

# Executive Summary

## ABSTRACT

*Terrorism involves the illegal use or threatened use of violence, is intended to coerce societies or governments by inducing fear in their populations, and typically involves ideological and political motives. The attacks on September 11, 2001, have made Americans acutely aware of the devastation of terrorism. As the nation engages in the "war on terrorism," the psychological health of the public must not be neglected.*

*Terrorism, whether in the form of a mass physical attack or a chemical, biological, radiological, or nuclear event, can be psychologically devastating. Psychological consequences include an array of emotional, behavioral, and cognitive reactions. People may experience insomnia, fear, anxiety, vulnerability, anger, increased alcohol consumption, or smoking, and a minority will develop psychiatric illnesses such as posttraumatic stress disorder or depression. The number of people affected and the severity of consequences will vary according to the type and intensity of the event. The broad nature of these consequences demands a full public health response.*

*The nation's mental health, public health, medical, and emergency response systems currently are not able to meet the psychological needs that result from terrorism. Gaps exist in the coordination of agencies and services, training and supervision of professionals, public communication and dissemination of information, financing, and knowledge- and evidence-based services.*

*Management of the psychological consequences of terrorism will require a range of interventions at multiple levels involving a variety of service providers. Interventions are needed for the pre-event, event, and post-event phases of a terrorist attack and will have to address affected individuals and populations,*

*the broader social environment, and the terrorists who seek to harm. The committee offers an example for a public health strategy that may serve as a base from which plans to prevent and respond to the psychological consequences of a variety of terrorism events can be formulated. This approach is a strategic vision for assessing the completeness and effectiveness of plans, and to defining and addressing gaps in preparedness and response. It is hoped that lessons learned from preparing for the psychological consequences of terrorism may serve additional benefits by being applied to a variety of other violent events that affect the population. By comprehensively addressing the physical, psychological, and sociocultural needs of the population, the desired end result will be achieved—that is, the limitation of adverse psychological consequences, facilitation of growth and empowerment, minimization of disruptions to daily life, and enhancement of community cohesion.*

The ongoing threat of domestic terrorism is a critical concern for the United States. The Oklahoma City bombing, intentional crashing of airliners on September 11, 2001, and anthrax attacks in the fall of 2001 are recent and gripping examples of the intentional infliction of psychological and physical pain. There is a new sense of vulnerability in this country, and the uncertainties of where and when the next attack might occur introduce anxiety and stress in much of our society.

The events of September 11, 2001—multiple attacks on sites that were symbols of our nation—made salient the unpredictable and catastrophic nature of terrorism. These events and the subsequent anthrax attacks challenged federal, state, and local systems of response in new ways. As the nation contends with these new realities, we are reminded that events which frighten and intimidate communities have existed for some time. The shootings at Columbine High School, the Unabomber, the fall 2002 sniper shootings in the Washington, D.C., metropolitan area, and the violence that occurs so frequently in the nation's urban areas are examples of violent events used to injure and provoke fear. These events occur more commonly than acts of terrorism. It is hoped that preparing for terrorism events will allow the nation to be better prepared for the more common events that also can be devastating to psychological health.

Terrorism is defined as follows:

illegal use or threatened use of force or violence; an intent to coerce societies or governments by inducing fear in their populations; typically with ideological and political motives and justifications; an "extrasocietal" element, either "outside" society in the case of domestic terrorism or "foreign" in the case of international terrorism.<sup>1</sup>

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<sup>1</sup> National Research Council. 2002. Smelser NJ, Mitchell F, Editors. *Terrorism: Perspectives from the Behavioral and Social Sciences*. Washington, DC: The National Academies Press.

Terrorism includes a range of actors (including the perpetrators, those who are the targets, and those third parties that sponsor, collaborate, and sympathize with terrorists); a multitude of actions; and results in a variety of social, psychological, physical, and economic consequences. Terrorism has the ability to disrupt numerous aspects of individual and community functioning. Attending to the psychological needs of the population is a crucial part of recovery from a terrorism event, and preparedness and response present a challenge for the nation.

Addressing the physical, psychological, and social needs that result from the range of terrorism events or hazards (conventional explosives, biological, radiological, chemical, nuclear attacks) will require universal preparedness by all systems responsible for the public's health. Preparedness and response are required for all hazards, all segments of the population, and all phases of the event (pre-event, event, and post-event).

