Chapter 39

POPULATION-BASED PROGRAMS AND HEALTH DIPLOMACY APPROACHES OF THE US PUBLIC HEALTH SERVICE

JON T. PEREZ, PHD*; JEFFREY COADY, PSYD†; KEVIN McGUINNESS, PHD‡; AND MERRITT SCHREIBER, PHD§

*Captain, Scientist Corps, US Public Health Service; Team Leader, US Public Health Service Disaster Mental Health Team II, Department of Health and Human Services, 801 Thompson Avenue, Suite 300, Rockville, Maryland 20852

†Commander, Scientist Corps, US Public Health Service; Deputy Team Leader, US Public Health Service Disaster Mental Health Team II, Department of Health and Human Services, 233 North Michigan Avenue, Suite 600, Chicago, Illinois 60601

‡Captain, Scientist Corps, US Public Health Service; Director and Medical Psychologist, HRSA/BCRS National Health Service Corps, Ready Responder Program, Department of Health and Human Services, c/o La Clinica de Familia, 510 East Lisa Drive, Chaparral, New Mexico 88081; formerly, Senior Clinical Scientist, Health and Human Services, US Department of Justice, Bureau of Prisons, Federal Correctional Institution La Tuna, New Mexico

§Captain, Scientist Corps, US Public Health Service (Inactive Reserve Corps); Senior Program Manager, Center for Public Health and Disasters, University of California at Los Angeles Center for the Health Sciences, 1145 Gayley Avenue, Suite 304, Los Angeles, California 90024; Operations Lead, USPHS Mental Health Team II

Go to the people
Live with them
Learn from them
Care about them

Start with what they know
Build with what they have
But with the best leaders
When the work is done
The task accomplished
The people will say
"We have done this ourselves"

—Lao Tzu (700 BC)[1]

INTRODUCTION

The Commissioned Corps (Corps) of the US Public Health Service (USPHS) is an all-officer corps of approximately 6,000 members.[2] The Corps is capable of providing highly trained and mobile healthcare professionals to carry out programs that promote the health of the nation and, when needed, furnish health services and expertise in times of war or other national or international emergencies.

As demonstrated in its healthcare relief response to the Indian Ocean tsunami of December 26, 2004, the Corps provided distinct leadership approaches and methodologies that proved useful to that extraordinary international effort. Several of the key leadership precepts and approaches are now known as the "*Mercy* model" and constitute an important guide for USPHS health diplomacy efforts worldwide.[3]

THE INDIAN OCEAN TSUNAMI AND RELIEF EFFORTS

The Indian Ocean tsunami, also known as the "Sumatra tsunami," was the result of a massive earthquake, with a magnitude of at least 9.0 on the Richter scale, that occurred when the India tectonic plate subducted beneath the Burma plate.[4] Waves reached a height of 35.5 feet, and killed an estimated 230,000 people, 168,000 in Indonesia alone. (When earthquakes occur in landmasses above sea level, their initial effects are felt immediately and precautions can be taken in anticipation of follow-on tremors and structural collapse. Attachment 1 to this chapter provides a description of land-based earthquake disaster relief.)

Operation Unified Assistance (OUA) was an unprecedented undertaking to support victims of a massive natural disaster. The USNS *Mercy* sailed from San Diego on January 5, 2005, less than 3 days after being ordered to assist, and arrived in Banda Aceh, Indonesia, on February 6, 2005. From that point through to its departure on April 29, 2005, the ship and crew treated over 17,500 patients in the region. It brought together an untested capability (the USNS *Mercy* as a humanitarian service platform) and an untested mix of uniformed and civilian personnel to accomplish an overarching humanitarian mission that was not clearly defined until well into its eventual execution.

The OUA teams were sent into an area of extraordinary human devastation where there was active military conflict, devastated healthcare infrastructure, and an uncoordinated mix of governmental and nongovernmental organization (NGO) programs with widely divergent approaches and capabilities. Logistics of ship-to-shore lift, security, unknown length of time on station, limited understanding of and commitment to population-based programs by key leadership personnel, and initial relief agency reticence to accept US help, limited preliminary activities and very nearly stopped them completely. Ashore, the *Mercy* team was met with suspicion by many who questioned the sincerity of the overall US commitment to tsunami relief and, in particular, the team's commitment. It was in this environment that the eventual collaborations, programs, and successes were achieved, and it was the *Mercy* leadership approach that helped build them.

Although not especially unique or groundbreaking in many of its individual specifics, the overall intervention approach developed and implemented by the USPHS behavioral healthcare team was seen as a marked advance for behavioral health programming in multinational relief efforts. The people and agencies of Aceh Province embraced this approach, as well as

the larger international relief community supporting them. It significantly altered the view of the United States' ability to work in an integrated, international behavioral health relief effort.

