

The Virtual Network Supporting the Front Lines: Addressing Emerging Behavioral Health Problems following the Tsunami of 2004

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The devastation wreaked by the 2004 tsunami in the Indian Ocean required extensive multinational and nongovernmental relief efforts to address the massive loss of infrastructure, people, and society. This article addresses approaches to behavioral incident management from a process perspective, through the lens of one official stateside channel of emergency operations. The process highlights the formation and connectivity of multidisciplinary teams that virtually supported the efforts of a seven-person, on-scene, behavioral health team aboard the USNS Mercy as part of Operation Unified Assistance in the Indian Ocean. Frontline health diplomacy and behavioral health relief efforts were greatly augmented by the virtual network of support from leading experts around the globe. Future disaster response and recovery efforts ought to build on the success of such virtual support networks, by planning for appropriate technology, expertise, and mutual aid partnerships.

Early Behavioral Health Incident Management Stateside

As part of an extensive array of public health services, the Centers for Disease Control and Prevention (CDC), part of the U.S. Department of Health and Human Services, set up a Responder Resilience and Mental Health Team as part of their incident management structure within a few days after the first deadly tsunami on the shores of the Indian Ocean on December 26, 2004. Composed of a dozen psychologists, psychiatrists, counselors, and other behavioral scientists, the CDC Responder Resilience and Mental Health Team made numerous contributions to the humanitarian relief efforts, including the following. (1) The team tailored online information and guidance for behavioral and mental health (<http://www.bt.cdc.gov/mentalhealth/>) to meet the needs of populations who might be traveling to, working in, or living in areas affected by the earthquake and tsunami, including travelers, humanitarian aid workers, health professionals, and visiting friends and relatives. (2) The team created and implemented a responder resilience program for deployed agency staff members (U.S. Public Health Service officers and U.S. Civil Service employees deployed from routine duty stations around the globe) and their families, including predeployment psychological hazard briefings (e.g., body han-

dling, mass casualties involving children, austere settings, civil unrest, and self-care strategies), rapid training aimed at cross-cultural sensitivity for travel to India, Sri Lanka, and Indonesia, support during deployment for personnel and families of those deployed, and postdeployment exit interviews to glean lessons. (3) The team coordinated with other U.S. government entities and nongovernmental organizations to assess psychosocial needs and mental health service capacity for affected countries and to provide technical assistance for assessment of the mental health needs of residents in refugee camps.

In the middle of January 2005, the CDC Responder Resilience and Mental Health Team was also asked to provide technical assistance related to the assessment and rapid triage of the behavioral health needs of refugee children in Thailand. A rapid behavioral health triage and incident management system, PsySTART,¹ was quickly adapted for tsunamis and subsequently used by the Royal Thailand Ministry of Health to inform projections of both the acute and long-term needs of affected Thai children. In addition, other available psychosocial assessment and clinical tools were reviewed in conjunction with the National Child Traumatic Stress Network (centers of excellence funded by the Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services), the National Center for Post-Traumatic Stress Disorder (part of the U.S. Veterans Administration), and the Antares Foundation, with recommendations being rapidly provided to the field assessment team in Thailand. Results from this effort are forthcoming.

As the complex humanitarian relief efforts continued, a new health and medical mission was planned, to operate from the USNS Mercy in the Indian Ocean and to be staffed by personnel from the U.S. Department of Defense (Navy), the U.S. Department of Health and Human Services (U.S. Public Health Service), and civilian medical professional volunteers (Project HOPE). A behavioral health team was assigned to this mission to provide direct and population-based health and medical services (see the article by Perez et al. in this issue). Given the extensive virtual network of governmental, academic, and practitioner expert partners in traumatic stress and disaster mental health, the CDC Responder Resilience and Mental Health Team contacted the U.S. Public Health Service commanding officer to assist in strategic planning for the behavioral health component of this emerging mission, on January 27, 2005, before the departure of the USNS Mercy. Key contacts for in-theater partners and critical strategy documents were shared electronically at that time, including the following: (1) the conceptual framework that U.S. Aid for International Development (USAID) was using to guide its psychosocial sector; (2) the psychosocial guiding

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principles developed with the U.N. Children's Emergency Fund (UNICEF); (3) the World Health Organization mental health plans and tsunami resource materials; and (4) the Sri Lankan national plan for psychosocial relief.