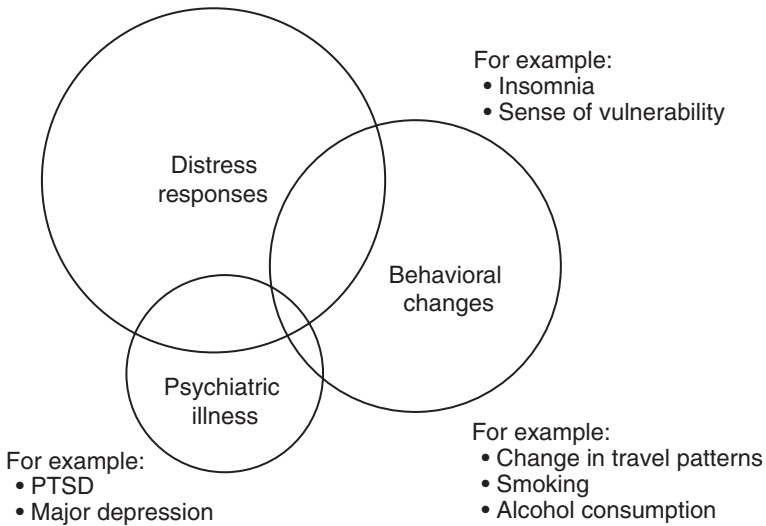
## CONTEXT OF THE REPORT

The Institute of Medicine (IOM) was asked to highlight some of the critical issues in responding to the psychological needs that result from terrorism and to provide possible options for intervention. This report identifies gaps in the knowledge necessary to inform policies and procedures for planning, preparedness, and intervention as well as identifies gaps in planning, preparedness, and the public health infrastructure. The report also identifies a variety of approaches to intervention to limit adverse psychological consequences and provides recommendations for options on how to optimize the public health response to the long-term and short-term psychological consequences of terrorism.

This Executive Summary presents only abbreviated versions of the study committee's recommendations. For the full recommendations, and a more extensive justification of each, the reader is referred to the full committee report.

## WHAT ARE THE PSYCHOLOGICAL CONSEQUENCES OF TERRORISM?

The psychological consequences of terrorism encompass a range of emotional, behavioral, and cognitive reactions that occur in the population as the result of an event or threat of an event. These consequences include distress responses, changes in behavior, and diagnosed psychiatric illness (see Figure ES-1). No one goes through a traumatic event unchanged, and psychological consequences are manifested, to varying degrees of severity, in the population. Distress responses may include insomnia and increased feelings of anxiety, anger, or vulnerability. Be-



**FIGURE ES-1** Psychological consequences of disaster and terrorism.

NOTE: Indicative only; note to scale.

havioral changes may include actions such as avoiding air travel, increasing smoking, or increasing alcohol consumption. Other behavioral changes may include gathering information about actions to take in response to the event or in preparation for future events, increasing communication with loved ones, or volunteering. Psychiatric illness related to a terrorism event may include posttraumatic stress disorder (PTSD) or depression. After a terrorism event, it is expected that most people will experience mild or infrequent behavioral changes or distress responses, while a smaller number will experience moderate or more frequent symptoms. A minority of people will suffer symptoms severe enough to warrant the diagnosis of a psychiatric disorder.

The body of literature examining the psychological consequences of terrorism is growing but remains relatively small. Much of what is used to determine how individuals and communities may react to terrorism is derived from the broader trauma literature, including that which examines disasters. Although there may be some similarities between other types of disasters and terrorism, the malicious intent and unpredictable nature of terrorism may carry a particularly devastating impact for those directly and indirectly affected. Continued investigation of terrorism events will help to improve understanding of the effects on various segments of the population and will provide an evidence base for prevention and intervention efforts.

