that we have multiple targets. We have population issues. We have those who were clearly exposed. And we have issues of those who were vulnerable prior to the event. We are interested in all of those. Recommendations that relate to any of these populations are of interest. This would include traditional mental health issues as well as prevention including primary prevention, which has come up most in our discussions of the larger population.

DR. VEENHUIS: People in Washington and New York who were affected by the events of September 11th, have a somewhat different slant on this than the rest of us do. I think we are focusing on will bioterrorism continue. But I also think there may well be other disasters that could seriously affect the morale of the country. So, if we keep having this double-whammy of disasters and then bioterrorists, it is more complicated than perhaps we are looking at.

DR. URSANO: I would agree. The population issues span beyond bioterrorism. It is actually a theme of our department, that it is a mistake to think that disasters are geographically located, including ones that are earthquake-based. They just are not. These are not meant to be necessarily new and unique to bioterrorism.

Media came up many times. Media are a major vector for good as well as for ill. How can we best make use of the media and mass communications? How can we facilitate its accurate use? We made a distinction between the media's trying to "get the quote," the speed of getting the quote out, and the need for accuracy. Clearly we want to identify ways to assure accuracy or increase accuracy. What we mean by accuracy may not be what others would mean. In general we were referring to those parts of a quote, a story that will facilitate population responses and in those exposed and vulnerable groups. I thought there was a very nice comment on this by Joe Barbera.

Discriminating bioterrorism from the flu is an example where information in the media is needed. And that there are ways to do this (by the exposure question for one). He talked about the leading edge in a natural epidemic, that is those who have impaired immune function will show up early in a natural infection and those that are healthy will show up later. In this way one can get at least some handle on what is coming in the door. Perhaps we need to advertise this more.

DR. HOGAN: Just to build on that plan, it struck me yesterday that this flu season that we are about to enter is coming up very quick. It is a test of all this. The next flu season is going to be a significant test and/or opportunity for all of us.

DR. URSANO: One of the points you are raising is an "early alert" to Brian about what is our plan right now, this minute, next week, for the present flu season, particularly on how to manage information and population education. That's a wonderful point. My assumption has been that it was not random, that this time of year was chosen by someone to distribute anthrax.

DR. MARLOWE: How effectively can we get Joe's assertion out to the public that we can, indeed, rapidly discriminate between anthrax infection and the flu? We deal with a large swath of the population, ranging from the ill educated to the presumably over-educated. Many if not most of both groups have not the vaguest idea about this. What are the informational channels? How do you do it?

DR. URSANO: That is an excellent point, particularly in the context of this urgent issue. This may end up No. 1 and e-mailed to Brian - it is not simple. This is a complex concept to get out. How do we translate this into "Loose lips sink ships" or "Remember, only you can prevent forest fires?"

DR. HOLLOWAY: What about "Wash your hands, stay healthy." The media situation is particularly problematic because the media is under attack. Our enemies in this case -- and let's do not forget we are at war -- has chosen a strategic target, our media, as a subject for harassing fire. That changes how they are going to receive and be receptor sites for various messages that come to them. We need to factor that in.

DR. VEENHUIS: There is an urgent need for a pro-active ad campaign. John, the group that you were talking about, for the slogans, "Smokey the Bear "and even "Loose lips sink ships." One of the most successful campaigns is the anti-tobacco campaign. There needs, right now, to be a message out to the population that the health community is prepared to handle flu. Right before I came down here, I was dealing with the flu vaccine, which has not yet been released. There needs to be an ad campaign that the health system can handle and distinguish flu from bioterrorism.

DR. MARLOWE: We must remember that the media is more than prime time news or CNN. You have got to be prepared to reach the audiences that watch MTV and VH1, or watch WWF, etc. Otherwise you are reaching a small segment of the population.

DR. HOLLOWAY: I want to go back to a practical experience. In the early days of the AIDS epidemic when Laurie Garrett was really very active, one of the things that we ended up disagreeing with Laurie about was that she talked about trying to keep the tabloids out of distributing the news with regard to the AIDS business, and stay with responsible press. But it turned out that if you interviewed our patients, they did not read the responsible press. And so the people you needed to talk to were the tabloids. So David's comment is important.

DR. VEENHUIS: I think the tabloids are already onboard.

DR. HOLLOWAY: That is true in this. The tabloids is also are under attack. It can be awfully hard, sometimes, when you are listening to your own norepinephrine and epinephrine to hear somebody else's.

DR. URSANO: A wonderful point. I have not seen the leadership of the mental health organizations in the tabloids. Not at my Safeway check out counter. It should be.

DR. MARLOWE: Wait a couple of weeks, the Weekly World News will say that Osama bin Laden is an alien and under their control.

DR. URSANO: As long as there is the follow-on comment, "Tim Tinker Discusses Bioterrorism."

DR. SCHREIBER: Just to back up to the population level for a second. We had a discussion yesterday about the lack of satisfaction with the term "worried well.

DR. URSANO: We will get to that. On the question of media I think we have captured a very important issue. Are we saying there should be a conference held? Should there be a meeting of media and who? What is the proposal that you want Brian to work on? There are many such meetings happening throughout the nation. Where might Brian be able to bring his office or HHS to bear on this topic?

DR. NORWOOD: There have been several conferences with the media on this issue. I was at one last year at Cantigny. I was prepared not to like the media very much. However, I was impressed. There were a lot of people who really did want to do the right thing. They have pressures of their own, as I think Harry alluded to. Getting people who have a consistent and accurate message to them is important. I am not sure if a conference at this point will work. I think it is misleading to think they are not interested.

DR. HOLLOWAY: One of the things I have learned from being in combat areas is the importance of having the skills to retreat. In this case that is what I would recommend – a retreat. Public conferences under these conditions may be not what you want to have. I mean here a retreat in which people can talk to each other off the record. Even in that circumstance, there is the problem of what is on- and what is off-record, but it allows them to talk about their anxieties and what they are afraid of – not in a public setting where it may influence their future employment and where they might be quite unwilling to share.

DR. MARLOWE: Another issue may be the need for a retreat for a set of educational experiences for members of the media, perhaps organized by the CDC or the Red Cross. We need to understand what we are dealing with, what we know, what we do not know, what the threats are, and what they are not. Those of us who have watched the media with the military have been deeply impressed, both in the Gulf and other places, by the unbelievable ignorance of the young reporters.

DR. SCHREIBER: The idea of a spokesman who speaks for the Fed. Should it be the Surgeon General?

DR. HOGAN: The upcoming flu season is an opportunity, in a way. I think we were struck yesterday with the notion of it is a war so "What is your role?" It's a war, "How can you help?" This is a great opportunity to take advantage of that.

DR. CLIZBE: We do not have to resolve this today. But the issue of a conference is very important to us. You may be right, Harry, it is the wrong way to go. But we are prepared to sponsor one, if it makes sense. This group can be helpful in saying either do not do it, or here is the way in which it could be helpful. Whether we can resolve this in this setting, I do not know. But we are talking about December or so for holding such a meeting, if it makes sense to do so.

DR. URSANO: Perhaps content assistance might be another way we could help.

DR. CLIZBE: The advantage to me of the conference– going beyond the conference itself – is I think it compels us to try and figure out what it is we want to articulate. I mean, we were struggling with words yesterday such as is this recovery. Last night I thought of "renewal", or some other way of framing the message. And if we talk about having a conference, it is really an excuse to say, "What is the message? What is it we are trying to deliver", whether we have a conference or not.

DR. URSANO: We should also remember that there are other resources than us. We are recommending to Brian; there are people who spend their lives thinking of advertising slogans. What you do is you meet with them, you pay them, and they come up with things that you have never thought about because their brain is working that way. So, we are not the only people that have to dream these up.

Let's go on to public health infrastructure. This should be listed as No. 1. It is the first mental health intervention. We had quite a discussion on mistaken reliance on the expectation of there being volunteers versus paid health care. That is an important question, an economic question, which must be, addressed somewhere. I believe Joe, in fact, was also commenting on that. John was also referring to this in terms of mental health issue around the question of who is actually going to deliver care, and how is it going to happen. I do not believe we reached an answer to this.

The question, which I attribute to Mike, but was discussed in many issues, of mental health surge capacity is an important one. Roger and John also spoke to this. What do we have in treatment capacity? There are abilities to make estimates about what will be the

treatment needs. We have at least one paradigm to draw information from, Oklahoma City. We of course do not want to rely too heavily on only one data point, things are different, but there can be estimates based on this type of terrorist event. What is the mental health population in the three different groups, and what are the resources needed for each? That is exactly the kind of thinking that can go on in Brian's office.

Use of civic and community groups and natural groups in this recovery effort is clearly an important issue.

Now, back to media. Tim brought up the dissemination of information. Tim, you are going to have to give me the words again -- what is the message, targeted to whom, and what is it we want them to do.

DR. TINKER: It is just the journalistic formula that everybody is very familiar with, being able to answer the basic questions of who, what, why, when, where and how. And actually that is the recommendation I was going to provide at the end of the meeting, framing that in terms of who, what, why, where, when and how.

DR. SCHOCH-SPANA: What are the powers-that-be that we are trying to alter. We need to have Tom Ridge understand. I am trying to find out who we need to leverage? What institution or what person do we have to leverage on these issues of good public communication. It will be important, for instance, to bring all the leaders of the media together with CDC, HHS, etc. At the same time, there are other parts of the Federal Government that need to recognize the critical importance of good public communication because we have seen a poor track record to date. Although that is changing with Tom Ridge's arrival, and I think it is because he is a Governor, he understands these things. But there is much to do to shift the point of view of other leaders of various Federal institutions about the need for this. Maybe Tom Ridge is the one to do it.

DR. HOGAN: There are two obvious thoughts that follow on what you were saying. One is to have Ridge bring a certain General in, and the second is that the incoming head of SAMHSA, Charlie Curie, worked for Tom Ridge. So there is a trust relationship there. Charlie will be very helpful to him.

MR. MARSHALL: I was going to say that we need to be thinking of this more as a military integration, and the term "Ministry of Propaganda" comes to mind.

DR. SHAW: I think we really want to know what they want to know. What do the people really want to know? I think the issues of safety are primary: what happened, what's going to happen, what can they really do. How can they be empowered in such a way to contribute that they could overcome their sense of helplessness.

DR. URSANO: That came up around the discussion of focus groups, that Monica and Carol both mentioned.

DR. GLOVER: We had Brian come to our State Mental Health Directors meeting to talk about this three years ago. Besides personal denial in people addressing this issue, I

see system denial, and only after September 11th were people saying, "It can happen." I still think a lot of people are saying, "It can happen, but it's not going to happen in my town." That is denial. I don't know if it is unique to bioterrorism, but the difference in bioterrorism versus a flood, people believe a flood can happen anywhere, or a tornado. So there is something about the denial factor that we have not captured yet, in my mind.

DR. URSANO: We need another word than "denial." Denial is an individual psychology word rather than a population word. There's got to be a better word. I do get the concept.

DR. SHAW: How about "minimization"?

DR. URSANO: If we use denial at a population level, people will immediately say "out of here." Minimization, was that the word Jon?

DR. MARLOWE: An implicit problem that somebody has to address is who is going to do what? How do you get a consensus in a Congress where you have a very powerful anti-Federal force that wants little or nothing to be done at the Federal level, and prefer that it be done at local or state levels or by private enterprise? There has to be attention to this issue. This comes to the fore in aircraft security. What is the proper mix of Federal, state, local and private enterprise in terms of organization to contend with bioterrorism and bioterrorist events?

DR. HOLLOWAY: I said that Bin Laden and some political leaders in the United States share the goal of destroying the national will are a group of politicians who want to confederate the United States by reducing national policy because they believe economically that will create a freer market. Those two tendencies are colliding today in the political world.

DR. URSANO: I will remind you all that Harry and David are two of my most senior mentors. Harry is one of the people who reminded me periodically through my somewhat more junior career, that one should never get confused and believe that flies are more attracted to vinegar than to honey.

DR. HOGAN: What we have to work with today is a political structure that is more federalism-oriented. We can rail about it or we can work with it. So we should work with it. Governors are in. It's in the states where public health infrastructure has to be built, so we should put those agendas together.

DR. URSANO: There may also at this time be unique entrées to both governors and to private enterprise that has not been available at other times. Again, there is a cost for that in that there may be less entrée to public health issues.

DR. SCHOCH-SPANA: In terms of efficiencies, the Office of the U.S. Conference of Mayors and O'Malley up in Baltimore has been leading the bioterrorism response charge through that institution as well.

DR. URSANO: We have had contact with a number of those organizations.

DR. OLDHAM: Just a couple of other possible words to think about in connection with "denial." One might be "rejection of reality", which might be a little easier to sell. Another one is probably not going to be any better, but it is the same concept. We use it often in talking about personality disorders, an area I'm interested in, which is "externalization." Externalization means it is out there, it is somewhere else, it is real but it is not in my yard.

