SPECIAL FOCUS

The H1N1 Crisis: A Case Study of the Integration of Mental and Behavioral Health in Public Health Crises

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ABSTRACT

In substantial numbers of affected populations, disasters adversely affect well-being and influence the development of emotional problems and dysfunctional behaviors. Nowhere is the integration of mental and behavioral health into broader public health and medical preparedness and response activities more crucial than in disasters such as the 2009-2010 H1N1 influenza pandemic. The National Biodefense Science Board, recognizing that the mental and behavioral health responses to H1N1 were vital to preserving safety and health for the country, requested that the Disaster Mental Health Subcommittee recommend actions for public health officials to prevent and mitigate adverse behavioral health outcomes during the H1N1 pandemic. The subcommittee's recommendations emphasized vulnerable populations and concentrated on interventions, education and training, and communication and messaging. The subcommittee's H1N1 activities and recommendations provide an approach and template for identifying and addressing future efforts related to newly emerging public health and medical emergencies. The many emotional and behavioral health implications of the crisis and the importance of psychological factors in determining the behavior of members of the public argue for a programmatic integration of behavioral health and science expertise in a comprehensive public health response.

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Key Words: communication and messaging, education and training, flu, intervention, mental and behavioral health, pandemic, vulnerable populations

The National Biodefense Science Board (NBSB) was created under the authority of the Pandemic and All-Hazards Preparedness Act,[1] which was signed into law on December 19, 2006. The NBSB was chartered to provide expert advice and guidance to the secretary of the US Department of Health and Human Services (HHS) on scientific, technical, and other matters of special interest to HHS regarding current and future chemical, biological, nuclear, and radiological agents, whether naturally occurring, accidental, or deliberate. As needed, the NBSB also provides advice and guidance to the secretary of HHS and/or the Office of the Assistant Secretary for Preparedness and Response (ASPR) on other matters related to public health emergency preparedness and response.[2]

The Disaster Mental Health Subcommittee, directed by Homeland Security Presidential Directive-21 (HSPD-21),[3] was established under the NBSB, and was charged with submitting recommendations to the NBSB for protecting, preserving, and restoring individual and community mental health in catastrophic health event settings, including pre-, intra-, and postevent education, messaging, and interventions.

SUBCOMMITTEE REPORTS

The subcommittee has produced two distinct but related reports. Addressing the initial charge, the subcommittee submitted its first report, *Disaster Mental Health Recommendations*[4] (recommendations report), to the NBSB on November 18, 2008. This report advanced a set of eight recommendations related to interventions, education and training, and communication and messaging, which the NBSB approved and submitted to the secretary of HHS.[5]

Throughout its work, the subcommittee has grappled with the importance of integrating mental and behavioral health into broader public health and medical preparedness and response activities. Disasters can have enormous impact on the well-being of affected populations and can be associated with the development of emotional problems and dysfunctional behavioral responses. Those charged with managing the mental and behavioral effects of disasters are often not mental health specialists, making it crucial that such expertise be represented in the response team and integrated within the broader response. The need to integrate mental and behavioral health was recognized in the subcommittee's 2008 recommendations report.[4] In September 2009, the

HHS ASPR asked the NBSB to convene the subcommittee to assess HHS's progress in its efforts to better integrate mental and behavioral health into disaster and emergency preparedness and response activities. The subcommittee's second report, *Integration of Mental and Behavioral Health in Federal Disaster Preparedness, Response, and Recovery: Assessment and Recommendations*[6] (integration report), was presented to the NBSB on September 22, 2010, and is described in a companion paper in this issue.[7] The NBSB voted to adopt the five recommendations in the 2010 integration report, which focused on developing policy and ensuring that organizational and structural elements are in place to translate policy into action.[8]