*The committee finds that terrorism and the threat of terrorism will have psychological consequences for a major portion of the population, not merely a small minority. Research studies that have examined a range of terrorism events indicate that psychological reactions and psychiatric symptoms clearly develop in many individuals. To optimize the overall health and well-being of the population, and to improve the overall response to terrorism events, it is necessary that these potential consequences be addressed preventively as well as throughout the phases of an event.*

**Recommendation 2-1: The Department of Health and Human Services (HHS), including the National Institutes of Health (NIH), the Substance Abuse and Mental Health Services Administration (SAMHSA), and the Centers for Disease Control and Prevention (CDC), should develop evidence-based techniques, training, and education in psychological first aid<sup>2</sup> to address all hazards and all members of society during the pre-event, event, and immediate post-event phases of a terrorism event in order to limit the psychological consequences of terrorism.**

**Recommendation 2-2: HHS, including NIH, SAMHSA, and CDC, should develop public health surveillance for pre-event, event, and post-event factors relevant to addressing the psychological consequences of terrorism and should develop methods for applying the findings of this surveillance through appropriate interventions for groups of special interest.**

## TERRORISM AND THE PUBLIC'S HEALTH

The public's health is dependent on both psychological and physical well-being. The goal of the nation's public health system is to ensure the health of the population "through organized, interdisciplinary efforts that address the physical, mental and environmental health concerns of communities and populations at risk for disease and injury."<sup>3</sup> The prevention and treatment of psychological consequences that result from terrorism events should be an integral part of public health efforts.

Terrorism events and the threat of terrorism have affected and will continue to affect the population. Among the primary objectives of terror-

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<sup>2</sup> Psychological first aid (PFA) refers to a set of skills identified to limit distress and negative health behaviors (e.g., smoking) that can increase fear, arousal, and subsequent health care utilization. PFA is described in detail in Chapter 4 of the full report.

<sup>3</sup> Association of Schools of Public Health. *What Is Public Health*. [Online]. Available: [www.asph.org/aa\\_section.cfm?section\\_id=3](http://www.asph.org/aa_section.cfm?section_id=3) [accessed February 6, 2003].

ism are the psychological and physical injury of communities and populations. Therefore, there is a critical need for a public health approach to the psychological consequences resulting from terrorism. In order to ensure the public's health, efforts must be expanded beyond treatment for individuals who are most severely affected to comprehensive prevention and health promotion. The psychological health of the nation is critical to sustaining the nation's capabilities, values, and infrastructure.

The committee takes a public health approach to the psychological consequences of terrorism that focuses on prevention and health promotion as well as treatment. It adapts an epidemiologic model of disease transmission, which has been applied to the understanding and prevention of physical injuries and is termed the Haddon Matrix. In this model, an agent introduces a disease or condition to a host. Environmental factors will affect the opportunity for the agent and host to interact. A vector or vehicle may carry the agent to the host. Pre-event, event, and post-event phases in the process of sustaining an injury add an opportunity to understand the factors contributing to injury in each stage, which may lead to improved prevention and interventions.

Adapting the Haddon Matrix to psychological injuries resulting from terrorism offers an opportunity to examine what is needed to respond comprehensively and systematically to the needs of the public. The Haddon Matrix was a landmark in injury prevention, and is widely used to help categorize what is known about prevention and control and to help set priorities in public health approaches to motor vehicle collisions and other major causes of morbidity and mortality. In conceptualizing this model for psychological consequences, the committee views the terrorist's *violent act or threat* and the resulting fear and dread of future attacks as the agent affecting the population (Table ES-1). The host is redefined as the *affected individuals and populations* or those persons who are the targets of the terrorist act. At the level of the vector, or vehicle, the terrorist and his or her act are fused and become the *terrorist and injurious*

**TABLE ES-1** Application of the Public Health Model to Understand and Organize Factors Involved in the Psychological Consequences of Terrorism

Epidemiologic Terms	Psychological Terms
Agent	Violent act or threat
Host	Affected individuals and populations
Vector or vehicle	Terrorist and injurious agent, the way terror is propagated
Environment	Physical and social environment

*agent* (e.g., individuals crashing airliners, shooting others, or contaminating food or water supplies). The vector can also refer to the way the terror is propagated. Thus the media, particularly television, may also become a vector. The environment is further defined as the *physical and social environment*. It is not only the physical setting, but also the broader community and cultural context in which the event occurs.

Responding to the psychological needs of the public that arise as a consequence of terrorism may provide an opportunity to address the psychological effects of a variety of violent events and other disasters. These events are associated with a greater incidence of morbidity, including psychological injury, and mortality. The application and practice of strategies for preparedness and intervention may also assist in preparing the nation to respond to new terrorism threats.