DR. WALDRUP: I would plead with this group, to not forget that animal diseases can have a huge impact on the well being of this country. In the particular case, when we are talking about primary population at risk, we are not talking about disease. But it is a mental health issue. We are also looking at urban versus rural. I do not think anyone here would argue that mental health facilities and support in rural areas is a big problem. So, when we are talking about issues at the state level for veterinary and animal disease issues, these become even more prominent than they might with a human health issue. So, I plead with you, to not forget this topic.

DR. ENGEL: I would like to play the devil's advocate on this term "denial." I actually think it is fairly realistic thinking unless you live in New York and Washington, where I would say there really is no denial at this point. I do not think there is going to be any in the near future. But if I live in Olympia, Washington, the odds are small that my town is going to be involved in a biological event. I think that that is part of the challenge here. Rather than denial, I would say awareness and sensitization is what we are after and the reality we have to maintain. It is like nuclear winter. It is an event that is not likely to happen, but we have to have a certain level of awareness and readiness for it. That is the challenge in the military. We must maintain a high level of preparedness for unlikely events. That is our constant job. That this is the challenge. For the average citizen, their estimate of how likely a bioterrorist event may be is probably correct.

DR. URSANO: Awareness and readiness.

DR. MARLOWE: I think we do not know. My own suspicion is that there is a difference between all urban centers that see themselves as potential targets, and other parts of the country. My son lives in L.A., my daughter in Chicago. They both tell me that the levels of anxiety among their co-workers and their friends are extremely high. Everything is different. I would suspect you could say the same thing about San Diego, about Miami, and various other places. I think we do not know and to make the assumption that only New York and Washington, because they have been victimized, have altered their view of the security of the universe may be a gross error. One of the things we may have to do before we use terms like "denial" or "avoidance" or anything else is really look at the demographic differences in terms of places where there are potential targets, and places where they do not perceive themselves as being potential targets.

DR. URSANO: Let me underline that is an empirical question which David has raised, to try and understand why some people are more aware and experience readiness as important, and why others do not.

DR. ENGEL: I was taking an extreme position.

DR. SCHOCH-SPANA: I see it more fundamentally as an educational issue around the point you are making e.g. why a community makes a risk determination and a probability determination. If you are dealing with a contagious illness, and the population understands that, then Olympia and Manhattan are not that big a difference. Smallpox can get everywhere versus the anthrax situation which is contained by virtue of not being contagious.

DR. SHAW: I wanted to comment on the issue of population and the need to identify high risk groups with specific interventions for these high risk groups, particularly the geriatric population, children and families. One thing that we know is that blood runs thicker than water in these kinds of events. People are going to want to protect their own families.

I want to reiterate the need for school intervention as a strategy for ultimately dealing with children and families, using the infrastructure available in the community.

DR. URSANO: The next point we addressed was very important: the purpose of terrorism is terror, every citizen is a soldier. Again, what is the phrase we are looking for? We do not have to invent it, but we had a lot of discussion about how do we mobilize positive action rather than just rest, relaxation and recovery. "Loose lips sink ships", "Rosie the Riveter." I personally like Smokey the Bear, and I hope he returns. There has got to be a way to use him.

The issue of promoting resiliency, recovery, and this word "normalcy" were a big debate for us. What is it we want here? What are we trying to promote that is not merely "clearly things aren't normal." Something about "return to work" and what your tasks are. Three comments at most, if someone has something to say, then we'll move on because I am not sure we are going to solve this. I think we have all agreed that it is a dilemma and that we want to promote positive action, not merely rest and recovery. In fact, I think we are very skilled as mental health and behavioral people, in thinking of how to promote rest and recovery, and perhaps we are less skilled in how to promote action, which is often true in our mental health interventions.

DR. MARLOWE: This is terribly important and has not been well communicated. The purpose of terrorism is more than terror – it is to paralyze and break down the institutions that maintain the structure and operations of the society. It is exactly the same thing we do with bombs when we destroy the structure of an enemy army, as we did in the Gulf. The aim is to stop the mail, stop food distribution, and stop the things that keep the society working. I think it is obvious that the recent attempt here was to break the financial system of the entire West, if possible. I think we must make these things clear. Then it becomes even clearer as to why people have to go back to work, why they have to continue doing the things that they are doing.

DR. URSANO: That is an excellent point. This needs to be a target itself. It is not just targeting individual mental health issues, or even population-based mental health and behavioral issues. There are issues of continuity of society that need to be targeted.

DR. HOLLOWAY: Terrorists are going to be going after those targets that are weakest and easiest because it is a weak terrorist. So, we should be thinking about those issues. Now, since the big guns have been fired, it may indeed be the Olympia, Washington's that are the targets. This is the reason why we may want to think about the return to a more national organization rather than a more fragmented organization.

MS. CAREY: One of the issues in mobilizing positive action appears in several models used by hotlines related to strength models and focusing on resiliency. There are very excellent ways that our hotline staffs use to address this. We can use those mechanisms and repackage them in certain forms for public education. Also, you had indicated that the anthrax scares are at the same time as the flu season. I would like to promote something in order that we have a jump on this with public education. We need to help all of our moms and school staff because they are where the front line is. In advance of the chickenpox season in the spring, we need to have everybody very, very well educated on what the difference is with smallpox so they do not freak out.

DR. TINKER: It is actually a question for the group. What is the opposite of terror? I keep coming back to the image of Smokey the Bear. What are the counter messages for Smokey the Bear? What is the opposite of terror?

MS. CAREY: Calm.

DR. TINKER: What else? Those are the things we need to think about in terms of messaging.

DR. VEENHUIS: Smokey's message was awareness, basically, being aware that only you can prevent forest fires, awareness of what role one could play in preventing fires.

DR. HOGAN: It is a very important comment in this context because now is the time to be building resiliency with messages of hope and what one can do. This was on the air and the Websites within 48 hours after September 11th, such as what you say to kids such as remind them that they are safe. It is a great time, in effect, for an inoculation of hope.

DR. URSANO: Tim clearly is indicating a methodology, to think of the opposite of the message.

MR. MARSHALL: You need to tie patriotism into that as well.

DR. URSANO: Very good. Again, we come back to Chuck's word -- awareness. I want us to hold onto that word. Smokey was a nice example of that.

Scapegoating and stigma, a huge issue, whether at the population level, the vulnerable population level, and the mental health issues involved. This is a tremendous

issue, one for which clearly behavioral studies should have something to contribute. I am sorry to say there is not much at present, but there needs to be more.

DR. SHAW: There needs to be a readiness to confront conspiratorial theories. In Surat, India one of the conspiratorial theories was that the United States and Pakistan were actually testing biological agents on the Indian population. There are always going to be conspiratorial theories. How do we have an information base to really combat that?

DR. URSANO: Some of you may have heard this morning about India's offering a million dollars worth of Cipro. I was reminded of Monica's comments about the fears of Bayer aspirin being contaminated during the influenza epidemic. It would not take long for the Cipro from India to be seen as contaminated in some way. I just could not imagine that would not be a hot issue.

DR. MARLOWE: One of the issues that has not been spoken of is how do we deal with our homegrown bigots and crazies, the Christian Identity Movement, the Aryan Nation, some of their equivalents on the extreme left. They will be attempting to exploit this as much as they can for their own agendas.

DR. URSANO: And, of course, the right ranges from the far right to the slightly right, Harry gave some examples as to how these have already appeared. We have a big issue here of agricultural and veterinary disease. I personally want to thank Ken tremendously for being here and presenting this in such an articulate manner. The question of veterinary and agricultural issues around bioterrorism we have had little thought yet at the Brian level. It hit home around foot-and-mouth disease. So, we need a lot of work in this area. It raises different issues for us. Economically this is astronomical.

DR. HOLLOWAY: As a farmer – my farm is in Canadian County, Oklahoma – we have thought about it. And the real problem, when I start putting on my Canadian County hat, is that we are a real minority – real minority. We are a minority that produces a lot of money for the country - the largest export. These two things make us targets and, at the same time, make us weak, and that makes us more a target. So, I hope people will think very seriously about this.

DR. MARLOWE: I would like to ask Ken how much damage could 20 dedicated people capable of spreading foot-and-mouth do to the United States?

DR. WALDRUP: David this time last year when we ran the exercise, the Tripartite Exercise in Texas, using FEMA's calculations and their formulas, we estimated the economic damage for one county in Texas was $50 million. In that exercise, we concentrated on this one county, Hidalgo County, which is right on the border of Mexico We used actual records from a livestock market. But we only stayed in that one county for the exercise, just to work on logistics. Cattle from that one market went to 26 counties in Texas and five different states in 24 hours. That is from one livestock market. It went to 26 other counties in Texas and five other states within 24 hours.

DR. WALDRUP: That is correct. Bob thank you for including me in this conference because from the veterinary side, mental health is not something that we deal with in our responders or the farmers and ranchers involved. So, I view this as a very important link so that if there was a situation like this, we would be better able to respond. We would be better able to tend to those folks who are impacted. I view this as a critical link -- the mental health aspect -- the human health aspects of this, and the veterinary aspect of dealing with the animals.

MS. CAREY: One of my concerns with the veterinary aspect is again, public education of moms and dads who take their kids to places like petting zoos, and see the llamas. Without education they do not know that they cannot catch it. They do not know that they cannot bring it home to their dogs. Again, we have to shore-up our own infrastructure within our organizations and provide accurate information so it does not cause another ripple effect.

DR. HOLLOWAY: At the last national meeting of the NDMS, the folks in North Carolina presented data from the floods concerning pets, and people staying in houses, absolutely refusing to leave their houses even though they are long since flooded because there was no provision to take care of their pets.

DR. VEENHUIS: Carcass disposal was also a tremendous problem.

DR. URSANO: I have listed up here a few of the items I jotted down when Ken was talking. I was very struck by the role of the outsider, meaning Americans going to the U.K. There are particular issues about this important role and who would be the outsider in Texas that might be able to bear some of the brunt. We need to think that through and to what advantage or disadvantage having an outsider might bring. Also we talked about that in the UK, there was sensitivity to the loss shown by the interveners and the resulting problems with the role of the military when they were not. In addition, the question of how one learns the language of a community. The economic stress is huge and then there are the issues of secondary stressors. Economic loss is present for the individual, the community and the nation.

I was struck by the question of preparation. Ken raised the idea of preparation -- those who had frozen semen and would be able to restock their stock had a different experience. Is there a similar way of thinking through the issues for agricultural as well as for other areas? This can be an important mental health intervention -- to encourage preparation.

The question of the stress on the responders was also discussed. They are very different. We have not thought about these issues. The questions of carcass disposal and depopulation are substantial.

It would be hard for our present Administration not to at least give lip service to the cattle industry. There may be an opportunity to raise this issue further than it has been before considering what are the normal political consequences in this setting, and which outreach groups might be able to be reached.

DR. MARLOWE: We should not forget Harvey Brenner's work. Brenner's studies of severe economic downturns and economic disasters show these generate much greater mental health problems and much larger populations requiring psychiatric treatment and intervention. I am sure Monica knows that it was all done at Hopkins. Brenner published a couple of books on this. It is important to remember if these things happen, there will be severe mental health consequences for which we must be prepared and may not be.

DR. VEENHUIS: Yesterday we were dealing with this. There is a very, very great need for a prospective epidemiologic study of the incidence of suicide, the incidence of new disorders, outbreak of new DSM-IV disorders, and also the actual incidence of posttraumatic stress. This must be done.

DR. URSANO: One example is the Midwest flood. It touches a similar population, and potentially might raise some of the same issues in its chronic and enduring nature and the economic losses that accompany an agricultural or veterinary disease outbreak.

MS. CAREY: As the need for mental health support is identified through severe economic losses, we have to go back to the main problem of the absence of a solid infrastructure. Right now, I do not know about other states, but based on just the economic effect of this recent event in Maryland, we were given major cuts on Thursday evening. These will have extraordinarily Draconian effects on our entire system.

DR. OLDHAM: We are dealing with all the disasters we were talking about in New York, and last week. The week before we had a briefing in Albany with the Governor's budget people forecasting the future two fiscal years in which there is a shortfall in the state of between $3- and $9 billion. The Governor was talking about hiring restrictions and trying not to have layoffs, which means they probably will happen. Those will go into the whole state-supported structure, which includes, of course, funding for mental health.

DR. URSANO: The economic issues warrant much more thought in a meeting of their own. There is also a tremendous amount of basic science to do on the issues of prion disease that sit on our window.

We all agree that we need new models. The models based on plane crashes have limited applicability when we look at one of our three populations, meaning those that are exposed and develop traditional mental illness or those who are vulnerable and subsequently reactivate mental illness and the wider population of the country.

Clinical care has been degraded due to the focus on episodic care versus assuring a sufficient infrastructure. In addition, there is no surge capacity available within mental health care itself.

The use and development of Employee Assistance Programs as a resource is a substantial area of need. We talked about potential entrée into businesses. Bioterrorism raises a whole new issue about how one intervenes in the workforce itself. What are the mechanisms for doing that? This is really an opportunity for Brian's office to think about

how we can reach this population, how do we train to do so. What should the interventions for bioterrorism in companies such as ABC to NBC be? We have multiple examples at the moment. The concept that Mike brought up about concierge services is a good one. In the mental health area we are talking about instrumental support. We often only think of emotional support and tend to forget instrumental support such as helping someone find a child care provider, or helping someone figure out how to get to work when the subway is closed down. These are critical issues for employee assistance that can limit absenteeism and increase the mental health of the workforce. This is a huge issue and an opportunity for states and local response. You all were running it, but you are the beneficiary of it.