At that point, we established a working arrangement to coordinate our partners to support the behavioral health mission as it evolved upon arrival in Indonesia. Our main connection was via the Internet and occasional ship-to-shore teleconferences (8-hour time difference). As the relief effort continued, the World Health Organization Department of Mental Health and several ministries of health released reports and plans for meeting the unparalleled psychosocial needs of hundreds of thousands of affected people. One important activity of the Responder Resilience and Mental Health Team was rapid psychosocial information management, to inform USNS Mercy and CDC emergency operations command staff members about these psychosocial relief efforts. The report contained casualty estimates according to country (including a subheading about children), summaries of relief/humanitarian entity and USAID-supported nongovernmental psychosocial initiatives, and country-specific efforts and projected trajectories for affected populations. This situational overview was used to coordinate internal U.S. agency efforts and to optimize placement of U.S. behavioral response assets for coordination with local relief efforts.

Once it became clear that children were going to be the focus of population-based attention by the USNS Mercy behavioral health team, the Responder Resilience and Mental Health Team electronically provided a multitude of critical resource documents on traumatic exposure metrics (e.g., loss, injury, displacement, death, or violence) and tiered intervention manuals with intervention mapping strategies. To synthesize these materials, the available literature was surveyed (via PsychInfo and PubMed) and subject matter experts were consulted (e.g., in the case of issues related to child traumatic grief, the Center for Traumatic Stress, Allegheny General Hospital, National Child Traumatic Stress Network). A pool of potential "best practice" strategies for rapid triage, screening, psychoeducational materials, and manualized treatment interventions were reviewed and summarized, culminating in a report with suggested strategies for rapid triage, assessment, and evidence-based intervention. Actual tools, selected manualized interventions, and consultations with the academic developers of these tools were made available to the USNS Mercy behavioral health team in real time. Within hours after each electronic request by the behavioral team aboard the USNS Mercy, the CDC Responder Resilience and Mental Health Team compiled and coordinated input from an extensive knowledge network (enumerated below) to supply critical expert-reviewed, state-of-the-art, resource documents and tools as needed.

The Virtual Team

Psychosocial disaster recovery programs for children and children's service agencies were created for all relevant service and educational personnel, which directly affected the lives of all school-aged children in Aceh Province. A critical and innovative element of population-based behavioral health practice in this theater (Operation Unified Assistance; see the article by Perez et al. in this issue) was a conceptual change in what constituted the "team." Using telephony (satellite telephone and interna-

tional wireless/cellular telephone communications), teleconferencing, and the Internet (including real-time sharing of documents and data via wireless laptop and Internet devices on-station in Banda Aceh), what was originally thought of as the behavioral health team, meaning the seven USNS Mercy behavioral health personnel on the ground in Banda Aceh, was extended to include a wide international network of personnel who communicated across continents and time zones in real time.

Advanced digital communication and data-sharing technologies allowed a global network of multidisciplinary experts to inform personnel, to provide critical resources, to review drafts, and to revise products for timely intervention. To do this, an international collaboration was formed that included more than a dozen governmental and international agencies, including multinational governmental agencies (UNICEF and World Health Organization), national agencies (Australian Agency for International Development [AUSAID] and USAID, Office of Disaster Assistance), Aceh Indonesia Department of Education and Ministry of Health, U.S. Department of Health and Human Services (CDC and Substance Abuse and Mental Health Services Administration), U.S. Department of Veterans Affairs (National Center for Post-Traumatic Stress Disorder), U.S. Department of Defense (Navy, Army, and Uniformed Services University Center for the Study of Traumatic Stress), nongovernmental agencies (International Red Crescent), academic centers of excellence in the United States (Disaster Mental Health Institute of the University of South Dakota, National Center for Child Traumatic Stress, Terrorism and Disaster Branch, and Center for Traumatic Stress, Allegheny General Hospital, National Child Traumatic Stress Network) and in Indonesia (Mohammadiyah and Syahkuala Universities), and professional guild associations (American Psychiatric Association, Committee on Psychiatric Dimensions of Disaster, World Psychiatric Association affiliates, and American Psychological Association). Information and processes were shared from almost every continent on earth, novel program approaches were formulated, and collaborations were formed that exist to this writing.

Transformational Programs Using a Virtual Network through Communications and Digital Technologies

As Perez et al. stated in this issue: "We are an international team with a local presence. We are, in a very real sense, a local presence for an international team and knowledge trust, including many of the finest disaster recovery people around the world. Using digital and other technologies, we are in this together and will work together as a worldwide virtual team." In all probability, if the global team members and the technology to connect them had not been present, then the population-based programming would not have been possible. In the first test of the system, a detailed program proposal for phase I operations was requested from the Banda Aceh group, for approval within 72 hours after the request. The request for information and resources went out immediately around the world via electronic mail and, within 24 hours, information and program materials were received by agencies and individuals globally. Within 48 hours, the initial outline of phase I operations was sent out globally for comments and contributions. Within 72 hours, a

phase I operations training program was completed, presented, and approved for implementation. During this 3-day period, >1,000 pages of documentation were shared among governmental and nongovernmental agencies, academic institutions, think tanks, and international relief efforts globally.