### GAPS IN THE CURRENT INFRASTRUCTURE

Effective preparation and response for terrorism require a strong and cohesive infrastructure. Currently, a diverse array of individuals, groups, organizations, and agencies will respond to a terrorism event. Given the number and variety of these responders and of the public needs, there are inherent difficulties in planning and coordinating services and preventive efforts. The nation's infrastructure should provide the following 10 functions to effectively protect and respond to the public's psychological health as it relates to terrorism:

1. Provision of basic resources including food, shelter, communication, transportation, information, guidance, and medical services
2. Interventions and programs to promote individual and community resilience and prevent adverse psychological effects
3. Surveillance for psychological consequences, including distress responses, behavior changes, and psychiatric illness, and markers of individual and community functioning before, during, and after a terrorism event
4. Screening of psychological symptoms at the individual level
5. Treatment for acute and long-term effects of psychological trauma
6. Response for longer-term general human service needs that contribute to psychological functioning (e.g., housing, financial assistance when the event creates job loss)
7. Risk communication and dissemination of information to the public, media, political leaders, and service providers
8. Training of service providers (in medical, public health, emergency, and mental health systems) to respond to a terrorism event and to protect themselves against psychological trauma

9. Capacity to handle a large increase in demand for services to address psychological consequences in the event of a terrorist attack

10. Case-finding ability to locate individuals who have not utilized mental health services but need them, including underserved, marginalized, and unrecognized groups of people (e.g., undocumented immigrants, homebound individuals) and others with unidentified needs

The federal government administers a number of programs and services that are initiated in response to disasters. These systems focus largely on intervention and treatment for immediate needs, rather than on prevention and health promotion before an event or on longer-term needs. The relationships among the various agencies and programs are complex and promise to change as the newly established Department of Homeland Security continues to take form. The nation's response to an emergency situation is currently dictated by the Federal Response Plan, which coordinates the efforts of 27 federal departments and agencies and the American Red Cross. Federal assistance typically applies only to large-scale events that overwhelm local capacity. The range of federal agencies involved in responding to psychological consequences in the event of disasters include the CDC, Department of Education, Department of Veterans Affairs, and SAMHSA, among others. In addition, the National Institute of Mental Health plays the crucial role of establishing the research agenda for federal funding.

Each state is required to have a disaster plan that dictates responses in the event of an emergency. These disaster plans are required to have a mental health component, although there is no standard approach for incorporating such issues. Most of the actual response is implemented through local community mental health services. Local mental health agencies are challenged in the event of a disaster due to the demands of continuing care for their regular populations in addition to serving the larger community who may experience disaster-related psychological consequences.

The private sector includes a wide variety of providers who are important in delivering services in response to disaster. The largest, and perhaps most well recognized, is the American Red Cross. The Red Cross works to meet basic human needs after a disaster, which include the provision of supportive counseling. Other private-sector systems that may provide support and services for addressing psychological consequences include the workplace, primary care settings, faith-based services, and other private mental health providers. The workplace is a particularly important setting for response because most acts of terrorism in the United States have occurred when people are at their places of employment.

*The committee finds that the workplace is a newly recognized and important environment in which to address public health planning for the psychological consequences of terrorism. Some examples of new occupationally exposed groups include construction workers, postal workers, utility workers, public health workers, and children and teachers in schools. Implementation of universal preparedness is required for the workplace, but specific considerations will be needed for critical occupational sites. Recent terrorism events have involved workplaces and new categories of responders and have exposed traditional first responders to new levels of job-related stress and risk exposure.*

**Recommendation 3-4: The National Institute for Occupation Safety and Health (NIOSH) and the Department of Labor should collaborate to ensure the existence of appropriate guidelines to protect workers by incorporating the psychological aspects of disaster preparedness into all planning and interventions. Because schools are a workplace for staff and students, the Department of Education should collaborate with state and local education systems to ensure preparedness.**

While the ability of the nation's infrastructure to respond to large-scale terrorism events has not been extensively tested, the responses to events such as the 1995 Oklahoma City bombing, September 11, 2001, attacks, 2001 anthrax attacks, and 2002 Washington, D.C., area sniper shootings can be instructive. These events provide an opportunity to identify gaps in systems of response and to offer suggestions that may achieve better integration of systems to respond more effectively to future terrorism events, both large and small. The gaps in current systems of services can be categorized into five general areas:

1. Coordination of agencies and services
2. Training and supervision
3. Public communication and dissemination of information
4. Financing
5. Knowledge- and evidence-based services

The *coordination of agencies and services* includes the organization and management of different types of services to individuals with different needs and to the same individuals over time as their needs change. It encompasses points such as licensing and credentialing of providers and clarifying the roles of various service providers. This is a multilevel–multidisciplinary issue that also involves communication between different levels of government and the integration of various sources of funding.