There is a conference coming up that was advertised on TV associated with the Red Cross – again, an opportunity given the present political setting. It is called Leadership in Times of Tumult. They are advertising the CEO of AOL. They had four or five CEO's in addition whom you would all recognize. The bottom line was to benefit the Red Cross.

We also discussed issues of reaching business leadership. There may be unique opportunities to systematically talk about educating.

DR. HOLLOWAY: Yes, Virginia, bankruptcy has consequences. That needs to be up front. We are going to get double-whammies, cuts in states' budgets, and then as companies go out of business, their capacity to provide these supports will also go away.

DR. SHAW: I wanted to bring up the dialectic between individual psychology and group psychology. The predominant antidote against terror is group cohesiveness and group solidarity. Yet the whole target of terror is to fragment groups. People who become horrified often become predominantly interested in self, concerned about a foreshortened future, and there is a fragmentation of the group covenant. Therefore a great deal, I think, of the strategy should be how do you promote group cohesiveness, group purpose, in order that people maintain a sense of solidarity?

DR. URSANO: And the workforce is one of those opportunities. Since you are making the comment, Jon, I also want to underline your comment earlier about the school systems. No one has mentioned the PTA. When I mention schools my wife always says, "Remember, the teachers do not run the place, the PTA's do." One needs to reach the PTA systems in this setting.

DR. MARLOWE: This leads to the question of, what are the institutions that we might think of and that people might think for creation in lay civil society. Once upon a time, in World War II and sometime thereafter, there were things called the civil defense system. There were the roles played by groups many will not remember. Nobody remembers the American Women's Voluntary Services, et cetera. There is a large literature on the loss of these institutions due to the changes in American democracy and its movements. Has the time come where as part of social reorganization given the changes we are contending with, for someone to take the lead in creating new community-wide self-protection, self-help community support institutions?

DR. URSANO: Good comment and recorded. Moving forward, we had comments about the need to recognize competing messages. This is an important reminder that we are not the only people sending out messages. We should not act like we are. We need to incorporate those messages or people, or educate the people, or at least recognize what we are competing with other messages.

Command and control structures for managing mental health issues of bioterrorism are different, as Brian said. Very important. There are also private/public collaborations such as in business, which as a minimum are more prominent in the consequence management of bioterrorism. The buildings may still be there. Therefore, some of the businesses will still exist. How to get inside the buildings to the people is an important mental health task. This is in contrast to an earthquake in which the buildings have come down.

What are the skills needed for mental health bioterrorism interventions was raised. We really have not articulated the different skills. What are the skills we want people who are mental health, and behavioral specialists -- and I link those together all the time -- to have and how do we educate people for these. These are substantial educational institutions. The issues cross all specialties, from the question of hospital administration to mental health intervention to veterinary issues. How do we incorporate these into our educational activities?

DR. HOGAN: The whole area of evidence-based practice is very hot right now. I assume it would be possible to pull together the suggested evidence-base across the continuum from early crisis counseling intervention through dealing with stress-related disorders. It would be very easy to do that. The markets are out there now to communicate this information.

DR. URSANO: That is a good phrase that we need to introduce evidenced based. John Oldham's is one of those observations that is the result of a tremendous background and understanding of what helps people help other people. That is part of the answer to this question. What are the skills we want to be training in? What does help people help other people? We of course add groups here: what helps other people help groups.

The question is the need for research and services. A group that is often forgotten is the bereaved parents of adult children. The spouses and significant others frequently are offered a great deal of contact but the parents of adult children frequently are forgotten.

And now No. 21, which is a piece that Chuck Engel often speaks of and was in his work on the Pentagon, that is mental health surveillance. We need mechanisms for this right now in New York. We need them in the Pentagon. And we need them set up now so Brian's office has real-time data about the current mental health needs. Not that they are dreamed up, but rather we can sample, just as we would sample a swimming pool for how much chlorine to add. We can sample and find out what the mental health needs are. This is a huge topic in and of itself. We need to progress to real time surveillance rather than merely dealing with data from the last disaster. We can have real-time information.

DR. VEENHUIS: One proxy we have is the increased use of benzodiazepines and the SSRI's.

DR. HOGAN: A number of states and localities do periodic youth risk behavior surveys for high schools especially. It would be easy to include a couple of items in these. You would soon have a tremendous database.

DR. URSANO: I think the Pew survey, which hit a lot of press, did a wonderful service for the nation not only in terms of documenting the high rate of initial symptoms, meaning everybody had them, but also their rapid fall. That was done in real-time. I do not think it was taken advantage enough by people who could have articulated this information. It certainly showed up in all the press addressing consequences.

DR. SCHREIBER: This ties in with the various systems of care. The Consumer Product Safety Commission has a database called the National Electronic Injury Surveillance System. It has a stratified sample of all emergency rooms in the United States, and measures injuries. It could be fine-tuned to be a surveillance tool for illness.

DR. OLDHAM: This conference has been tremendously valuable. This kind of discussion is very helpful. We need to get this information out. I wanted to make one final comment or perhaps a set of comments and to not repeat or reiterate many of the things that have been said, which I think have been really very thought provoking and useful. I was thinking about one point I wanted to make as a closing point. We have, by design and appropriately so, focused this conference on bioterrorism, but bioterrorism is not happening in a vacuum or alone. Therefore this goes back, in a way, to my description of the New York situation yesterday. If you think about the New York situation it was a surprise method by which the terrorist act occurred. But this was not the first terrorist act. So, if we turn the clock back, we had bombings of the World Trade Center before as well as of our Embassies abroad. Therefore, it seems to me there is every likelihood, at least for the foreseeable future, that there will be additional new methods of terrorism that will come along in addition to bioterrorism. There may be further examples of what we have seen, but there may be things we have completely not thought of like what happened with the planes.

I want to urge us to think integratively. To think about how we need to respond to bioterrorism and encourage the appropriate set of responses while at the same time keeping bioterrorism in context, meaning that there are many additional things going on in a bioterroist event, some that have gone on, and that could well go on in the future. Now, the reason I say this is because we have a fair amount of knowledge about who are our especially vulnerable populations. That vulnerability is not just for an intense or extreme reaction to a future new terrorist attack. It is also vulnerability to bioterrorism because that will increase the stress even more. For example, among those who are more vulnerable we know are those who have been previously traumatized. In many parts of this country – I can tell you in New York – we have many families who were Holocaust survivors. Many of them are intensely reacting in this environment. There are many others who have been victimized. They are victims of crime. They are victims of domestic violence. There are large populations of people who are more vulnerable to all of the events that we are talking

about. We also know that previously diagnosed or treated mental health populations are among those who are more vulnerable. As we see this array of events, each one of which is totally unwelcome and alarming, we need to keep our eye on sophisticated responses both in terms of infectious disease responses, bioterrorism responses. But also we have to do the best job we can for appropriate case funding and provision of treatment and identification of those most in need, those already on the edge, while at the same time doing all that we can do as we have talked about here, to improve the public morale.

DR. WALDRUP: I see my comments as an advocacy for small town, rural America. We have talked about bioterrorism here. But a national animal disease event might not necessarily be bioterrorism. But the same needs would still be there. Even such natural things as droughts, have the same mental health needs as far as recovery for farmers/ranchers out in rural America. So, even though this meeting has emphasized bioterrorism, such events on the livestock population of the U.S. might not necessarily be terrorism, but the same needs would still exist.

MR. ARMISTEAD: I appreciate the opportunity to attend this conference. It was very useful. One of the things that hit me is that the education of leaders is critical. This is the first time I have been involved with a terrorism event, thankfully. But I have been involved with natural disasters, and I have been to other events along these lines. There needs to be some change in how Government reacts to this kind of event at all levels. The education of leaders is critical. When you have worked in the mental health system, there is always a fiscal crisis. It is hard for any kind of disaster to get a commissioner or a governor's attention because there are so many other things going on. What has happened many times in the past with natural disasters is that it is a priority but it is a priority for a very short time. Not because somebody is not trying to do good or because they do not want to do it, but because it just gets lost in everything else. This needs desperately not to happen.

I realize I am probably preaching to the choir. It is critical for the leaders to understand because of the even more important role they play. It is not just decision making. It is critical for them to understand the nuances of this so that they do not make mistakes. If they do, they can aid the terrorists. It is important for them to understand how critical that is.

In addition, the issue mentioned yesterday, that there must be a change. Government has a tendency to want to address one incident but not to bring about long-term change. I do not want to be here five years from now not knowing more than we know now. Not being better prepared, having more resources, and being confronted with terrorism-inspired foot-and-mouth or smallpox.

MR. MARSHALL: I really want to stress the dubious nature of any kind of programs that we develop here. Considering infectious disease surveillance, you may get your funding through bioterrorism, but we really need to be able to use all of these programs and all of these ideas for everyday uses. All of our infectious disease surveillance looks not only at bioterrorism agents, but everyday agents that we look at throughout the year.

Also, before a couple of weeks ago, all anthrax-threat letters in this country had come from domestic sources and not international sources. Someone mentioned Olympia, Washington. It was in Dalles, Oregon where the Rajneesh Cult poisoned the salad bars with salmonella. This is very much a local issue. We can identify risk, but things are going to have to be reduced to a local issue as well.

Finally, we are really going to need to educate and start our own propaganda war. Educating the public and the leaders is critical, as we have said. But one of the subpopulations that cannot be left out are Arab Americans. That really has not been discussed today. The vilification is already starting. I watched Jay Leno the other night. All of the Arab jokes really cause me a lot of concern.

DR. VEENHUIS: There are two things in my adult professional life that I never expected to be issues again. First of all, I never expected the Soviet Union to collapse in Eastern Europe during my lifetime. Secondly, I never expected that infectious disease would ever be an issue again. Little did I ever anticipate infectious diseases would be used as a weapon against this country. Since September 11th, I have been going back and forth -- monitoring my own internal state, and moving from high anxiety to a sense of empowerment. This conference has been very helpful in helping me to integrate. And if I, as a professional, have this kind of back-and-forth movement, I can only begin to appreciate what the average citizen is experiencing.

We have laid the groundwork for a very important consensus document that will cover the public health, mental health issues having to do with primary prevention, secondary prevention, and tertiary prevention. Thank you again for organizing the conference and inviting me.

DR. ENGEL: There is a part of this experience that has been frustrating to me, and I have been trying to figure out exactly why. For the past five years I have been running a center that used to be called the Gulf War Health Center and is now called the Deployment Health Clinical Center. We have been seeing Gulf War veterans with Gulf War Syndrome, and more recently seeing people post-anthrax vaccination with various illnesses that they attribute to the vaccination. Over the course of doing that, I have had many opportunities to interface with the media, ranging from Science Magazine, the Discovery Channel, the Washington Post, and book writers. I have also had the opportunity to do a great deal of research. We recently received funding from CDC to study communication strategies with people who have been exposed environmentally. We have to think about this scientifically. We also have to think about it politically. The two do not always mesh very well.

On the scientific side, I would like to go back to something Harry Holloway said earlier. I would paraphrase his comments as "good intentions are not enough." We really have to evaluate empirically what we are doing for folks because we might think we are doing the very best thing. Critical incident stress debriefing is an example of a strategy that we have been questioning of late. I don't think the jury is in, but I think it is an example of how things that we might think are useful, maybe are not. So, good intentions are not enough. And then on the political side, I think good intentions are everything. That sort of highlights a little bit of the contradiction in terms that are involved here.

I would like to go back to the scientific part. These types of events happen out of the blue. They are largely unexpected even when we are expecting it. The issue of developing databases and anticipating how we can develop databases and developing templates for collecting ad hoc, if you will, data related to these events is very important. These are never going to be perfect, which is one of the things that we learned. They are ultimately surveillance strategies as opposed to epidemiologic studies, but they are nevertheless important for trying to come to some sense of whether what we do really works.

On the good intentions part, it has been a little bit frustrating for me to hear the terms in which we have talked about the media. I would say that just about everybody that I have interfaced with in the media really means well and wants to do well. They do not want to make a buck anymore than anybody else around the room wants to, which is probably a lot. Most of us here would like to earn a decent living, and probably do. Our attitudes about the media may at times also reflect our attitude about the general public. I come from the position that the general public is right, and if experts disagree then the experts are wrong. I think that we have to stop denigrating our audiences and denigrating the people who communicate to our audiences because, to the extent that we do that, we won't be seen as having good intentions.

DR. PFEFFERBAUM: These are overwhelming issues, but there are some very practical things that we can start doing. From my vantage point, having lived through a disaster that pales in comparison to New York City and to bioterrorism, I would like to see us review the legislative and regulatory structure for disaster response and the interpretation of the legislation and regulations. I think we need to identify common elements associated with these events, but keep in mind, as John said earlier, the contextual issues, the type of attack, the magnitude of it, the characteristics of the perpetrators and of the victims, and the social, political, economic, health and mental health infrastructure of those communities or groups that are attacked.