THE SUBCOMMITTEE'S H1N1 ACTIVITIES

During the 2009-2010 H1N1 influenza pandemic, the HHS ASPR asked the NBSB (1) to deliver frequent briefings on the national pandemic preparedness and response efforts from experts in government, industry, and academe and from federal, state, and local officials; and (2) to provide insight on decision pathways and critical data needed to inform decision-making about H1N1 issues. Recognizing that mental and behavioral health aspects of the H1N1 response were vital to preserving safety and health for the country, the NBSB requested that the subcommittee recommend actions that public health officials should consider to prevent and mitigate adverse behavioral health outcomes during the crisis. Nowhere is integration more crucial than in public health emergencies like the H1N1 pandemic. Thus, the subcommittee had the opportunity to model the promotion of integration as part of preparedness and response activities for the H1N1 pandemic. The subcommittee's response provided an excellent example of why integration is needed and how it can be achieved. This report describes the subcommittee's H1N1 efforts as an illustration of an integrated approach to mental and behavioral health to guide future work in the face of newly emerging public health emergencies.

BACKGROUND: THE H1N1 CRISIS AND MENTAL AND BEHAVIORAL HEALTH CONCERNS

The H1N1 virus, which was first detected in the United States in April 2009,[9] eventually spread to 30 countries[10] before beginning to decline in January 2010.[9] The Centers for Disease Control and Prevention (CDC)[11] estimated that the pandemic claimed the lives of between 8870 and 18 300 individuals in the United States.

Major lessons from this pandemic identified the need for a vaccine and the importance of public health information about the virus and its potential consequences. With respect to the first concern, the United States lacked the capacity to develop, produce, and distribute a new vaccine in time to counter a fast-moving pandemic, thus reinforcing the need for federal investments in the processes, policies, and infrastructure required for vaccine production and distribution. The second lesson exemplified the fact that a safe vaccine and quick response do little good if large numbers of people fail to comply with public health directives.[12] Perhaps due to uncertainty about the value and safety of the H1N1 vaccine, Maurer and colleagues[13] found that despite widespread agreement about the seriousness of the pandemic, approximately 20% more US adults studied in March 2010 reported receiving the seasonal flu vaccine than the H1N1 vaccine. Some may have been confused that two vaccines were available that season and may have been unaware that they needed to take both. According to the CDC,[14] concerns about the vaccine among health care providers also limited efforts in vaccinating the health care workforce. Thus, investments that enhance public acceptance of vaccination may yield results in the form of reduced incidence and severity of the disease as well as enhanced pandemic preparedness.[12]

MENTAL AND BEHAVIORAL HEALTH CONCERNS AND CHALLENGES ASSOCIATED WITH THE H1N1 PANDEMIC

In the face of a public health emergency, mental and behavioral factors influence health and safety outcomes at both the individual and community level. For the individual, coping with multiple uncertainties can generate confusion and anxiety as well as health-risk behaviors such as increased smoking or drinking, drug misuse, recklessness, and unsafe work practices. Unchecked, anxiety can result in social consequences due to noncompliance with public health directives, a surge in demand for care, and complications in triage across health services and systems. Worried, anxious, and stressed responders and health care providers can contribute to problems in the response to emerging public health threats. The limited availability of antiviral medicine and vaccines, difficulties created by potential large-scale absenteeism of the workforce due to illness or to the implementation of community mitigation strategies, and problems implementing alternative arrangements for child care potentially complicate an environment threatened by a public health emergency.

Mental and behavioral health considerations associated with the H1N1 crisis emerged from concerns about (1) the severity of the virus and the availability of vaccines, medicines, and health care; (2) conflicting media reports on appropriate protective measures that led to confusion, loss of confidence, and noncompliance with health directives; and (3) potential workforce and child care issues resulting from widespread infection and disease-related absenteeism.[6] Challenges included the need to clarify conflicting information to motivate protective action such as adherence to public health recommendations that influence the success of emergency response strategies and public directives, the need to consider threats to the continuity of essential community services, and the appropriate use of health services.