Issues related to *training and supervision* include the shortage of mental health providers with disaster training and experience. Skilled providers will help to ensure effective and adequate treatment. Providers who are unlicensed require additional supervision. *Public communication and dissemination of information* are crucial following a terrorism event, particularly in the case of chemical, biological, radiological, or nuclear terrorism when instruction will be critical for effective management. Public communication and dissemination of information include issues such as addressing who delivers information and how it is communicated. *Financing* of services and planning for psychological consequences is frequently inadequate. The amount of funding, duration of funding, services eligible for coverage, and inclusion of mental health services in broader terrorism preparedness plans are areas requiring attention. One of the most critical problems in identifying effective prevention and response plans is that the *knowledge- and evidence-base* necessary to inform policies and practice is severely lacking. Models for promoting community recovery and resilience, early interventions, and preparedness are required, as is a more comprehensive understanding of the psychological impact of terrorism events.

*The committee finds that many mental health professionals do not have specific knowledge with regard to disaster mental health. Training and education emphasizing psychological consequences and methods of response should be provided to professionals within the mental health fields, including school-based mental health practitioners such as school counselors, school psychologists, and school social workers.*

**Recommendation 3-1: Academic healthcare centers, professional associations and societies for mental health professionals, and state boards of education, in collaboration with HHS, including SAMHSA, NIH, and CDC, should ensure the education and training of mental health care providers, including community- and school-based mental health care providers on responding to the psychological consequences of terrorism.**

*The committee finds that a broad spectrum of professional responders is necessary to meet psychological needs effectively. Those outside the mental health professions, who may regularly interface with the public, can contribute substantially to community healing. These professionals include, but are not limited to, primary care providers, teachers and other school officials, workplace officials, government officials, and faith-based and other community leaders. However, these professionals will require knowledge and training in order to provide effective support. Basic knowledge of psychological reactions, as well as training in*

*support techniques and recognizing serious symptoms that necessitate referral, should be provided.*

**Recommendation 3-2:** Academic centers and professional associations and societies, in collaboration with HHS, including SAMHSA, NIH, and CDC, should ensure the education and training of relevant professionals in health fields, including primary care providers, school-based health care providers, public health officials, and the public safety sector, in the psychological consequences of terrorism.

**Recommendation 3-3:** SAMHSA, in collaboration with academic centers and state and local health care agencies, should ensure the provision of education and training in the psychological consequences of terrorism for a range of relevant community leaders and ancillary providers.

*The committee finds that research following terrorism events presents a multitude of practical and ethical challenges. Utilizing findings from research on other traumatized populations is not an adequate substitute, and support of disaster-specific and terrorism-specific research is necessary to provide information pertinent to the population and its needs for intervention. This research can be facilitated by improving cooperation and coordination among federal funding and regulatory agencies as well as by developing the high-quality methodology necessary for the conduct of these investigations.*

**Recommendation 3-5:** Federal agencies such as CDC, NIH, SAMHSA, and NIOSH should coordinate research agendas, cooperate in establishing funding mechanisms, and award timely and sufficient funding of research on best practices to inform and guide interventions that will address the psychological consequences of terrorism.

## DEVELOPING STRATEGIES FOR LIMITING THE PSYCHOLOGICAL CONSEQUENCES OF TERRORISM

Interventions are required to ensure that the priority needs discussed above are met and gaps are covered. Although most research provides little in the way of evidence-based prevention and intervention strategies for addressing psychological needs after terrorism events, this should not prohibit action. The committee offers suggestions for prevention and response strategies based on what is known about responses to disasters, the small but growing body of evidence pertaining to psychological con-

sequences of terrorism, and reasonable assumptions regarding ways to promote and protect the public's mental health. It is noted that many of these proposed strategies lack evidence of efficacy but represent the present consensus of experts. *A substantial need is to evaluate the efficacy of each of these interventions.*