MR. THOMSON: While it may be implicit in the topic of this conference, it is vital that we bring out, especially to our public policymakers, that with regards to events of bioterrorism, the purpose and intent are one of the major goals of the perpetrators. The purpose and intent is terror and destabilization. In such a case, mental health issues become so important. This is a critical issue when it comes to funding issues for mental health.

One of the things that we have seen already with regards to the World Trade Center incident and now the incidence of anthrax being distributed around our country is an economic downturn. Of course, we all know that in times of economic downturn, funding for any type of public health gets very tight. For those of us in the mental health field, we know that funding for mental health gets extremely tight and often gets pushed to the side. We cannot allow this to happen. We must emphasize to our political leaders that mental health issues must come to the forefront in these situations in order to protect our way of life.

With regards to information dissemination, I was pleased to find that there is actually a Website somewhere that is disseminating information regarding health issues. I was disappointed to find that even though I am in the professional community myself, I had no idea that this Website existed. So, if we have information available, it is of course vital to let people know that that information exists, and we need to get that information out to the people that need it, including the population at large.

Also, we need to address outreach to special and fragile populations in these types of events. Obviously -- and it's been touched upon here -- folks with already existing serious mental illnesses are especially vulnerable in these types of events. We need to make sure that we address their needs and that we do not overlook them. Again, thank you for allowing me to attend.

DR. FULLERTON: I would like to make a comment about Garrett Park and Tim Tinker's handout from yesterday. I think we have talked a bit about communities, and just this morning I think it was Dave or Harry who was talking about the importance of community response. I've been thinking a lot about Garrett Park. I grew up around here, and I know Garrett Park well. It's a unique type of community. It is great what is happening there. We can learn from that. We can look and see what is it about that community, what is the mechanism there that has created a functioning community. We cannot turn all communities into Garrett Park, nor do we want to, but there's something there that has allowed for good action.

Tim, when you presented, you said, it has brought back something that they had had before, something about communicating between neighbors. That reminded me of kindling - a neurological term that means once something is started it can more easily be started again. If there is something that had been in place in a community at some point in time, it's much easier to bring that back in a time of crisis.

I want to make one other comment that has to do with slogans, children and the familiar. It is important to take messages to where a group is. Children are a good example of this -- something that children can identify with. If you think back, the things I remember from advertising when I was a kid - such as -- Bucky Beaver, some of you might remember Ipana Toothpaste. I remember the whole song. And, of course, Smokey the Bear. Kids relate to animals. This is just an example of something familiar to a child that they can relate to.

Last night we were talking that in New York when the buildings came down and some things fell from the building it looked like crosses to some of the rescue workers. We find the familiar, something recognizable. It's a little bit symbolic. We need to use our looking for the familiar when we think of how to develop our messages.

I will close with reminding us that with Smokey the Bear, the slogan was "Only you can prevent forest fires." The forest was Smokey's home. We do not live in the forest. We would go into the forest and we would be careless and light a match or someone would drop a match. That was another important aspect of the slogan -- do not destroy Smokey's home. We identified with that idea.

MS. CAREY: I would like to make a couple of comments, not to lose sight of the need to really reinforce or activate mental health's relationship with the emergency management community where it really falls short in a lot of communities. We are not at the table for discussions. We are not part of broad state disaster plans in many areas. We become a more active participant where we are able part of any incident command structures.

Also, we have talked about animals and people. I am concerned about our computers and how we may protect them. We have not discussed any of this, but there is also "viral terrorism", not necessarily bio.

DR. CLIZBE: I find myself thinking at two levels. One of them I guess I would call centralized, and that is the need for centralization of decisions about what kind of information to share. I see that as a major challenge for all of us. I feel a sense of urgency in getting that taken care of for a lot of reasons. All we have been talking about here is in part directed toward identifying what is the right information to share.

On the decentralized level, what strikes me is decentralization in the delivery system. There may be national conferences. As I have said before, I envision that as a distinct possibility in the very near future. But recognizing that there are the decentralized issues -- we need to consider mental health getting linked into state plans. We talked about local talk shows. We talked about community delivery systems like the GAP that Carol was talking about in Garrett Park.

What I have gotten out of this is the need for us to have a centralized idea of the kind of information that is appropriate to communicate. But then we must find ways ranging from, fairly centralized to very decentralized, of delivering that information. There are distinct regional and local differences in terms of what people are ready to hear, what people need to hear, what information is relevant for them to use. We need to be careful about centralizing too much of the information and also careful about decentralizing too much of it. We have to be sure that there are some common themes that we all recognize and adhere to, but then aggressively work to tailor that to the local and community level.

DR. NORWOOD: We need to be creative in terms of the technologies we use to address issues involving terrorism. We need to give more thought to using VTC's, teleconferences, and Internet chats. Perhaps also for delivery of services. Several of us in the military have patients that travel the world and we talk to them on the phone. We need to be looking at resource matches and where can we get assistance from technology. I am in favor of evidence-based medicine, but the dilemma is we are traveling in uncharted waters at the moment. For example consider John Oldham's example for the business leader, about when to have a memorial and so forth.

I hope what we can do is our 80-percent solution, our best guess. Coming together about what the messages might be. I also hope that we are learning from our current anthrax experience, what has been helpful at the Capitol, what has been helpful at NBC, what has not worked so well, and that we can share those lessons learned in the interim before we have the evidence. We also need to stay alert to a wide spectrum of

interventions. I can speak for the people at the Pentagon that attended the memorial service. That was profoundly moving and very, very helpful to them. We need mental health input at multiple levels and we can be very, very productive in helping people.

DR. HALL: We have covered broad territories intellectually, ideas, solutions, and strategies. I have been thinking about something I heard Randy Larsen say regarding the lack of money, available to address many of the ideas, including those we have generated here. In particular, the issues of beefing up the infrastructure that currently exist. I have the sense everything is pretty stretched.

We ought to make a triaged set of recommendations in this document to Brian and Bob. There are some things that can be done very low-tech, very reasonably, and that are highly achievable. We perhaps should start around the messages and communication, identifying natural networks that we can utilize, the PTA, the schools, et cetera. I would like to see priority given to some of the communication and education issues around risk, resilience, and familiar messages. This is something that we would like them to focus on initially because many of the other areas that we have identified are going to require time, money, and grants.

DR. HOGAN: There appear to be several different opportunities in this crisis. I will reflect on a couple of these. The Surgeon General's report on mental health came out not that long ago. One of the most striking elements was how little we know about mental health as opposed to mental illness. In this context, the tremendous opportunity to promote mental health – I will use the metaphor again – as kind of an inoculation against terrorism. So, it seems to me that there is an opportunity here for us to both be of service and to save the mental health field, in a way.

The second opportunity is the opportunity to bridge between clinical and public health approaches. To be very concrete about this, I am talking about the opportunity to bridge CDC and NIMH. NIMH is in some ways, irrelevant with respect to day-to-day taking care of people. That has been a frustration of mine for years. Here is an opportunity to bridge the clinical and the population-based, and also to bridge action and science. I think we should take advantage of this. But it will only be there if we start now.

The third opportunity is that in many of our organizations at the state/community level people are flat-out right now. That prevents them from being able to do both. I believe that it would be beneficial to make small investments that could build on what there is now. That is creating what is often called organizational slack. Slack not in the sense of laziness, but slack in the sense of a little bit of discretionary resource to expand capacity. This could be enormously helpful right now. A 5 million dollar grant that involved $100,000 to each state to have someone address these issues could have considerable impact. Someone to think about these issues full-time in the mental health context would enormously impact capacity by generating solutions.

DR. GLOVER: I have been thinking about the unpredictable episodic nature of what we are dealing with. Often the mental health system sets up episodic responses. We do not have an infrastructure there that is ongoing. We call it up. It is a stand-by kind of issue.

This group becomes a support group for me, you in this room. It is that we are in it together in a different way than I thought. I want to thank Brian and crew for doing that. I now have some people I will call. Harry, I will say, "What are you talking about again", you know, it is kind of fun to do that.

Towards that end -- I was thinking about Mike's comment -- we need some infrastructure to prepare, to plan and respond. I am now going to say something I normally would not -- it may mean funding that is literally set-side funding. We usually talk about giving the states block grant funding, unrestricted, to help the infrastructure. But, candidly, on this issue, I am worried about that. For the moment while this is a high priority people in the states will say, "We really need it and here it is and we will keep it going." But if you do not have that long-term commitment -- and I see this as we are in it for the long run - I am worried a little bit. We look at these in the short-term nature of the politics. So, I think we need to be assuring a long-term approach.

I will talk at our commissioner's meeting about this. Should we look for infrastructure support with a set-aside that this is what it is for. It could pick up some of the slack. It needs more than one-tenth time of an FTE in a state.

Secondly, this leads me to talk about multiple levels of leadership. State mental health directors need to use the document we produce. I hope it's done before December 2nd - both for political and technical education. Our leaders are not there. The mental health directors are not there. We need to use this to bring us up to where we should be.

I have already had technical requests from Missouri to say who out of this meeting should come and talk about these issues to them. The research needs are so massive in my mind. NIMH has been lacking in this area. They have come up with some quick-now-apply grants when they feel they have some funding to put in these areas. However, we ought to be looking at this over time as well. I'm looking forward to being at the table with all of you.

DR. SCHOCH-SPANA: I feel like I have finally found my clan on these matters. I love epidemiologists and infectious disease specialists. I have learned a great deal. I feel like I have found my people on this. It is going to require a multi-disciplinary perspective. Wonderful things have been said. I just want to emphasize a couple of points. First, as Randy puts it, this problem is not going to go away. So, as much as we are consumed by the acute needs in the wake of the World Trade Center Tower attacks and the Pentagon, and also the string of anthrax letters, that could be small potatoes compared to what we are going to see in the 5-, 10-, to 50-year range. So, yes, there are some specific needs now: what are better messages to the public, better systems for getting those messages to the public, and better education of our leaders about what they should be saying to constituents. There are those short-term needs. But we need to understand, that we have to think very strategically about long-term investment in particular institutions on this issue. I understood about the evisceration of public health. I now understand the evisceration of mental health more. And so we must rebuild things that it took decades to tear down. We need to pay attention to both temporal perspectives.

Secondly -- and I think there is consensus on this, but just to reiterate for the record -- we really do need to change the way in which we think about the public. The images of a hysterical, paniced public come so quickly. This is a deep-seated cultural myth. Quite frankly, if you look at the data -- it is clearly a myth. If you want about 100 articles pointing out the fact about the myth of panic, you can call me and I'll give you a bibliography. People do the right thing, generally. There are a few outlier negative responses, and we need to stop those. But generally people do the right thing and provide or are capable of mutual aid and resilience.

If we assume we are dealing with resourceful individuals and groups, then the types of institutions we want to build up or the messages we want to craft are going to be different. I am going to focus specifically on containing an outbreak of contagious disease. We really need to understand that the public is going to be absolutely critical in containing the effects of a contagious disease. We need to equip them, practically speaking, with how to take care of themselves and their family members and their neighbors, and to come together as a collectivity in containment of disease. If you look historically, people, are very much upset by the impact of a disease, or an outbreak on their communities, but you will find that people tend to be even more upset about things that they feel are imposed on them in a time of outbreak.

Just to reiterate, it is absolutely important to use -- I think Molly said -- natural networks, those institutions of civil society that Dave mentioned earlier e.g. the workplace, the school system, and the faith community. We can also look at information networks today, whether it is the libraries or the chatrooms. We need to hook into those institutions and learn from them and equip them with information, and help people organize themselves through them

DR. HOLLOWAY: I want to emphasize the point that we are at war. One of which we generally know about -- coming from some people who attacked us and carried out these horrible events that we have seen in New York. That may have something to do with the other biological events. But we are also fighting another war simultaneously. It is a war against infectious disease. This has not been recognized in medicine for some time -- and here I'm thinking about tuberculosis, I am not talking about the exotic stuff. All of these things have consequences for our professional organization as mental health people, and consequences for the population that we care for. I want to completely identify with the remarks about the soundness of the public and the unlikelihood of panic within that group. However, panic within small professional groups faced with large loads is an entirely different situation, particularly when they are under-funded, unplanned, and unpracticed.

In the circumstances, we are facing, there are some rather significant challenges that we need to work on and work on a great deal. As we examine promising interventions, the need to develop an epidemiology to match our interventions against the actual occurrence of phenomena is critical. This is unfunded and should be funded.

The next step is the overall development of metrics by which we can guide whether we are making a mess or not because the practice of professionals without metrics to guide their behavior is, itself, a disaster.

DR. MARLOWE: Much of what I would have said, I have already said or other people around the table have said, but there are two things I would like to talk about, one very specific, unmentioned here, the role of the clergy. The clergy are often among the initial responders and can play a powerful or negative as in the case of Jerry Falwell, or very positive role in terms of second and third order effects of what's happening. And let me point out that among the initial responders at the Pentagon were a bunch of Chaplains. One of whom happens to be an old friend of mine. The people he spent most of his time with were cops and Arlington County firemen discussing the horror of what they had seen in some of the offices.

