



The Center for the Study of Traumatic Stress (CSTS) is part of the Uniformed Services University's Department of Psychiatry, located in Bethesda, Maryland, and a partnering center of the Defense Center of Excellence (DCoE) for Psychological Health and Traumatic Brain Injury.

## MENTAL HEALTH AND BEHAVIORAL GUIDELINES FOR RESPONSE TO A PANDEMIC FLU OUTBREAK

### *Background on the Mental Health Impact of Natural Disasters, including Epidemics*

It is only relatively recently that attention has been focused on the mental health impact of disasters. Previously, concerns related to immediate physical health and community infrastructure risks in the aftermath of disasters such as storms, earthquakes, or floods had overwhelmed considerations of the short and long-term mental health consequences of disasters, or the extent to which mental health played a role in the impact of a disaster (1).

In the arena of the health impact of natural disasters, the majority of data available relate to weather or geologic events (1). For example, there is some data on the long-term mental health impacts of such disasters as the Gujarat and Turkey earthquakes (2); the 2004 Asian tsunami (3); a number of large impact disasters in South America and Asia; and soon, there will be published data on Hurricanes Katrina and Rita (4-5). We know that severe stress reactions are common; that front-line health and human services workers are at high risk for PTSD; and that in general, even in relatively developed countries, there is very little existing infrastructure in place that can adequately address the mental health needs of victims (5).

In contrast, there is almost no data on the mental health impacts of outbreaks of disease. This is largely because there have been few pandemic health threats in the last century. Since the highly lethal pandemic outbreak of influenza in 1918, there have been few global threats from infectious agents. The recent outbreaks of SARS in Asia and Canada, which caused global concern but fortunately did not result in large-scale outbreaks nor a global pandemic, gives us the most recent data on the mental health concerns that are relevant in a pandemic outbreak situation.

There is almost no data on the mental health impacts of outbreaks of disease.

The data from the SARS outbreaks indicated that upwards of 40% of the community population experienced increased stress in family and work settings during the outbreak; 16% showed signs of traumatic stress levels; and high percentages of the population felt helpless, apprehensive, and horrified by the outbreak (6). In another community survey 30% of those surveyed thought they would contract SARS, while only a quarter believed they would survive if they contracted the disease, despite an actual survival rate of 80% or more, indicating a fairly high rate of perceived risk that might have preceded widespread panic had the outbreak been either more widespread or more lethal (7). Community residents were diligent about adopting appropriate person-to-person transmission precautions; however, precautions were adopted differentially based upon anxiety levels and perceived risk of contracting the disease, indicating the importance of stress and anxiety levels, as well as baseline mental health, on a public response to taking necessary precautions (7).

We also know from the SARS outbreak that front-line health workers may be particularly vulnerable to negative mental health sequelae of treating outbreak victims. Studies of the nurses who treated SARS patients indicated high levels of stress and about 11% rates of traumatic stress reactions, including depression, anxiety, hostility and somatization symptoms (8).

While there have been relatively few large outbreaks to inform an appropriate response to a potential pandemic flu, the existing data on infectious disease outbreaks, data from natural disasters, and public mental health principles can

be brought to bear on the development of such a response. Public mental health measures must address numerous areas of potential distress, health risk behaviors, and psychiatric disease. In anticipation of significant disruption and loss, promoting health protective behaviors and health response behaviors will be imperative. Areas of special attention include: (1) the role of risk communication; (2) the role of safety communication through public/private collaboration; (3) psychological, emotional, and behavioral responses to public education, public health surveillance and early detection efforts; (4) psychological responses to community containment strategies (quarantine, movement restrictions, school/work/other community closures); (5) health care service surge and continuity; and (6) responses to mass prophylaxis strategies using vaccines and antiviral medication.

The first step in preventing undesirable psychological, emotional, and behavioral response is an effective public health program of risk assessment and communication, public health prevention, and consequence management. These are necessarily premised on having effective political and community leadership, appropriate pre-event organization, and staffing and funding.

Being alert to the interrelationship between psychological, emotional, and behavioral responses and their effect on other elements of the response plan must also be emphasized. While planning can be based on assumptions that public health efforts to stop an outbreak will be successful, the importance of managing the consequences of failure and the subsequent behavioral response to failure is crucial. This can extend from failure to deliver support and services, to failure of a vaccine to prevent illness, to failure of therapies to work.

Recommended steps in response to a pandemic flu outbreak are divided into four phases: preparedness, early outbreak response, later response and recovery, and mental health intervention planning.