Adaptation of the Haddon Matrix to the psychological consequences of terrorism offers a useful way to organize and categorize components of societal infrastructure for prevention and intervention. Using the matrix as a base for organization, a range of issues is highlighted in Table ES-2 that will warrant attention in response to a terrorism event and represent considerations for prevention and intervention at each phase of an event. The pre-event, event, and post-event phases of the strategy also correspond to the Department of Homeland Security's emergency management program of preparedness, mitigation, response, and recovery. The committee has added to the Haddon Matrix an additional dimension within each cell to reflect interventions at the biological—physical, psychological, and sociocultural levels. A full discussion of points listed in Table ES-2 are provided in Chapter 4 of the report. Many of the strategies cover the ten functions listed as necessary for an adequately prepared infrastructure and address the five areas identified as gaps (coordination of agencies and services, training and supervision, public communication and dissemination of information, financing, and knowledge- and evidence-based services).

Factors related to the terrorist and injurious agent are not addressed in this report but are discussed in other National Research Council reports (see *Discouraging Terrorism: Some Implications of 9/11*<sup>4</sup> and *Terrorism: Perspectives from the Behavioral and Social Sciences*<sup>5</sup>). The intent of illustrating these features here is to offer a comprehensive representation of factors that will warrant an integrated analysis by those managing the diverse systems that ensure the nation's health and safety. The committee also presents this comprehensive perspective to illustrate the point that addressing the public's psychological needs is critical to general terrorism preparedness and response.

The example public health strategy is offered to help organize and categorize known and hypothesized interventions. It is proposed as a basic plan from which more detailed and tailored plans can be derived to fit the variety and complexity of terrorism events that may arise. Methods to achieve these plans and strategies for coordinating systems will need to be tested and evaluated. It is hoped that the committee's plan will stimu-

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<sup>4</sup> National Research Council. 2002a. Smelser NJ, Mitchell F, Editors. *Discouraging Terrorism: Some Implications of 9/11*. Washington, DC: The National Academies Press.

<sup>5</sup> National Research Council. 2002c. Smelser NJ, Mitchell F, Editors. *Terrorism: Perspectives from the Behavioral and Social Sciences*. Washington, DC: The National Academies Press.

late further development and investigation of elements that will provide the necessary framework for effective planning and response to protect the public's health during the ongoing war on terrorism.

*The committee finds that management of the psychological consequences of terrorism (and similar community events) is a pressing public health issue. Psychological interventions are needed for the pre-event, event, and post-event phases of terrorist attacks. Such interventions are necessary to address potentially affected individuals and populations, the injurious agents, and the physical and social environment, as identified in the committee's example public health strategy. The nation's present mental health system is an essential, but inadequate, resource to meet all the expected needs.*

**Recommendation 4-1: HHS and the Department of Homeland Security should analyze federal, state, and local preparedness for terrorism to ensure that the nation's public health infrastructure is prepared to adequately respond to the psychological consequences across a continuum of possible terrorism events, including weapons of mass destruction. The committee's example public health strategy should serve as a base from which components of the infrastructure are evaluated.**

**Recommendation 4-2: Federal, state, and local disaster planners must address psychological consequences in their planning and preparedness and in their response to pre-event, event, and post-event phases of terrorist attacks. Consideration should be given to needs associated with different types of terrorism events and to needs for various segments of the population. Adequate federal, state, and local prioritization and funding of resources and support should be provided to ensure psychological preparedness and response.**

The committee concludes that the infrastructure responsible for protecting the public's health is unprepared to meet the psychological needs that will result from a terrorism event and the ongoing threats of terrorism and, furthermore, that the public's mental health must be a central part of the nation's efforts to protect against and counter terrorism. The committee's public health strategy, as outlined in Table S-2, is devised as a strategic vision for assessing the completeness and effectiveness of plans to address the consequences of terrorism. Comprehensively addressing the physical, psychological, and sociocultural needs of the population will help to achieve the desired end result—that is, the mitigation of adverse psychological consequences, facilitation of growth and empowerment, minimization of disruptions to daily life, and enhanced community cohesion.

**TABLE ES-2** An Example Public Health Strategy: Preparing for the Psychological Consequences of Terrorism  
 Example of a public health plan to assist in preparation for and response to the psychological consequences of a terrorism event utilizing phases and factors adapted from the Haddon Matrix.