I want to give you what I consider to be an overriding issue. Harry mentioned that we are at war. One of the things that we have not talked about is the whole question of the difference between a nation at war and a nation at peace in terms of the way we view what is going on. Being at war should mean that we change the conceptual set and the set of metaphors that we use, and operate as if we were back in the real world. People are not victims, they are casualties. The folk in New York -- and if anthrax is indeed being used by Al Qaeda -- are as much victims of acts of war and as much casualties of acts of war as anyone in London, or Plymouth, or Leningrad, or anyplace else subjected to violence in World War II.

There is a very important question involved in this concept metaphor - that is how the Government views its helping resources at every level. In particular it is helping resources in terms of the second and third order effects, which are mental health effects. To be a casualty of war is something other than being a victim of a traumatic event, in a simple sense. I would recommend very strongly that since the White House keeps saying we are at war, we insist that both Government and the American population take this seriously.

DR. SHAW: I guess old soldiers think alike. We really are involved in a process trauma, not an event trauma. We are a traumatized community. We are a nation at war. There are going to be continuing casualties at multiple levels. This is not an episodic event. We are going to be assaulted from multiple dimensions. Bioterrorism is just one aspect of that assault. In my own mind, it is not exactly clear how this is going to turn out. I think there are a number of different scenarios. We may or may not prevail. I think there are going to be enormous numbers of casualties, multi-subject wars, probably before all this is over. Everyone is going to be exposed to continuing unrelenting stressors, brutal death, separation from loved ones, dislocations, and economic disruptions. We need to really put our effort and monies in local governments. We need to come up with a template or guideline at the local level so communities can organize not in a reactive way, but in a proactive way. In that way, they can facilitate coordination among ongoing infrastructures that really exist, such as the school systems, such as academic institutions, such as the public health structure. With preparedness we can even have Mad Cow Exercises, or Tabletop exercises. In this preemptive way we are prepared to meet the future rather than react to events.

DR. SCHREIBER: I come away with many questions I do not have the answers to. What is the psychology of terror, and how do we impact that? What's the psychology of risk communication? I know many of you know much more about that. And what is the psychology of resiliency and coping? At a community level or national level, how do we fuel that?

It is time, perhaps to move beyond the crisis mode, the crisis conceptualizations. It is time to move beyond posttraumatic stress disorder as an all-inclusive explanatory mechanism. I tend to think most about children's issues. That is my area of interest. I believe we need a new system of care for children in complicated events. A system that links organizations – links the Red Cross, links schools, the public health system, the public mental health system. We need a comprehensive approach on how to mitigate over time the complexity that we are going to see.

I want to comment on the use of technology. We have been playing with a triage system on a Website. I will give you the URL later, if anybody is interested. It is just a first step to increase the sophistication in real-time in terms of surveillance and triage and linkage across systems. We need more such systems. Thank you.

DR. TINKER: Let me give you my five key messages. Those messages are around who, what, why, when, where and how. The who – I really appreciate Harry's question – who owns the issue? Well, we heard our national leaders and Chief Executive Officers, their role and ownership of the issue is evident in their leadership. But I would say, ultimately, every person has to own the problem. And the reason we are all the co-owners of this problem is that we have all been impacted by the events. So, ultimately, it is going to have to be every woman, man and child who will have to own the problem if there's going to be any long-range, system-wide and sustainable solutions in terms of national response.

Key message, the what? Risk and resilience. In the news media, we work on a three-to-one ratio. For every negative message that you communicate, you need to provide three positive messages. So, I would hope that for every risk message we provide, we will balance that out with three messages of resiliency. It comes back to the idea of who is our Smokey the Bear here, and how can we encapsulate the public sentiment, the public feelings, and the public attitudes in that imagery?

Another interesting notion is the what. We are in a period of overdrive and a period of being overwhelmed, but do we ever envision a time when we could be under whelmed by the events. As Bill was talking about. A time when we lose sight of this, that other priorities come into view. How do we keep this on people's radar? How do we keep people caring about the issue, and how do we guard against the topic falling off the screen?

Key message 3, the why. Let's engage and harness the positive energy that's already out there. A number of people have already spoken about it. There are communities popping up around the country that are taking it upon themselves. I would call them the "new class of first responders." How can we work with them effectively? While we are

thinking about communities, there are so many what I call "low-tech, high-touch" types of communications solutions. Instead of thinking about creating resources, how do we tap into resources? John and Betty were talking about the group cohesiveness message, the integration message. All are key messages.

Message No. 4, when. Let's communicate early and often; let's communicate in a targeted way. Let's send out messages that people can see themselves in. There has to be a human face on these messages. Another interesting spin-off notion here. I keep going back to Monica's presentation. One of the interesting thought processes for me was that Monica helped us fast-forward 93 years from the 1918 Pandemic. Let's ask ourselves the same questions. If we were to fast-forward 93 years from September 11th, what is it about the event that we want to say, what is it about the story that we want to tell? And I think it's incumbent upon us to actually begin thinking in that way. How do we want to tell that story?

Message No. 5, the where question. I do believe that there are a core set of messages that need to come at the national level, but ultimately we are going to have to localize that response, and even local response, to me, is too nebulous. We have to give people something tangible. To me the local response that people need to hear is block-by-block, neighborhood-by-neighborhood, town-by-town, and city-by-city. The reason I say that is right now I think people are feeling extremely detached. Things are being done at the macro-level. We need to reattach people to the local messages through this local response.

Finally number six (6), the how question. In marketing communications, we talk about the difference between push and pull strategies, and the opportunity here for us is that instead of thinking of pushing our message, pushing our product, how do we pull the information from the consumer. It is from the pulling of that information from the consumer that will help us answer the questions of what is the information they want to hear. How do they want to receive the information, when do they want to receive the information? This is the real difference between what I would call an "information transmission model" that we are already in danger of, of seeing ourselves as only the senders or the purveyors of information rather than looking at the receivers of information. So, there has to be a mechanism in place for us to not only send information, but also to receive the information. In that sense, our communications constantly has to be bi-directional and multi-directional rather than unidirectional.

DR. PEELE: At 9:15 on September 11th, a heroin addict came up to me and told me he had just heard on his radio that an airplane had hit one of the skyscrapers in New York. He thought that this meant that the country was under some sort of attack. I attempted to reassure him saying that airplanes had hit skyscrapers in New York before, but he insisted that we were all endangered. I made a note of paranoid tendencies and went to a meeting on borderline personality disorders where one of the things I was going to tell the group was about a publication that John has been a major leader of on borderline personality disorders which was going to appear three weeks later. But that meeting got interrupted when the second plane hit. I went back out and talked to the addict allowing that maybe there is more going on than I realized.

However, like Phil, John and several others here today, I am very curious about the degree to which the clinical world is going to change as a result of September 11th relative to how patients' illnesses are going to be manifested. That gets me to the one point that I have heard here that I would like to underline. While I would agree with Tim in some ways, this is everybody's responsibility, one does not construct an effective team unless one makes it very clear who is going to be responsible. Not all of us can be quarterbacks, not all of us can be right defensive ends, etc. The mental health field suffers from a terrible disorganization at the present time in which the Federal Government and its many agencies are responsible for some things. But it is not clear what. States and many agencies are responsible in some ways for in the psychiatrically ill. Again it is not clear. Counties have responsibility, but it's not very clear. Cities have responsibility, but it is not very clear. Local communities have responsibility, but it is not very clear. Lawyers and EAPs and so forth have responsibility, but it is not very clear. Professions, the clergy, Red Cross, etc., have responsibility, but it is not very clear. Patients have responsibility, families have responsibility, other citizens have responsibility, and there were people who were attempting to place responsibility on the marketplace. To really have an effective response and to utilize the wealth of information that we have heard here the last day and a half, responsibilities have got to be much clearer in this country if we are actually going to be able to move in an effective way.

Knowledge development should be a Federal responsibility. Conferences like this should be something that the Federal Government pursues and supports – assumes full ownership relative to knowledge development. And this conference is certainly an indication of what the Federal Government must continue to support.

DR. URSANO: I would like to thank all of you. The way in which we have managed to complete our remarks within 10 seconds of our time boundary illustrates another wise piece of education from my mentors. When you have excellent people and you want to get to California, you tell them "Head west and I will meet you in Salt Lake City." Give them rein to move out.

This has been a marvelous conference. We now also appoint all of you as being fully trained in the arena of mental health needs in the area of bioterrorism. You can expect that we may call on you to do some of the teaching and the talking and the spreading of this word.

Appendices: Supplemental Material

Appendix 1

Learning from the Past: The 1918 Influenza Pandemic

Monica Schoch-Spana

Learning from the Past:
The 1918 Influenza Pandemic

Monica Schoch-Spana, PhD

Unparalleled Lethality, Social Distress

- Review epidemiology, clinical aspects
- Chronicle disastrous effects in cities
- Discuss implications for today

Acknowledgments

The Baltimore Afro-American Newspaper
The Baltimore Sun
—
American Red Cross
Associated Press
National Archives & Records Administration
Oakland Public Library/Oakland History Room
—
Hanan Sabea and David Martin

Three Waves of Illness

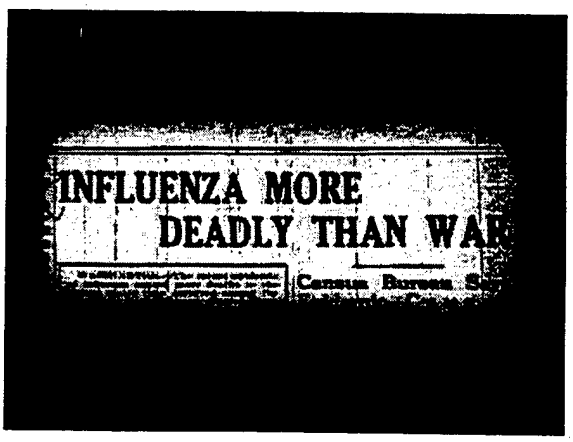
Spring, 1918 - moderate outbreak; U.S. recruits

Fall, 1918 - virulent outbreak; world ports, U.S. military and civilians

Winter/Spring 1919 - dispersed, episodic outbreaks

Morbidity and Mortality

- Conservative estimates - incomplete reporting, inaccurate diagnoses, limited census practices
- 1/4 Americans ill; 550,000 excess deaths
- 1/2 world sick (1 billion); 21-40 million deaths
- 2.5% case fatality, developed world
- Unusual 20-40 y.o. deaths



"Baltimore never passed through such experiences as now belong to her....[T]hese are indeed times of calamitous grief. Eight columns of death were in The Sun on Monday morning. And the end is not yet."

- Editorial, *The Methodist*, October 17, 1918

Swift, Debilitating, Lethal Disease

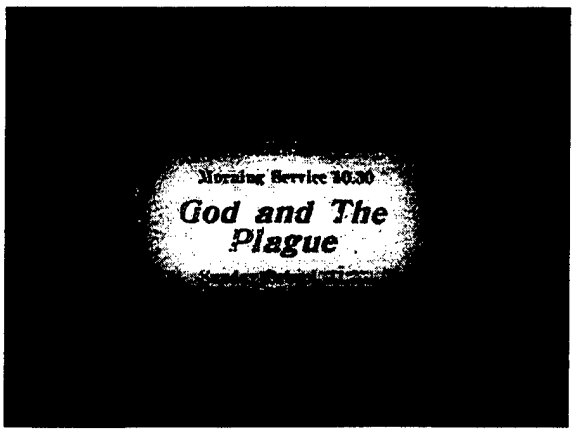
- Sudden onset - high fever, chills, severe headache and myalgias, cough, sore throat, drippy, bloody nose
- Quick, severe illness; hemorrhagic pneumonia; death hours, days
- Superinfection, bacterial pneumonia; death or long convalescence
- Mild illness, recuperation without incident

Perplexing Origins

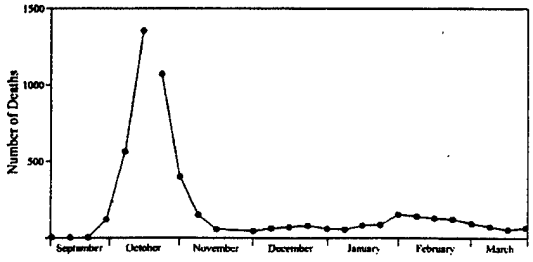
Pfeiffer's bacillus	1889-1890 pandemic cultures
Yersinia pestis	1910-1917 plague outbreaks, China
Strepto., Staphylo. species	1918 pandemic cultures
"Filtrable virus"	Hypothesized microorganism

Popular Explanations

- War's foul atmosphere
- Poverty
- Covert, German biological weapon
- Spiritual malaise

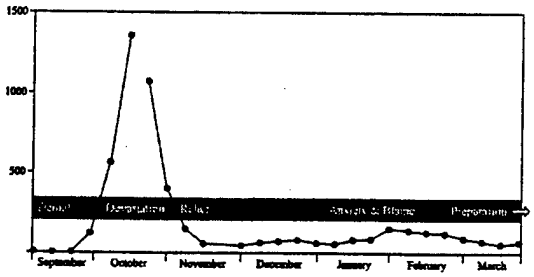


Epi Curve: I&P Deaths, Sept. 8, 1918 - Mar. 15, 1919, Baltimore, MD[1]



[1]Great Britain Ministry of Health (1920; cited in Crosby 1989[1976]).