Phase I programming was approved within 72 hours after the request, and implementation began immediately thereafter. Again, digital and information technologies allowed us to develop a novel program production process that we called a "program assembly line." However, this production process did not occur in isolation, and it was not a simple, linear, sequential process. The production process embodied a synergy of team efforts to build program components and to package them for delivery (i.e., developing program goals and objectives, mapping and distilling masses of information, and translating results to the proper language and presentation formats). This process maximized collaboration, saved time, and empowered the local instructors and program beneficiaries. We describe in some detail how technology and the international team were critical to this method's success.

The enthusiasm, intelligence, and coordination among the diverse organizations and people involved enhanced trust and efficiency of the working relationship with each program component produced. We promoted active collaboration, not passive acceptance, for the program's development, including team consensus on program goals, scope, and specifics (e.g., program length, days, times, content areas, and approaches). The consensus process began with the question, "If we could do anything, what would the program look like?" Taking that ideal, we then asked, "How can we do this?" We mobilized the network, both in Banda Aceh and internationally, to try to get as close to the ideal as possible. This we learned from AUSAID and UNICEF. Using technology to connect the global team was the only way it was possible, and the request went out via wireless Internet devices from the meeting itself.

The process also included content gathering (collecting as much information as possible as quickly as possible in the areas requested and then distilling that information to a usable set of reference materials from which to choose final products; 1,000 pages of information were exchanged in the 24 hours after the request, some of which were sent almost instantly back to the wireless Internet device from which the request was made), logistical and resource support (where, how, who, funding, mechanisms of support, travel, security, local transportation, and housing, completely managed by UNICEF and AUSAID), editorial/programmatic decisions (consensus collaboration on what content, from all that was received, would finally be used in the presentations), media preparation (taking the selected information and putting it into the proper format for participants), translation (translating the final training products, primarily from English, into Indonesian and placing them into the day's presentation curriculum and reference documentation), trainer preparation (reviewing materials with trainers and promoting input on the feasibility of contents and methods), and presentation (using local people as trainers and for program logistics; we supported and supervised as needed to empower the local people).

After completion of the second training program, further trust developed not only between the members of the international team but also in the effectiveness of the "Mercy model" assembly line approach. Before the departure of the phase I Operation Unified Assistance team from Banda Aceh, assistance in the development of the third training program was requested. The international team, minus the local presence of the Operation Unified Assistance team, continued to use the process and collaborated to develop training curricula. As the Operation Unified Assistance team had operated with the phase I development, so did the international team with that program. Team members immediately communicated their needs for content material to U.S. Public Health Service personnel directly in the United States. The content material was assembled and sent via electronic mail to the Banda Aceh team members, who then delivered the program within 5 days.

Results

The program contained a comprehensive set of modules providing >80 contact hours and covering 85 content areas. The behavioral health intervention program directly reached ~100 child-service staff members (all governmental and most nongovernmental staff members) involved in relief efforts for >200,000 children throughout Aceh Province in Indonesia. In addition, 1,200 of the surviving teachers in Aceh Province received this training, which included methods for schools to create and to deliver ongoing training and education that anticipated likely changes in staff size and composition. The modules and instructional approaches were constructed to build or to enhance local capacity to address existing and/or emerging critical behavioral health needs among the child clients and the staff members providing service. In addition to the programs themselves, methods for program development and delivery were shared, to allow people in Aceh Province to develop their own programs independent of any outside assistance.

At this writing, ongoing communication continues between the international team members, on a programmatic and personal supportive level. During the first 6 months after the disaster, specific requests were sent through electronic mail for programmatic information on particular topics related to ongoing program development. Over time, the requests for content material decreased as the Banda Aceh team developed a more-robust armamentarium of capabilities; however, the relationships between team members endured. The team that assembled developed very quickly and intensely during a time of enormous devastation and evolved into an ongoing, self-supporting system. This support system continues through the technology that supported its development, with hopes and expectations of meeting again face to face.

Conclusions

To our knowledge, this is the first time instant global communications and data-sharing capabilities were extended to large-scale, population-based, behavioral health, disaster recovery

efforts. This strategy enabled a very small team on the ground to expand into a robust, global, virtual team with, literally, the press of a button. This was not exclusive to U.S. personnel in the Banda Aceh relief environment, but our experience represents how other relief efforts were similarly supported by new technologies and resulting capabilities. It is our firm recommendation that future planning and operations include the technologies, strategies, and recognition that promote the involvement of

appropriate expert networks for real-time consultation as standard operating procedures.

Reference

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Artwork from Children Aboard the Mercy