		Factors	
Phases	Affected Individuals and Populations	Terrorist and Injurious Agent*	Physical and Social Environment
<b>Pre-event</b>	<p><b>Biological-Physical</b></p> <ul style="list-style-type: none"> <li>• Stockpile vaccinations, antibiotics, antidotes</li> <li>• Train emergency, medical, and public health professionals in spectrum of skills necessary to respond to incidents</li> <li>• Conduct baseline health surveillance</li> </ul> <p><b>Psychological</b></p> <ul style="list-style-type: none"> <li>• Integrate psychological and mental health into all public health and emergency preparedness plans</li> <li>• Design and implement psychological first aid training</li> <li>• Prepare materials for media and public education</li> <li>• Identify groups of special interest</li> <li>• Train all relevant health professionals in disaster mental health and psychological consequences of terrorism</li> <li>• Train other relevant service providers</li> </ul>	<p><b>Biological-Physical</b></p> <ul style="list-style-type: none"> <li>• Make chemical, biological, radiological, and nuclear weapons difficult to obtain</li> <li>• Decrease information and dissemination about how to produce weapons</li> <li>• Make buildings safer, and trains and planes less likely to be hijacked, and develop inherent detection systems in potential agents</li> <li>• Decrease available resources and disrupt terrorist groups</li> </ul> <p><b>Psychological</b></p> <ul style="list-style-type: none"> <li>• Describe prevention efforts in biological-physical areas and achieve positive publicity</li> <li>• Explain consequences for terrorists</li> </ul> <p><b>Sociocultural</b></p> <ul style="list-style-type: none"> <li>• Study conditions that foster terrorism</li> <li>• Make certain there are lawful ways for terrorists to communicate legitimate concerns</li> </ul>	<p><b>Biological-Physical</b></p> <ul style="list-style-type: none"> <li>• Ensure that buildings, planes, water, food, etc., are tested and protected</li> </ul> <p><b>Psychological</b></p> <ul style="list-style-type: none"> <li>• Develop an effective risk communication strategy</li> <li>• Identify and train spokespersons</li> <li>• Inform the public about prevention and safety efforts</li> <li>• Provision of information that educates populations about expectable responses and coping strategies that would increase community resilience</li> </ul> <p><b>Sociocultural</b></p> <ul style="list-style-type: none"> <li>• Develop terrorism response plans</li> <li>• Ensure the community is appropriately represented in pre-event planning</li> <li>• Address and ensure equity in the allocation of resources</li> </ul>

**Sociocultural**

- Identify population characteristics important to intervention
- Develop geo-mapping of populations, potential targets, and community resources
- Identify and implement methods for educating the public
- Ensure adequate public health and mental health care systems

**Event**

**Biological–Physical**

- Implement public health–mental health response
- Provide basic needs
- Provide appropriate interventions

**Psychological and Sociocultural**

- Implement psychological first aid
- Affected population responds appropriately and takes action to minimize exposure to agent, including implementing disaster behaviors
- Distribute information appropriate to the event

**Biological–Physical**

- Develop systems to interdict during an event
- Describe to the public the available organizational and communication systems

**Psychological and Sociocultural**

- Consider how to mobilize trauma workers and notify survivors of services in the absence of functioning communication systems

**Biological–Physical**

- Respond to alarms
- Respond to surveillance system
- Dispatch emergency personnel and involve public health and medical care systems

**Monitor immediate threats**

- **Psychological and Sociocultural**
- Communicate risk and proposed response effectively