Episodes of Social Reaction



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Acute Absenteeism, Critical Personnel

- Public safety force - ¼ sanitation, police, fire
- Communication, transportation, postal networks
- Food supply
- Industrial production, wartime effort
- Burial industry

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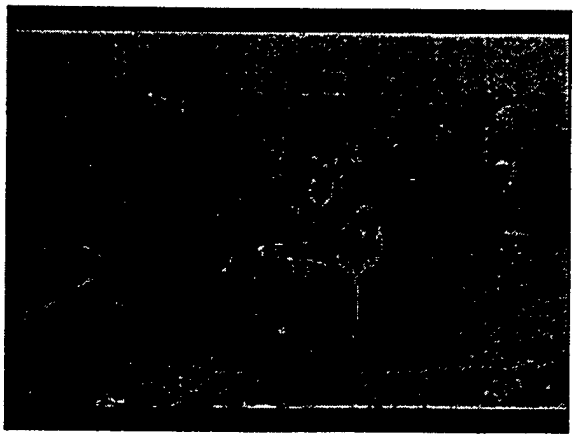

Overburdened Mortuaries, Cemeteries

- Undertakers, gravediggers overworked; coffins, graves scarce
- Bodies stranded at home; coffins accumulating at cemeteries
- Accusations of funeral price gouging, political indifference
- Emergency internment methods condemned

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Health Care System in Crisis

- Workforce limited in number, vulnerable, afraid
- Hospitals shortages - personnel, space, supplies
- Supportive care in high demand
- Volunteer networks - nursing, transport, food, childcare

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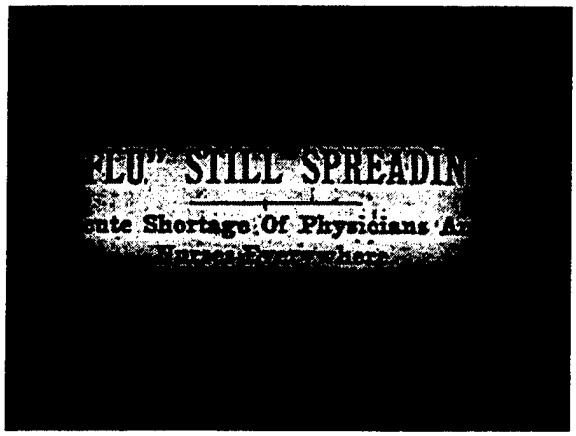
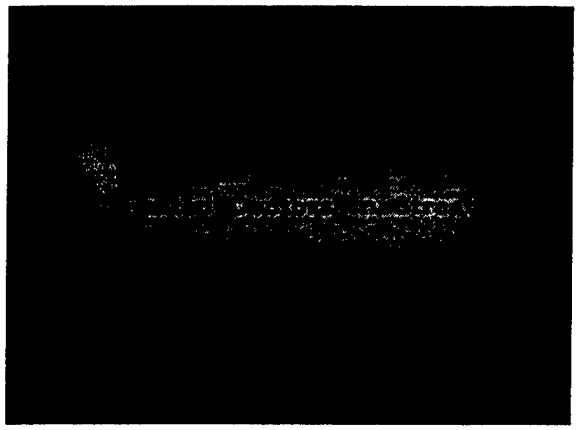
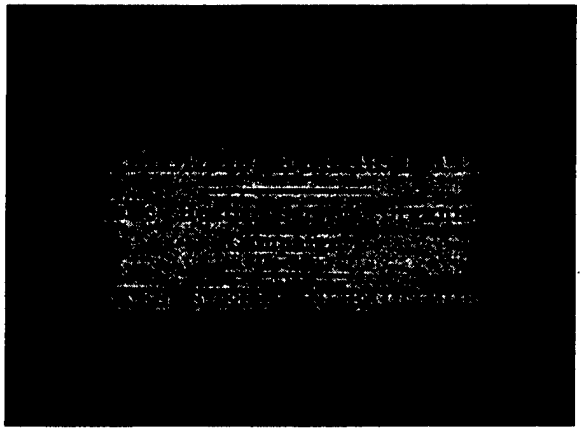
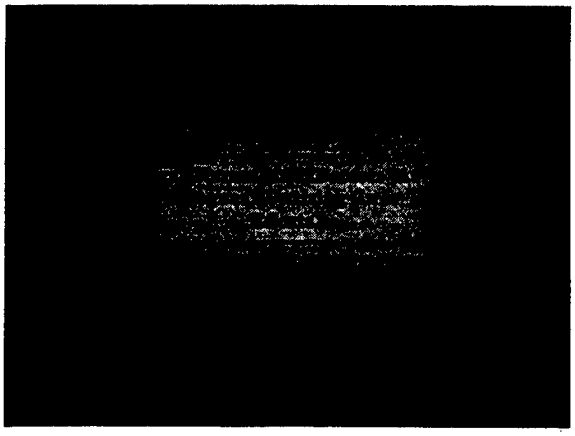
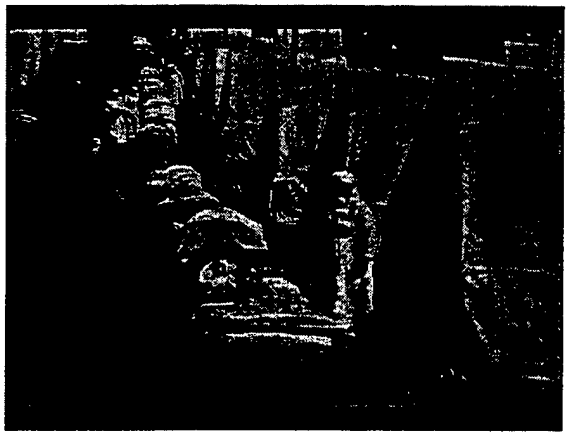
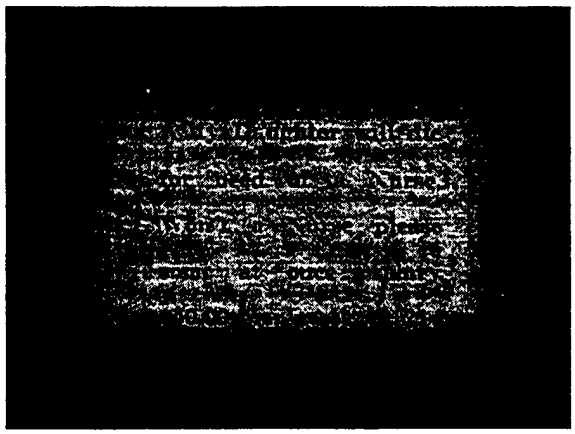


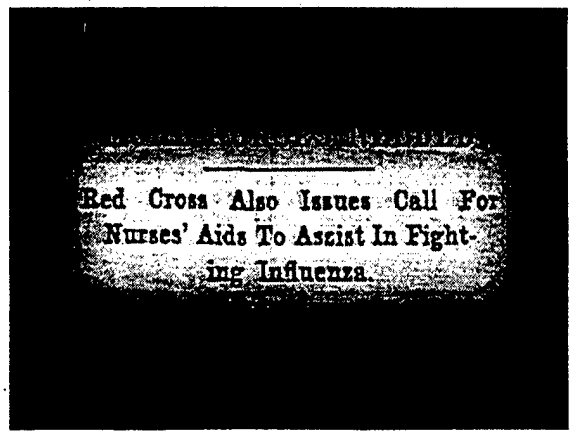


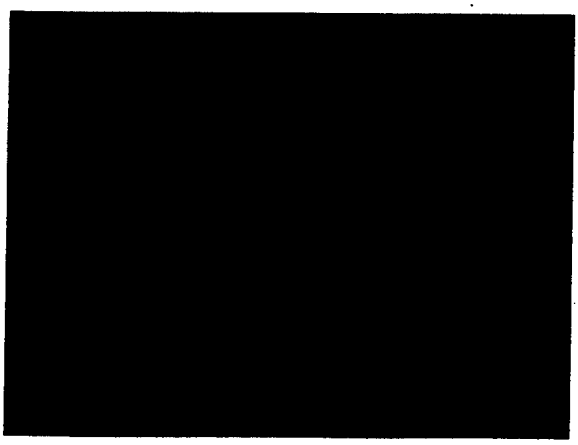






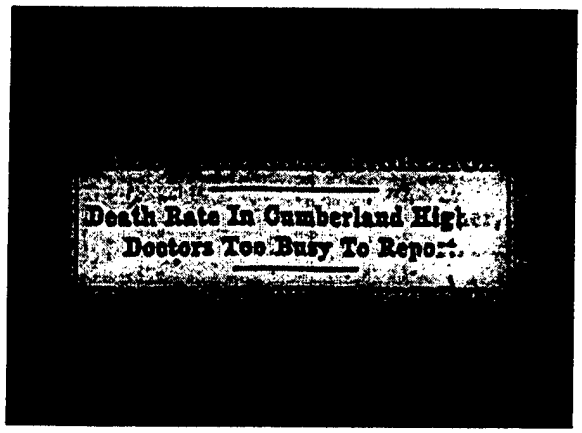



Red Cross Also Issues Call For
Nurses' Aids To Assist In Fight-
ing Influenza.



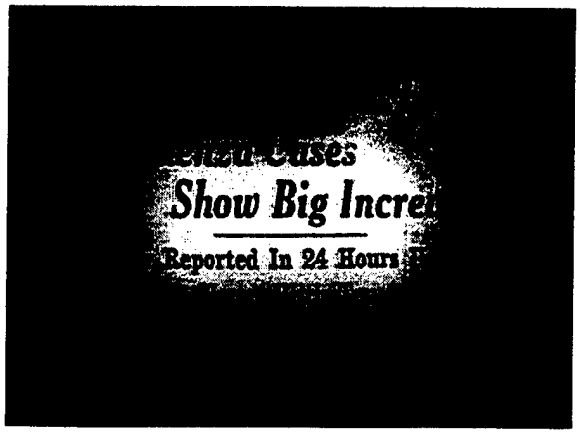
Scope of Outbreak Elusive

- No well-developed reporting system – fed-state-local
- Preoccupied physicians don't report
- Peak data overwhelm health departments



Troubling News Reports

- Unrelenting news focus on cases, deaths (#s)
- Health dept #s vs. injunctions not to worry
- Lack of consensus – X physicians, X health depts
- Fearful speculation about epidemic returning



Public Faith in Health Orders Lacking

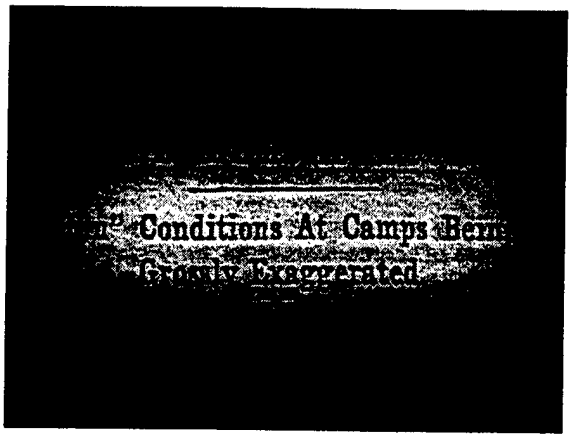
- Clash of belief systems - origin in sin or germs
- Contrary to "common sense" - drafty street cars
- Inconsistent application - open saloons, closed churches
- Inconvenience, financial burden - regulated business hours
- Trampled freedoms - compulsory masks

"Does it look like good judgment, in the face of a disease that is spreading death and terror among a people almost equivalent to that of the great war...to close an institution that was designed by Jesus Christ to bring comfort and help in the time of sorrow and need...while we allow an institution of the devil...to run wide open and thus add to the misery and suffering of many of our helpless people?"