THE SUBCOMMITTEE'S RECOMMENDATIONS PROMOTING THE INTEGRATION OF MENTAL AND BEHAVIORAL HEALTH IN H1N1 ACTIVITIES

In response to the NBSB's request to address the mental and behavioral health issues associated with the H1N1 crisis, the subcommittee considered actions that could be, and needed to be, implemented within the context of other health and pub-

lic health efforts. The subcommittee's recommendations to the NBSB were included in a November 2009 letter addressed to the secretary of HHS from the NBSB[8] and are detailed here.

- HHS should encourage state and local public health officials to invite their behavioral health authorities (both mental health and substance abuse) to discuss local efforts and plans; identify constituents, including high-risk and vulnerable populations; and develop steps they can take together.
- As part of the discussion between HHS and state and local public health and behavioral health officials, strategies should be developed to maintain calm at treatment sites such as flu clinics, primary care settings, and emergency departments to minimize stress for providers working at these locations. Ensuring sensitivity to mental and behavioral needs that emerge at vaccination sites is important. One strategy is to assign mental health staff to monitor and actively communicate with people in waiting areas and lines to provide a reassuring presence and convey that everyone will be cared for throughout the entire process, deliver basic and accurate information about what to expect when they receive treatment (simple handouts, if available), and identify and intervene with persons experiencing severe psychological distress.

The letter also noted that

- in the interest of providing swift, accessible education about behavioral health considerations during this crisis, the subcommittee—with the assistance of the Office of HHS ASPR—compiled a list of specific resources (including those related to death and bereavement) that pertain to behavioral health. This information was made available on HHS's flu.gov Web site.[15] The subcommittee has distributed this resource list to behavioral health professional associations and stakeholder groups across the country and to state public health authorities.

In a presentation to the NBSB on September 25, 2009, the subcommittee supplemented the discussion of mental and behavioral health issues in the H1N1 crisis and its recommendations. The subcommittee concentrated on the three general areas identified in HSPD-21[3] and in its 2008 recommendations report[4]: interventions, education and training, and communication and messaging. The recommendations also emphasized concerns about vulnerable populations.

Interventions

With respect to mental and behavioral health interventions, the subcommittee recommended focusing on interventions that address uncertainty, enhance resilience and coping, and foster adaptive behavior in dealing with messaging and community mitigation strategies as well as the disease itself. The subcommittee considered a number of strategies to achieve progress, including establishing the capacity for real-time consultation with mental and behavioral health specialists to provide technical assistance and guidance by creating a priority advisory team of experts. The subcommittee identified the need for field studies to monitor health, behavior, and unmet needs to tailor interventions to those who are likely to benefit and also underscored the need to create a mental health research base that could be facilitated by leveraging opportunities for field studies that integrate mental health concerns in existing data collection efforts.

EDUCATION AND TRAINING

Education and training recommendations, which also advanced an integrated approach, were addressed to leaders, responders, medical providers, mental health professionals, schools, and the general public. Training and education were seen as key to promoting the identification, development, and dissemination of (1) existing best-practice educational materials in the areas of disaster mental health; (2) materials for all hazards and public health emergencies; (3) information addressing the needs of individuals with pre-existing mental health problems; and (4) guidance on bereavement support.

The subcommittee anticipated that medical providers would welcome (1) information on disaster mental health effects and the needs of individuals with pre-existing mental problems; (2) guidance on providing psychological support and conducting mental health triage and referral; and (3) access to patient educational materials on death notification and bereavement support for children and families. The subcommittee advised that, because schools receive similar information, they partner with local or regional experts to offer in-service training and to identify, or develop, and disseminate educational material for parents. Finally, the subcommittee identified the need for public education related to mental and behavioral effects of disasters, service availability and referral, and bereavement.

Communication and Messaging

Prior to the advent of the H1N1 crisis, in its initial set of recommendations delivered in 2008, the subcommittee noted the vexing challenges associated with risk communication regarding invisible and novel agents such as radiation and infectious agents. Building on the recommendations in the area of communication and messaging in that report, the subcommittee advocated for the integration of mental and behavioral health within the broader public health arena, noting that communication is central to influencing individual and group behavior and that mental health experts can play a valuable role in crafting respectful, compassionate, understandable, and effective public health messages, especially for people experiencing high levels of stress.[4] The subcommittee urged attention to the needs of special populations in messaging.