## PREPAREDNESS

1. **Education.** Public education must begin immediately, before a pandemic occurs, and be embed into existing disaster public education campaigns, resources, and initiatives (e.g. HLS's [www.ready.gov](http://www.ready.gov), Red Cross, CDC public education and preparedness <http://www.hhs.gov/pandemicflu/plan/>, and HHS [www.pandemicflu.gov](http://www.pandemicflu.gov)). This should focus on facts, to include what is known, what is not known, and how individuals, communities, and organizations can prepare for a potential outbreak.

As we know from the SARS outbreak, public education impacts threat awareness, threat assessment, and preparedness behaviors in every phase of an event. Public education in advance of an outbreak should be inclusive of the varying degree of threats, to include

those of reasonably low threat potential to those with the highest potential.

2. **Leadership preparation.** Leadership preparation includes ensuring that public officials understand which members of the population will be most vulnerable and who will need the highest level of health services, including mental health services. This includes identification of those groups who may be at greatest risk for problems related to contagion, such as those with psychiatric illness, children, elderly, homeless, and those with losses. Ongoing negative life events also increase one's risk for mental health problems, and may place certain people at higher risk for negative mental health impact of an outbreak. In addition, health risk behaviors such as smoking, drug use, and alcohol use may increase in times of stress, putting some people at increased risk.
3. **Sustaining Preparedness Measures.** Maintenance of motivation, capital assets, equipment, and funding to continue preparedness efforts over the long term must be considered, not just to focus on immediate needs. It is also important to remember that if responses are under-supported and fail, the community anger and lowered morale may complicate the ability of a community to respond to an outbreak, as well as the recovery process once an outbreak has ended.
4. **Leadership Functions.** Leadership functions require identification of community leaders, spokespersons, and natural emergent leaders who can affect community and individual behaviors and who can endorse and model protective health behaviors. Special attention to the workplace is imperative as corporations have public education resources to potentially reach large populations. The media and celebrity groups constitute important leaders in most modern societies and have a critical role in providing leadership in communication.

## EARLY PANDEMIC RESPONSE

1. **Communication.** Wide dissemination of uncomplicated, empathically informed information on normal stress reactions can serve to normalize reactions and emphasize hope, resilience, and natural recovery.

Recommendations to prevent exposure, infection, or halt disease transmission will be met with skepticism, hope, and fear. These responses will vary based on the individuals' and the local community's past experiences with government agencies. In addition, compliance with recommendations for vaccination or medication treatment or prophylaxis will vary greatly and will not be complete. The media can either amplify skepticism or promote a collaborative approach. Interactions with the media will be both challenging and critical.

The public must clearly and repeatedly be informed about the rationale and mechanism for distribution of limited supplies (e.g., Tamiflu). Leadership must adhere to policies regarding such distribution, as abuses of policy will undercut public safety and public adherence to other government risk reduction recommendations.

2. **Tipping points.** Certain events, known as ‘tipping points’, will occur that can dramatically increase or decrease fear and helpful or health risk behaviors. Deaths of important or particularly vulnerable individuals (e.g., children), new unexpected and unknown risk factors, and shortages of treatments are typical tipping points. The behavioral importance of community rituals (e.g. speeches, memorial services, funerals, collection campaigns, television specials) are important tools for managing the community wide distress and loss.
3. **Surges in demands for health care.** Those who believe they have exposed (but have not actually been) may outnumber those exposed and may quickly overwhelm a community’s medical response capacity. Planning for the psychological and behavioral responses of the health demand surge, the community responses to shortages, and the early behavioral interventions after identification of the pandemic and prior to availability of vaccines are important public health preparedness activities.

## LATER RESPONSE AND RECOVERY

1. **Community structure.** Maintenance of community is important. Community social supports — formal and informal — will remain important. In-person social supports may be hampered by the need to limit movement or contact due to concerns of contagion. Virtual contact – via web, telephone, television, and radio – will be particularly important at these times. At other times local gathering places – religious, schools, post offices, and groceries — could be points of access for education, training and distribution. In as much as allowed, instilling a sense of normalcy could be effective in fostering resiliency. In addition, observing rituals and engaging in regular activities (such as school and work) might manage community and organizational distress and untoward behaviors. Providing tasks for community action can supplement needed work resources, decrease helplessness and instill optimism. Maintenance and organization in order to keep families and members of a community together is important (especially in event of relocation).
2. **Stigma and discrimination.** Under conditions of continuing threat, the management of ongoing racial and social conflicts in the immediate response period and during recovery takes on added significance. Stigma

and discrimination may marginalize and isolate certain groups, thereby impeding recovery.

3. **Management of fatalities.** Mass fatality and management of bodies, as well as community responses to this, must be planned for. Containment measures related to bodies may also be in conflict with religious, rituals of burial, and the usual process of grieving. Local officials should be aware of the potential negative impact of disrupting normal funeral rituals and processes of grieving in order to take safety precautions. Public health announcements should include (if known) how long the virus remains in the corpse and what should be done with the bodies. In a pandemic, funeral resources will be overwhelmed and mortuaries may not want to handle contaminated bodies. Careful identification of bodies must be insured and appropriate, and accurate records maintained.