- Pastor, Methodist Episcopal Church
  Letter to Editor, *The Sun*, October 15, 1918

Reinforcement of Social Schisms, Inequalities

- Fellowship during health emergency - aid, shared sacrifice
- Fear of contagion:
  - Disrupted intimacy - kissing, shaking hands
  - Inflamed divisions/provoked blame - Germans
- Inaccessibility of medical care for some



Public Health Emergency Planning Lessons

- Build capacity to care for mass casualties
- Characterize outbreak accurately, promptly
- Earn public confidence in containment
- Curb social injuries of health crisis

Implications for Mass Casualty Care

- Protections for most critical asset - people
- Support, plans for hospitals - community beacons
- Innovative, home care delivery
- Supportive care en masse
- Mechanisms to channel volunteerism

Lessons for Outbreak Monitoring

- Uncertainties necessitate knowledge of epidemic's extent
  - Health officials to judge controls
  - Communities to interpret losses
  - Clinicians to review treatments
- Effective tracking, description:
  - Quick, accurate counts of cases, deaths
  - Assessment of public health interventions
  - Communication with public

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Guidelines for Enlisting Public Support

- Convey consistent, meaningful messages
- Provide for diverse audiences - beliefs, languages
- Anticipate, acknowledge concerns and grievances

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Lessons for Reducing Epidemic's Social "Casualties"

- Avoid mortuary practices seen as dehumanizing
- Fairly allocate resources - defensible use of scarce resources
- Protect against social discrimination, accusation

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Case Mortality Rate

Spanish Influenza 2.5%

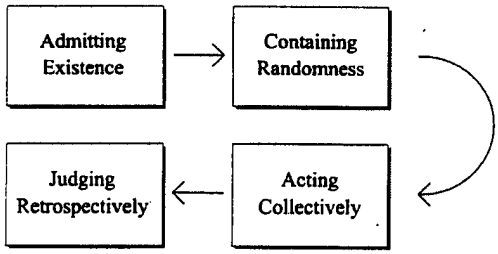
Case Mortality Rate

Untreated Plague 100%

Untreated Anthrax 90%

Smallpox 30%

"Plot Line" of Classic Epidemic



Rosenberg, 1989, *Daedalus*

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Appendix 2

The Threat of Bioterrorism

Randall J. Larsen

ANSER
Institute for
HOMELAND
Security

20 Oct 01

Col Randy Larsen, USAF (Ret.)

21st Century Biowarfare

Far different from conventional warfare ...
no blast, heat and fragmentation.

Far different from a natural outbreak of disease.
It will be delivered by a thinking enemy
who will vastly compound the problems of response.

Neither the national security
nor the public health communities
are prepared.

DARK
WINTER

Andrews Air Force Base
22 - 23 June 2001

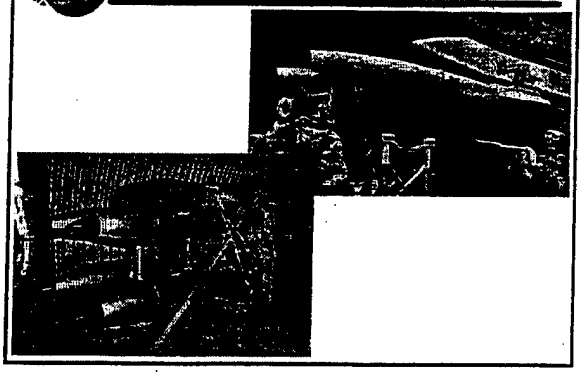
Key Players

- President
  - The Hon. Sam Nunn
- Governor of Oklahoma
  - The Hon. Frank Keating
- National Security Advisor
  - The Hon. David Gergen
- CIA Director
  - The Hon. James Woolsey
- Secretary of Defense
  - The Hon. John White
- Chairman, JCS
  - General John Tilelli (USA, Ret.)
- Secretary of State
  - The Hon. Frank Wisner
- Secretary of Health & Human Services
  - The Hon. Margaret Hamburg
- Attorney General
  - The Hon. George Terwilliger
- Director, FEMA
  - Mr. Jerry Hauer
- Director, FBI
  - The Hon. William Sessions

Briefed to Date

- Vice President Dick Cheney and staff
- Senate Foreign Relations Committee
- House Subcommittee on National Security, Veterans Affairs, and International Relations
- Deputy Assistant to Secretary of Defense/ CB Defense
- Senators Warner (R-VA), Roberts (R-KS)
- Representatives Mac Thornberry (R-TX), Gene Taylor (D-MS), Chet Edwards (D-TX), Adam Schiff (D-CA)
- Commander, Joint Forces Command
- Joint Staff J5 (and HLS Division), Deputy J3, J34

In Comparison



Determining the Threat

Capability

x

Vulnerability

x

Intent

=

THREAT

Biological Warfare

Nov. 16, 1997: Defense Secretary William Cohen holds up a five-pound bag of sugar on ABC's *This Week*. A similar amount of Anthrax could destroy half the population of Washington.

Lethality

With ideal conditions (a clear, calm night) a single aircraft, using an efficient aerosol generator to dispense 100 kg of anthrax spores, could adequately cover a 300 km^2 area and inflict between 1,000,000 and 3,000,000 deaths.

Source: US Congress Office of Technology Assessment, *Proliferation of Weapons of Mass Destruction: Assessing the Risks*, August 1993, pg. 54.

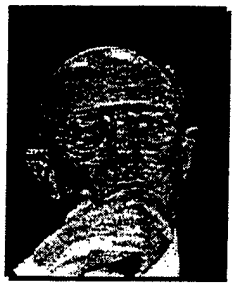
Believers

The one that scares me to death, perhaps even more so than tactical nuclear weapons, and the one we have the least capability against is biological weapons.

General Colin Powell, 1993

Source: Testimony of Gen. Colin Powell, US Congress, House Committee on Armed Services, Hearings on National Defense Authorization Act FY1994 - H.R. 2401, 103rd Cong., 1st session., H201–33 (Washington, D.C.: Government Printing Office, 1993): 112.

Believers (Cont.)



Bioterrorism is the single most dangerous threat to U.S. national security in the foreseeable future.

R. James Woolsey, Director of the Central Intelligence Agency, 1993-1995

Believers (Cont.)

Today one man can make war. A lucky bio buffoon could kill 400,000 people.

Dr. Joshua Lederberg

For more Information: Visit the National Library of Medicine's *Profiles in Science* website on Dr. Lederberg:

www.profiles.nlm.nih.gov/BB/Views/Exhibit/Ver.html

Soviet Union's BW Program

Colonel (Dr.) Kanjatan Alibekov

Dr. Ken Alibek

Human "Testing"

Sv[redacted]vsk
Apr[redacted]1979

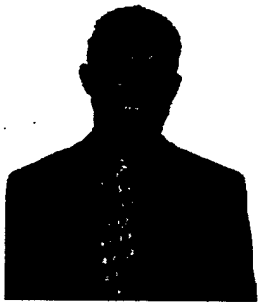
Aerosol Release of Less Than *One* Gram of Anthrax Spores

96 People Infected
66 Died of Pulmonary Anthrax

Villages With Numerous Cases of Animal Anthrax

10 Kilometers

Soviet Union's BW Program

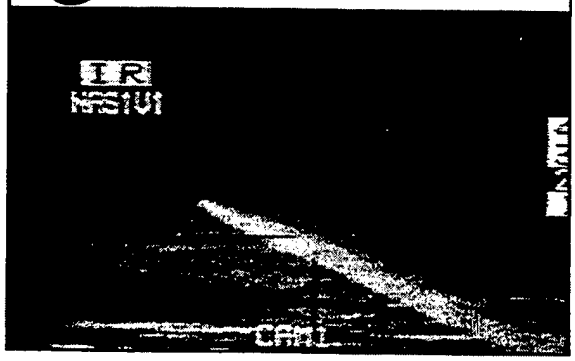


Dr. Serguei Popov

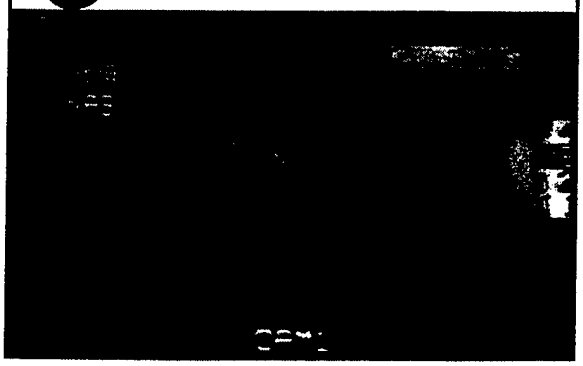
Served as a division head in Vector and Obolensk in branches of the Soviet program dedicated to developing genetically enhanced bioweapons. He defected to Britain in 1992 and later traveled to the United States.

Live Agent Tests

Aerial Dissemination



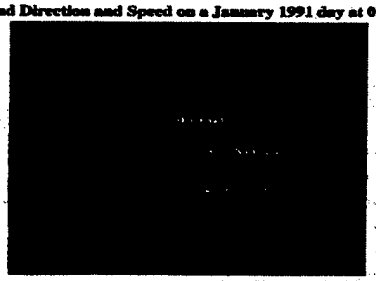
Gulf War Threat



Force Disposition

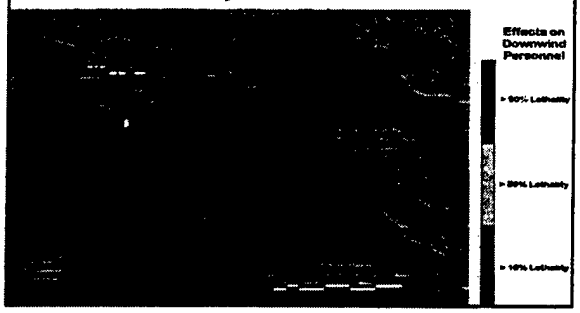
Atmospheric Conditions

Wind Direction and Speed on a January 1991 day at 0300L



Bio Vulnerability

Coalition Forces
January, 1991



Biological Weapons

- Agent Acquisition
- Production
- Weaponization
- Delivery

March 3, 1999: Dr. William Patrick attempts to illustrate how easy it is to launch biological agents at a House committee meeting.

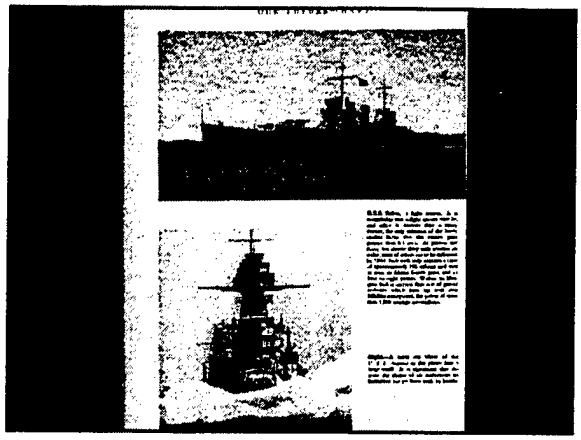
Applied to this Equation

Capability
x
Vulnerability
x
Intent
=
THREAT

Respond vs. React

Education

- First Responders
- Meteorological Conditions
- Defense Against Low-Tech
- Low-Cost Defense



ANSER HOMELAND SECURITY

DETERRENCE • PREVENTION • PREEMPTION • CRISIS MANAGEMENT • CONSEQUENCE MANAGEMENT • ATTRIBUTION • MITIGATION

Appendix 3

Biological Agents of Terror & Community Response

Ann E. Norwood & Molly J. Hall

Bioterrorism Threat Agents:

JAMA Consensus Statements on Anthrax, Plague, Tularemia and Smallpox

Fear-Producing Elements Associated with Outbreaks

- Lack of sensory cues
- Ubiquitous symptoms
- Uncertainty about exposure
- Incubation period
- Grotesqueness

Fear-Producing Elements Associated with Outbreaks

- Potential for high numbers of casualties
- Limited availability of treatments
- Uncertainty about effectiveness of treatments
- Contagion
- Dispersion of the ill

Best Case	Worst Case
• Low transmissibility	• Highly contagious
• "Act of God"	• Deliberate release
• Low mortality	• High mortality
• Familiar disease	• Novel disease
• Confined to small geographical area	• Widely dispersed
• Effective treatments	• No effective treatments
• Sufficient resources to manage the outbreak	• Resources overwhelmed
• "Peaceful" death	• Disfigurement & grotesque death

Psychological Responses to Outbreaks

- Attribution of somatic symptoms to intoxication/infection
- Scapegoating
- Paranoia
- Social isolation
- Demoralization
- Loss of faith in social institutions

Mass Panic

- Intense, contagious fear
- Individuals behave with reference to self only
- Flight (escape) or freeze
- Loss of social organization
- Loss of social roles
- Community chaos

"Panic does not always go hand in hand with epidemics, nor does its scale correlate with the general gravity of the situation. Indeed, history demonstrates that population responses to diseases are rarely predictable, often peculiar..."

(L. Garrett, 1994)

Risk Factors for Mass Panic

- Belief that there is a small chance of escape from the agent
- Perceived high risk
- Available, but limited, treatment resources
- No perceived effective response
- Loss of credibility by authorities

Psychological Responses to Outbreaks

- Attribution of somatic symptoms to intoxication/infection
- Scapegoating
- Paranoia
- Social isolation
- Demoralization
- Loss of faith in social institutions

Biological Disease - Category A High Priority

Organisms that pose a risk to national security because they:

- Can be easily disseminated or transmitted person-to-person;
- Cause high mortality, with potential for major public health impact;
- Might cause public panic and social disruption; and
- Require special action for public health preparedness.

Category A Organisms

- Bacillus anthracis (anthrax)
- Clostridium botulinum toxin (botulism)
- Yersinia pestis (plague)
- Variola major (smallpox)
- Francisella tularensis (tularemia)
- Viral hemorrhagic fever

Biological Disease - Category B

Second highest priority

Agents that:

- Are moderately easy to disseminate;
- Cause moderate morbidity and low mortality; &
- Require specific enhancements of CDC's diagnostic capacity and enhanced disease surveillance.