At its most basic level, the *Mercy* model represents a public health leadership approach, not a program or a product. That approach is composed of specific knowledge, attitude, and collaboration precepts that guide efforts to create teams and programs. Relief personnel face operational environments that vary in nature, severity, and complexity. The basic *Mercy* approaches have proven themselves to help relief leadership maximize what resources are available, and mobilize systems far larger than the coordinating team itself to create large-scale, population-based recovery programs.

The precepts are highly adaptable to international and domestic systems. In its tsunami relief form, the *Mercy* model was composed of 21 general precepts that fostered collaborative interaction among diverse organizations and stakeholders (detailed in Attachment 2 to this chapter). Most recently, virtually the same precept set was used with substantial success in the Hurricanes Katrina/Rita (in 2005) response where it was shared with the Louisiana Department of Education and ultimately directly contributed to the successful development of a psychosocial recovery program for over 200,000 displaced schoolchildren.[5]

The *Mercy* model precepts have been applied most effectively to facilitate delivery of population-based behavioral health interventions. However, they have also been adapted for use across an array of disciplines from biomedical engineering to primary care medicine. Given the scope of hazards that the United States faces in the world as a nation, in which very large numbers of the population may develop enduring mental health consequences as a result of disaster exposure,[6] *Mercy* model percepts are particularly needed.

THE *MERCY* MODEL: "LEADERSHIP OF THE OPEN HAND"

The *Mercy* model is designed to effect large-scale, coordinated change in damaged or fragmented systems following major disasters by providing collaborative leadership to help the system regain operational status. The model is called "Leadership of the Open Hand," in deference to the Lao Tzu quotation that opened this chapter. It details the means and methods to work in a response environment where US agencies are neither completely in control nor have the resources to effect unilateral action or mission accomplishment. Instead, the strategy in such cases is to increase response impact through effectively harnessing collaborations with other agencies, forces, NGOs, international organizations, and even nations.

This is accomplished by

- addressing, first and foremost, public health and system-level interventions;
- providing essential health system leadership support for damaged systems during highly chaotic and difficult times;
- seeking and promoting collaborative approaches, not unilateral action;
- assessing system needs rapidly and determining the best placement of limited resources to maximize system effects;
- partnering with the most promising and resourceful agencies;
- providing partner agencies with capacity-building tools;
- working with partner agencies from program conception through implementation; and
- accomplishing it all in time frames measured in days, not weeks or months.

In Indonesia, the model was utilized to help coordinate relief agencies and the Indonesian government's disaster relief effort to provide specific infrastructure and program support for children's services. Through this effort an array of population-based services was created in the posttsunami relief environment that was eventually delivered to all 200,000 school-aged children in Aceh Province. Equally important, the approach taught local agencies methods to independently develop and deliver their own programs without any outside support.

In the post-Katrina recovery efforts, the *Mercy* model was used to help the Louisiana Department of Education regain its operational footing and create a statewide system of behavioral health interventions for students affected by the hurricane. In Indonesia, the process, from initial conception to implementation, was completed in just 9 days. In Louisiana, it took 12 days. There were seven officers directly assigned to population-based operations in Indonesia; there were four officers assigned to the Louisiana Department of Education. This chapter will focus more specifically on the Indonesian mission, but the reader should understand it represents many missions with similar leadership challenges.

Far from a closed fist, "my-way-or-the-highway" leadership approach, the *Mercy* approach is open-handed leadership, designed to help pull people and systems back up and forward following major

catastrophic disruption. It utilizes the leadership approaches described in the WICS ("wisdom, intelligence, and creativity, synthesized") model by Robert Sternberg,[7] to achieve this collaborative partnership for the common good. Future relief situations will have many of the associated leadership challenges present in the OUA response, as well as others not even imagined here. Thus, understanding the transitions from chaos to clarity, and suspicion to collaboration are critical to understanding the ultimate mission successes. In particular, decisions were made and approaches were adopted at several key junctures that, if carried out differently, would have resulted in mission failure. For future planning, it is important to fully appreciate how fragile the situations were and how easily the missions could have failed. It is the team's belief that the leadership approach embodied in the open-handed *Mercy* model precepts contributed to these significant transitions and was critical to the ultimate successes of the international team missions.