The subcommittee recognized the importance of both the content and delivery of messages. With respect to content, the subcommittee suggested that messages anticipate issues that have high psychosocial impact, such as perceived scarcity of resources, varied implementation of federal guidance across state and local jurisdictions, and perceived fairness and equity. The subcommittee cautioned about terminology used in messages,

especially to limit the use of confusing or sensitizing jargon (eg, the use of "swine flu" might lead to unnecessary fear of pigs; vaccines for "novel" H1N1 might raise concerns that the vaccine was experimental or untested). Included as content should be a short explanation of why people were being asked to refrain from usual behavior and a description of appropriate alternative behaviors. Given the expertise regarding messaging among individuals at the CDC, HHS, and the US Environmental Protection Agency, the subcommittee chose not to propose or prepare draft language for messages that public health authorities should deliver. A briefing by these agencies, while not immediately actionable, would address an important educational need that is likely to persist.

With respect to the delivery of messages, the subcommittee recommended the expanded use of nontraditional communication. For ease of access, messages should be disseminated through a variety of audiovisual and electronic formats, including central government internet Web sites. Trusted community and faith-based leaders could be engaged effectively in helping deliver messages to promote protective health behaviors.

Vulnerable Populations

In all of its work, the subcommittee raised concerns for vulnerable populations such as children; older adults; pregnant women; those with chronic pre-existing or emerging medical, mental health, and addictive disorders; persons with disabilities; those living in institutional settings; the poor; people representing diverse cultures; and those with limited English proficiency. The subcommittee advocated for the integration of mental and behavioral health in preparedness, response, and recovery, in part because vulnerable groups may not be obvious and may not self-identify; they may reside in heterogeneous settings; and they may require support for other functions that result from disruption in services.

Planning for continuity of operations for individuals receiving care through state and local health, mental health, and substance abuse agencies and programs is essential in a public health crisis. Special attention to these individuals is needed because the presence of pre-existing and comorbid medical conditions may put them at higher risk for severe illness with the H1N1 infection and greater need for medical intervention. People receiving services in congregate settings (eg, nursing homes, shelters for the homeless) that are not well integrated into state and local health systems and those who lack adequate access to assessment, vaccination, and treatment may be at increased risk for a more rapid spread of the virus.

The subcommittee voiced special concerns for individuals with mental health and addictive disorders who may be at increased risk for adverse outcome due to (1) a higher prevalence of comorbid medical conditions that put them at greater risk for severe illness with the H1N1 infection and greater need for medical intervention; (2) limited access to health care systems and services; and (3) difficulty comprehending public health messages because of cognitive impairment. In addition to the potential increased need for medical care, these individuals are likely to have special needs related to independence, supervision, communication, and transportation. Furthermore, isolation and quarantine would have potentially drastic effects for some vulnerable populations including, for example, people with drug or alcohol addiction who rely on community support strategies for recovery. Thus, establishing alternative means for people to "connect" is an essential component of planning. Hotlines and interactive Web sites are potential mechanisms for delivering emotional support to these individuals and others.

CONCLUSIONS

The subcommittee's work on the emotional and behavioral needs associated with the H1N1 crisis provides a case study that illuminates the need for, and application of, an integrated approach to addressing mental and behavioral health issues across the broader range of public health preparedness and response activities. The many emotional and behavioral health implications of the crisis, and the importance of psychological factors in determining the behavior of members of the public, argue for a programmatic integration of behavioral health and science expertise in the design of a comprehensive public health response. This summary of the subcommittee's H1N1 activities and recommendations provides an approach and template for identifying and addressing future efforts related to public health and medical emergencies. A crucial consideration is the creation of mechanisms that allow for, and promote, the integration of mental and behavioral health in public health and clinical interventions, in the education and training of various professional and public constituencies, and in communication strategies and messaging, with special attention given to the needs of vulnerable populations.

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