## MENTAL HEALTH INTERVENTION PLANNING

1. **Efforts to increase health protective behaviors and response behaviors.** Individuals under stress will need reminders to take care of their own health and limit potentially harmful behaviors. This will include taking medication, giving medications to elderly and children, and when to go for vaccination.
2. **Good risk communication following risk communication principles.** The media can either amplify skepticism or promote a collaborative approach. Interactions with the media will be both critical and challenging.
3. **Good safety communication.** Promoting clear, simple, and easy-to-do measures can be effective in helping individuals protect themselves and their families.
4. **Public education.** Educating the public not only informs and prepares, it enlists them as partners in the process and plan. Education and communications will need to address fears of contagion, danger to family and pets and mistrust of authority and government. The tendency to expect or act as if these are not present can delay community wide health protective behaviors.
5. **Facilitating community directed efforts.** By organizing communal needs and directing action toward tangible goals, this will help foster the inherent community resiliency toward recovery.
6. **Utilizing evidence-informed principles of psychological first aid.** These basic principles include:
  - Establish safety; identify safe areas and behaviors
  - Maximize individuals’ ability to care for self and family and provide measures that allow individuals and families to be successful in their efforts

- Teach calming skills and maintenance of natural body rhythms (e.g., nutrition, sleep, rest, exercise)
- Maximize and facilitate connectedness to family and other social supports to the extent possible (this may require electronic rather than physical presence)
- Foster hope and optimism while not denying risk.

7. **Care for first responders to maintain their function and workplace presence.** This will require assistance to ensure the safety and care of their families. First responders will be comprised of a diverse population, to include medically trained personnel to bystanders with no experience.
8. **Mental Health Surveillance.** Ongoing population level estimates of mental health problems in order to direct services and funding. Surveillance should address PTSD, depression and altered substance use as well as psychosocial needs (eg housing, transportation, schools, employment) and loss of critical infrastructure necessary to sustaining community function.

## References

1. Polatin PB, Young M, Mayer M, Gatchel R. Bioterrorism, stress and pain: the importance of an anticipatory communitrt preparaedness intervention. *Journal of Psychosomatic Research* . 2005 Apr; 58(4):311-6.
2. Altindag A, Ozen S, Sir A. One-year follow-up study of posttraumatic stress disorder among earthquake survivors in Turkey. *Comprehensive Psychiatry* 2005 Sep- Oct;46(5):328-33.
3. Chakrabhan ML, Chandra V, Levav I, Pengjuntr W, Bhugra D, Mendis N, Na A, van Ommeren M. Panel 2.6: mental and psychosocial effects of the Tsunami on the affected populations. *Prehospital Disaster Medicine* 2005 Nov-Dec;20(6):414-9.
4. Centers for Disease Control. Assessment of health-related needs after Hurricanes Katrina and Rita— Orleans and Jefferson Parishes, New Orleans area, Louisiana, October 17-22, 2005. *MMWR Morb Mortal Wkly Rep.* 2006 Jan 20;55(2):38-41.
5. Voelker, R. Post-katrina mental health needs prompt group to compile disaster medicine guide. *JAMA.* 2006 Jan 18;295(3):259-60.
6. McAlonan GM, Lee AM, Cheung V, Wong JW, Chua SE. Psychological morbidity related to the SARS outbreak in Hong Kong. *Psychological Medicine.* 2005 Mar;35(3)459-60.
7. LauJT, Yang X, Pang E, Tsui HY, Wong E, Wing YK. SARS-related perceptions in Hong Kong. *Emerging Infectious Diseases.* 2005 Mar;11(3):417-424.
8. Chen CS, Wu HY, Yang P, Yen CF. Psychological distress of nurses in Taiwan who worked during the outbreak of SARS. *Psychiatric Services.* 2005 Jan;56(1): 76-9.

*Prepared by the Center for the Study of Traumatic Stress in collaboration with the Mental Health Section of the American Public Health Association.*

Disaster Response Education and Training Project,  
Center for the Study of Traumatic Stress.

For more information see [www.usuhs.mil/csts/](http://www.usuhs.mil/csts/)



Center for the Study of Traumatic Stress  
Uniformed Services University of the Health Sciences  
4301 Jones Bridge Road | Bethesda, MD 20814-4799  
Tel: 301-295-2470 | Fax: 301-319-6965  
[www.usuhs.mil/csts/](http://www.usuhs.mil/csts/) | [www.centerforthestudyoftraumaticstress.org](http://www.centerforthestudyoftraumaticstress.org)