Another important aspect of the leadership approach involved the OUA team aboard the USNS *Mercy* and around the world working to support novel programming outside of their traditional operating spectrum. International relief organizations, many of which had never worked with or were suspicious of US uniformed services support, were also of critical importance because these organizations provided many of the resources that were crucial to successful program implementation. Also, research and program institutes from around the world provided significant amounts of information, often in real-time, via email and other digital technologies in support of the team's training efforts, despite the significant time zone differences.[8]

In a related Department of Health and Human Services effort, a team at the Centers for Disease Control and Prevention Emergency Operations Center facilitated the use of the novel, rapid mental health triage platform—PsySTART (psychological simple triage and rapid treatment)—that enabled use of a population-based rapid triage platform in an affected area. This work began empirical validation of this non–symptom-based approach to rapidly determine levels of risk in mass casualty events. When the results of the PsySTART triage "tags" are aggregated to form population estimates, they can be used as a common metric for *Mercy* model population approaches using evidence-based risk indicators.[9,10] The *Mercy* model and the PsySTART rapid mental health triage system are now key competencies of a training initiative for new federal disaster response assets—the USPHS Disaster Response Teams—created after Hurricane Katrina.

The *Mercy* model approach did not begin with all of these pieces in place. How the people and processes were assessed, understood, and guided forward is the real leadership success story of the *Mercy* effort by the USPHS team; this effort continues to evolve.

THE USPHS *MERCY* MISSION: "GO WEST AND DO GOOD THINGS"

The overall mission order was to "go west and do good things." It meant that actual operations would be developed and based, in no small measure, upon what was encountered when the USNS *Mercy* arrived on station. Mission definition depended to a large degree upon the resources already in place in the region, the priority needs of the local Indonesian people, and resources that the USNS *Mercy* and her crew could bring to bear in the relief effort. Mission clarity was only that which could be conjured or inferred, not what was provided, nor even what could be seen or verified until arrival in the area of operations.

The USPHS team took the mission order as a mandate to develop its own mission contingencies and integrate them with the larger Navy mission as it developed, sometimes minute by minute. To meet its own developing mission demands, the USPHS team prepared several operational capabilities. Contingency planning included direct clinical services for the ship's personnel and those patients who would be received on station; environmental health missions; biomedical engineering missions; and population-based behavioral health missions. The first three mission capabilities were immediately discernible and clearly understood. The last was not. Among the USPHS team there developed a desire to take services "beyond the boat," meaning going to shore-based operations and moving beyond direct-service provision to include large-scale, population-based public health missions.[11]

While the USPHS team brought direct clinical service capability, it also brought unique expertise to help local agencies create service programs in relief environments, methods to work collaboratively with a wide range of relief operations, and the ability to integrate seamlessly with operating relief systems and structures already in place. However, these capabilities were seen as novel by much of the leadership, and even useless by some of them. Indispensable support for these capabilities came from Rear Admiral William C Vanderwagen, commander of the USPHS team and the Secretary of Health and Human Services representative on station, and Captain DM Llewellyn, the medical

treatment facility (MTF) commander. Early on, they communicated their support for the population-based approaches[12] recommended by the USPHS behavioral health team. Trusting the team's expertise and advice, they enabled the mission to go forward despite the fact that such methods were outside the normal operating spectrum of the MTF and untested in previous deployments. Rear Admiral Vanderwagen, in particular, saw the approach as critical to any large-scale response, directed the team to develop it, and advocated for it across the leadership lanes from Washington, DC, to the MTF itself.

Initial Assessments and Collaboration

USPHS personnel were on the first helicopter in to Banda Aceh from USNS *Mercy* and began assessment and collaboration efforts at that time. The operational assessment and initial collaboration efforts for population-based services lasted 5 days. During that time, individual meetings were scheduled with over a dozen NGO and governmental agencies engaged in psychosocial recovery activities, local schools were visited to determine the needs as expressed directly by local school teachers and head masters, and USPHS team members participated in various meetings with representatives of over 50 NGOs and agencies that provided behavioral health services in the province.

Very quickly the assessment indicated:

1. The needs were beyond anything any of the team members had ever seen before.
2. There were over 200 agencies/forces/NGOs operating in the theater with widely varying capabilities, only limited coordination, and very divergent approaches to relief efforts.
3. The USPHS team would be in this immediate area of operation for an unknown, but presumably very short, length of time, possibly only days.
4. Of 17 USPHS officers initially available for shore-based operations, only seven officers were available for population-based behavioral health services; the remaining personnel were needed for other healthcare missions and to provide direct services on the ship.

The behavioral health personnel, unlike other capabilities shipboard, faced an ambiguous situation and three key initial decision points, only the first two of which were under their direct control:

1. What can reasonably be done in days, not weeks, given the enormity of need?
2. What should be offered and to whom?
3. Will anyone want what the behavioral health personnel have to offer?

The behavioral health climate was sensitive, particularly for the USPHS team members from the *Mercy*. The prevailing feeling among the NGOs in Banda Aceh was that the USNS *Mercy* was late to the response, would be there only long enough to take part in a public relations event, and would probably look to "take over" as opposed to "work with" programs already in place. It was also expected that western psychological/psychiatric interventions would be used with little regard for deeply held spiritual and traditional belief systems that may not be congruent with them. This was not an open or initially welcoming operational environment, but one that viewed *Mercy* personnel and their offers with cool distance.