Biological Disease - Category B

- Coxiella burnetti (Q fever)
- Brucella species (brucellosis)
- Burkholderia mallei (glanders)
- ricin toxin from Ricinus communis (castor beans)
- epsilon toxin of Clostridium perfringens
- Staphylococcus enterotoxin B

Biological Disease - Category C

3rd highest priority agents

Include emerging pathogens that could be engineered for mass dissemination in the future because of:

- Availability;
- Ease of production and dissemination; &
- Potential for high morbidity & mortality and major health impact.

Biological Disease - Category C

- Nipah virus
- Hantaviruses
- Tickborne hemorrhagic fever viruses
- Tickborne encephalitis viruses
- Yellow fever
- Multidrug-resistant tuberculosis

Anthrax

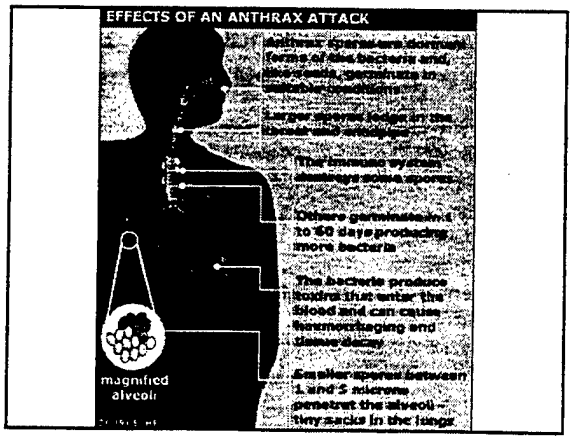
3 types:
Cutaneous: exposure to infected animals
GI: ingestion of contaminated meat
Inhalational: (wool sorters)

Microbiology:
Bacillus Anthracis (*anthrakis* = coal in Greek)
Causes black, coal-like skin lesions
Aerobic, gram-positive, spore-forming, non-motile specus of *Bacillus*

Anthrax

Mechanism of disease:

- 1-5μ spores deposited in alveoli of lungs
- Macrophages ingest the spores
- Surviving spores transported via lymphatics to mediastinal nodes where they germinate
- Bacteria produce toxins leading to hemorrhage, edema, and cell death
- LD50 2,500 to 55,000 inhaled spores

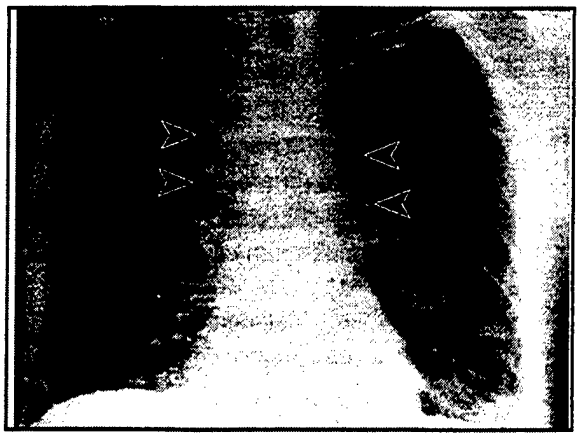


Anthrax: Clinical Presentation

2-stage illness:

1. Nonspecific symptoms: fever, SOB, cough, HA, vomiting, chills, abd & chest pain
2. Abrupt onset of sudden fever, SOB, perspiring, and shock.

In Sverdlosk, cases occurred from 2 to 43 days after exposure.



Anthrax: Treatment

Early use of antibiotics:

1. Intravenous vs. oral
2. Ciprofloxacillin or other fluorquinolone therapy due to penicillin and tetracycline resistant strains potentially being used.
2. Once susceptibility determined, use the most widely available, efficacious and least toxic antibiotic.
3. Continue therapy for 60 days

Anthrax: Treatment

- US anthrax vaccine is licensed to be given in a 6-dose series; mandated for US military
- Not recommended for population wide vaccination
- Post exposure vaccination might reduce the length of antibiotic treatment to protect against residual retained spores

Anthrax: Psychological & Behavioral Considerations

- Not transmitted person-to-person
- High lethality rate if not treated very early
- Limited supply of antibiotics & vaccine
- Delay between exposure and development of symptoms
- Uncertainty
- Potential for mass casualties if effectively dispersed
- Very limited medical experience with inhalational form

Smallpox

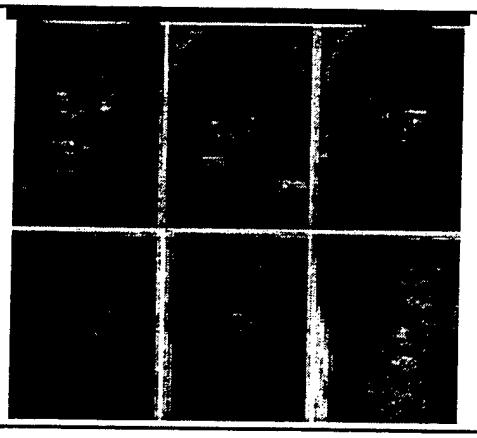
- Introduced by British during French and Indian Wars (1754-1767) killing more than 50% of many affected tribes
- DNA virus
- Member of genus orthopoxvirus
- Other members : monkey pox, vaccinia, and cowpox can affect humans causing skin lesions
- Only smallpox easily transmitted from person to person

Smallpox

- 90% appear with classic presentation, hemorrhagic & malignant forms more difficult to recognize
- Virus implants in the mouth, throat, or lungs
- Virus migrates and multiplies in regional lymph nodes
- Day 3-4:Virus travels through the bloodstream (without symptoms) Multiplies in the spleen, bone marrow, & lymph nodes

Smallpox

- Day 8: virus & toxins travel in bloodstream producing fever
- Day12-14: high fever, malaise, & prostration with headache & backache (sometimes with severe abd. pain & delirium)
- Rash appears on mucosa of mouth, throat, face, & forearms then spreads to trunk & legs
- Within 1-2 days, rash develops blisters which become filled with pus. Crusts from days 8-9 of rash
- Pitted scarring as scabs separate



Smallpox (variola)	Chickenpox (varicella)
• Rash is most dense on face, extremities	• Rash is most dense on trunk
• Lesions appear & evolve at same rate	• New lesions appear in crops
• Lesions at same rate of development	• Vesicles, pustules, & scabs appear at same time in adjacent areas
	• Lesions rarely found on palms & soles

Prevention & Treatment

Prevention

- Routine vaccination in the US stopped in 1972
- Vaccinations probably lose effectiveness beyond 10 years
- Vaccinia Immune Globulin (VIG) used for treating severe skins reactions occurring as a complication of vaccination
- For every 1,000,000 persons vaccinated, 250 would have complications requiring VIG

Treatment

- Supportive care & antibiotics for occasional 2° bacterial infections

Post-exposure Infection Control

- Aerosolized form inactivated within 2 days
- Patients do not transmit infection until the rash stage
- As long as 2 weeks between exposure & development of symptoms
- Cases will expand by a factor of 10 to 20 times with each generation of cases
- Vaccines given within 4 days of exposure offer protection against getting infection or reduces severity of infection

Post-exposure Infection Control

- Patients should be isolated in home or non-hospital facility as much as possible
- Virus in bed linens & clothes of smallpox patients can last for extended periods
- Standard hospital infection control measures sufficient to kill virus

Smallpox: Behavioral & Psychological Considerations

- Readily transmitted person-to-person
- High fatality rates
- Grotesque appearance of pustules
- Issues surrounding quarantine
- Only sufficient vaccine for 6-7 million people; limited supply of VIG
- Last outbreak in US in 1950s

Plague (*Yersinia* Pestis)

- Historically, called "Black Death"
- Occurs naturally when plague-infected fleas bite humans
- Most infected this way develop bubonic plague but some may develp pneumnoic plague
- Human-to-human transmission occurs through respiratory dropets

Plague used as Bioweapon

- Inhaled aerosolized plague would causes primary pneumonic plague.
- Symptoms develop between 1-6 days (most often 2-4 d) after exposure
- First signs of illness are fear with cough & shortness of breath, sometimes with bloody, watery or purulent sputum
- Nausea, vomiting, abdominal pain, & diarrhea may also be present

Plague as Bioweapon

- Ensuing clinical signs are similar to those of any rapidly progressing pneumonia.
- Primary pneumonic plague includes the absence of buboes (except, rarely, cervical buboes).
- Chest Radiographs commonly show bilateral infiltrates or consolidation

Clandestine Release of Plague

The sudden appearance of a large number of previously health patients with fever, cough, shortness of breath, chest pain, and a fulminant course leading to death suggests plague or anthrax. Hemoptyis (coughing up blood) would strongly suggest plague.

Treatment

1. In a contained casualty setting with modest number of patients, iv streptomycin or gentamicin are recommended
2. In a mass casualty setting, doxcycline or tetracylcine or ciprofloxacin
3. Close contact defined as 2 meters
4. In large pneumonic plague epidemics earlier in the century, disposable surgical masks prevented transmission

1994 Surat Plague Outbreak

- 58 deaths
- 6,500 cases of an antibiotic-susceptible infection
- Estimated 75% of city fled (including 80% of private physicians)
- 15 million doses of tetracycline consumed in 1 week in Surat; Widespread purchase of tetracycline throughout India

Surat Plague Outbreak

- Ban on flights, goods, and citizens from India imposed by some countries
- Severe economic consequences
- International concern about dissemination of plague outside of India (2,692 call to CDC plague hotline)

Tularemia

- 1 of most infectious bacteria: 10 organisms can cause disease
- Not transmitted human-to-human
- Aerosol dissemination would result in abrupt onset of large numbers of non-specific febrile illness 3-5 days later progressing to pneumonia and possibly death
- Without antibiotics, mortality rate is 30-60%
- Variety of antibiotics can successfully treat
- Mass vaccination not feasible due to short incubation period & incomplete protection

Bovine Spongiform Encephalopathy (BSE)

BSE is a slowly progressing degenerative brain disease of cattle. It is fatal for cattle within weeks to months from onset of clinical signs.

2 theories on the nature of agent:

1. Protein referred to as prion: "replicates" by causing the normal animal protein to change shape on contact
2. Virus-like & possesses nucleic acid

BSE

How is BSE transmitted?

- Cattle industry has used the by-products of rendering, ground, and processed into a product called mean and bone meal (MBM).
- MBM then combined with other products and fed to sheep and cows
- Humans ingest the livestock

variant Creutzfeldt-Jakob Disease (vCJD)

- The consumption of meat infected with BSE has been implicated as a risk factor in vCJD
- Incubation period of 10-20 yrs
- Both forms of CJD marked by rapidly progressive presenile dementia, myoclonus & progressive motor dysfunction.
- vCJD: more prominent psychiatric symptoms and signs at onset; a long course (death usually in the second year after symptoms onset) and a lack of characteristic EEG findings found in classic CJD

Foot and Mouth Disease (FMD)

- Affects cattle, sheep, pigs & goats
- Extremely rare in humans (like the flu with some blisters)
- Caused by highly infectious virus
- In animals, produces fever followed by the development of blisters (mouth & feet)
- Dairy cattle: loss of milk yield, abortion, sterility, chronic mastitis, & lameness

Mental Health System Response to a Natural or Terrorist Bio-event: Mitigating Psychological and Behavioral Consequences

- **Northeast**: [illegible]
- **Middle Atlantic**: [illegible]
- **Southeast**: North Carolina, Georgia, Florida
- **Midwest**: Ohio, Illinois, Indiana, Kansas, Missouri
- **Central South**: Texas, Oklahoma
- **Southwest**: Arizona
- **West**: California, Utah, Colorado
- **Northwest**: Oregon

- [illegible] Governments (COG) Bio[illegible]ing Committee
  - The National Governors Association (NGA)
  - The United States Conference of Mayors (USCM).
  - The National Association of State Mental Health Program Directors (NASMHPD)
  - The National Council for Community Behavioral Healthcare
  - The National Association of County Behavioral Health Directors

- Less than half the state departments of mental health have representation on a state interagency emergency planning group

- None of the state departments of mental health have developed plans to address behavioral and mental health issues specific to a bioterrorism event

- No states have [illegible] communication plans to inform the public [illegible] behavioral management
- There has not been risk communication training and there are no working agreements with the media that have included mental health

- Most have [illegible] different response requirements in a BT scenario compared to a natural disaster-this was a novel idea
  - In BT plans that do exist, mental health response is traditional, natural disaster based

- Less than half [illegible] have been involved in a BT exercise and all commented on the minimal role assigned to mental health

represented [illegible] planning process, are represented on animal disease working groups
  - This process was viewed as a template to consider psychological/consequence management in BT events
  - This topic generated enthusiasm and animated discussion

[illegible] was just beginning strengthening [illegible] between emergency management and mental health
  - Communication, credibility fostered by working relationships and mental health presence in other disasters
- Weaknesses: shortage of trained staff, delay in recognition of the issues and the lack of a strategic plan that addresses mental health issues in a bio-event.

involvement
  - All episodes had been handled by local public health
- In response to this question **5 states discussed mental health response to public shootings**