TABLE ES-2 Continued

Factors	
Phases	Affected Individuals and Populations
Phases	Terrorist and Injurious Agent*
Phases	Physical and Social Environment
<b>Post-event</b>	<p><b>Biological–Physical</b></p> <ul style="list-style-type: none"> <li>• Minimize secondary consequences</li> <li>• Triage and treat as necessary</li> <li>• Recover, identify, and bury dead</li> </ul> <p><b>Psychological</b></p> <ul style="list-style-type: none"> <li>• Continue psychological first aid</li> <li>• Conduct individual, group, and population assessments to identify specific needs in response to event including the assessment, triage, and treatment of psychological injury</li> <li>• Consider intervention needs of special populations</li> </ul> <p><b>Sociocultural</b></p> <ul style="list-style-type: none"> <li>• Communicate that preparedness helped decrease impact of the attack</li> <li>• Publicize availability of targeted services to appropriate segments of the population</li> <li>• Produce public information and warnings</li> <li>• Promote family and community cohesion</li> </ul>
	<p><b>Biological–Physical</b></p> <ul style="list-style-type: none"> <li>• Respond quickly to seek out and punish those responsible</li> <li>• Decrease availability or toxicity of agents used in the attack so that the next attack will not be so deadly</li> </ul> <p><b>Psychological</b></p> <ul style="list-style-type: none"> <li>• Communicate deterrent information</li> <li>• Identify better ways to decrease activity of terrorists</li> </ul> <p><b>Sociocultural</b></p>
	<p><b>Biological–Physical</b></p> <ul style="list-style-type: none"> <li>• Evaluate effectiveness of emergency plan and disaster response</li> <li>• Mitigate ongoing health risk and secure physical infrastructure</li> <li>• Monitor ongoing threat</li> </ul> <p><b>Psychological</b></p> <ul style="list-style-type: none"> <li>• Limit secondary exposure</li> <li>• Adjust risk communication, emphasizing the positive</li> <li>• Devise a public mental health strategy to assist communities, groups (workplace and schools), families and individuals to cope with trauma reminders</li> </ul> <p><b>Sociocultural</b></p> <ul style="list-style-type: none"> <li>• Establish strategies for community healing</li> </ul>

**Desired  
end results**

- Mitigate or prevent adverse consequences including:
  - Distress
  - Negative behavioral change
  - Psychiatric illness
  - Poor job performance or loss of job
  - Physical injury
- Increase positive adaptive behaviors
- Facilitate posttraumatic growth
- Increase empowerment
- Minimize loss of life and impact of disease processes
- Minimize spread of infectious agents
- Minimize destruction of buildings and infrastructure
- Provide an environment that allows for rapid recovery and rehabilitation
- Minimize disruption in daily routines of life
- Enhance community cohesion

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\* Although factors related to the terrorist and injurious agent include elements that may have psychological consequences (for example, decreasing information and dissemination about how to produce weapons may make the public feel more safe and decrease anxiety), they are not addressed in this report. These are factors likely addressed by the infrastructure's law enforcement sector, rather than public health, emergency, or medical services. The intent of illustrating these items in this table is to present an example of the full array of factors that warrant the joint attention of all systems responsible for the health and safety of the public in preparation for and response to terrorism events.

## Strategies for Preparing for and Responding to the Psychological Consequences of Terrorism

### Summary of Recommendations

#### *Preventive Measures*

**Recommendation 2-1:** HHS, including NIH, SAMHSA, and CDC, should develop evidence-based techniques, training and education in psychological first aid.

**Recommendation 2-2:** HHS, including NIH, SAMHSA, and CDC, should develop public health surveillance for pre-event, event, and post-event factors related to the psychological consequences of terrorism.

#### *Education and Training for Providers*

**Recommendation 3-1:** Academic healthcare centers, professional associations and societies for mental health professionals, and state boards of education, in collaboration with HHS, including SAMHSA, NIH, and CDC, should ensure the education and training of mental health care providers on responding to the psychological consequences of terrorism.

**Recommendation 3-2:** Academic centers and professional associations and societies, in collaboration with HHS, including SAMHSA, NIH, and CDC, should ensure the education and training of relevant professionals in health fields in the psychological consequences of terrorism.

**Recommendation 3-3:** SAMHSA, in collaboration with academic centers and state and local health care agencies, should ensure the provision of education and training in the psychological consequences of terrorism for a range of relevant community leaders and ancillary providers.

#### *Workplace Preparedness*

**Recommendation 3-4:** NIOSH, the Department of Labor, and the Department of Education should ensure appropriate guidelines to protect people in a variety of work environments including response sectors, food production and distribution, and schools.

#### *Research Needs*

**Recommendation 3-5:** Federal agencies should coordinate research agendas, cooperate in funding, and award timely and sufficient funding.

#### *Ensuring Preparedness Through a Comprehensive Public Health Strategy*

**Recommendation 4-1:** HHS and the Department of Homeland Security should analyze terrorism preparedness to ensure that the public health infrastructure is prepared to respond to the psychological consequences of terrorism.

**Recommendation 4-2:** Federal, state, and local disaster planners should address psychological consequences in their planning and preparedness for terrorist attacks.