It was also a situation that began to change with a critical exchange that has since become known by international colleagues of the US team as "the diplomatic pants incident." In this particular incident, the open-hand leadership approach was demonstrated, with particular attention paid to mission success, not personal success.

The United Nations Children's Fund (UNICEF) and the Australian Agency for International Development (AusAID) were the organizations with which the *Mercy* personnel saw the most potential for collaboration and at-scale impact for programs. Highly professional, experienced, and respected throughout the relief area, they had resources, infrastructure, and personnel, and were there for the long haul. Three meetings were held with various personnel from those agencies over the course of the first few days after arrival. The first two meetings appeared to be very encouraging, with many ideas shared and possibilities for collaborations discussed. At the third meeting, however, there was a distinctly disquieting change, particularly with respect to UNICEF response to the USPHS personnel.

The USPHS team was confronted with an impromptu, but mission-critical, decision point. It proved to be a moment of leadership awareness that substantially changed the overall behavioral health mission outcome. In retrospect, the US team's recognition of the potentially course-changing implications of subtle changes in vocal tone, physical posture, and interpersonal distance proved to be as important to mission success as the actual words exchanged between team members and their international partners. The following case study demonstrates the importance of follow-up conversations in these circumstances.

Case Study 39-1: After the formal meeting completed,

when just a couple of the *Mercy* USPHS team members were together, the obvious question that hung in the air was asked:

Did the USPHS team do something to offend?

The UNICEF colleagues politely replied, "Why are you wearing uniforms today?"

It was explained that the team members were uniformed officers of the United States Public Health Service. The behavioral health team leader went on to explain that although the team had worn civilian attire to previous meetings, they were wearing uniforms on this particular day because the team leader's only pair of civilian pants had been permanently stained with helicopter hydraulic fluid the day before and, not wanting to be disrespectful, he opted to wear a clean uniform instead of the soiled civilian pants. The rest of the team had followed suit. The answer to the question that followed was a bit more complicated, however.

"Are you military?"

It was explained that, although the team was assigned to the US Navy for this humanitarian mission, as USPHS officers, they were part of the US Department of Health and Human Services and generally prefer to fight disease, not people.

The UNICEF partners responded with smiles of relief.

"We would much prefer the dirty pants," they commented, "as it is against our [UNICEF] charter to work with military forces unless it is absolutely necessary."

"Then dirty pants it shall be."

After this exchange, the tension evaporated. Assurances were made, collaborations sealed, and operations began in earnest. Understanding that they had become a symbol of the collaboration, the USPHS team leader wore the "diplomatic" (ie, dirty) pants ashore for the remainder of the mission.

Good-natured humor and self-effacement were embodied in such behaviors and approaches, and, although seemingly secondary to specific program delivery, it was exactly these processes that created the interpersonal environment that allowed the programs to be delivered at all. For the US personnel to be seen by the international relief community, and the Achenese in particular with the fears they associated with US involvement, as approachable and capable of personal humility and self-effacement was critical to their accepting US content and programmatic support. The importance of these approaches and processes cannot be overstated. The United States was seen with human faces and supportive, helping hands through these approaches, which spanned the breadth of services provided by the entire MTF. Those friends with expertise, in the case of the population-based programs, were readily welcomed when expertise absent such personal connection was not.

Program Development and Delivery

The next critical leadership decision was to *integrate* the USPHS behavioral health team of seven into the initial UNICEF and AusAID planning team of five, to create a single management team. That team, in turn, chose to develop programs and train a cadre of individuals to deliver psychosocial interventions for school-aged children in every school in the province.

The collective plan called for the USPHS team, within 1 week's time to:

- develop a training curriculum;
- train the UNICEF/AusAID staff in its delivery;
- prepare and distribute associated documentation; and
- administer to 45 governmental and NGO staff the final training program of 40 contact hours covering 43 content areas.

The Indonesian colleagues were unsure whether the USPHS team was capable of developing and delivering such a program within such a short time frame, especially with Indonesian interpreters. The team provided assurances that it could do so. The program would create a network of trainers to carry on long after the *Mercy* mission was completed, and it could be delivered in a short period of time, although some thought privately that it was an impossibly short period of time.

The first critical step in the development of the program involved collecting, evaluating, and preparing the necessary materials. Using e-mail, the Internet, and a large international virtual team from academic and NGO organizations, the US team relied almost completely on the information provided to it electronically from these sources around the world. That information was received within 24 hours of the first request and amounted to over 500 pages of training and intervention documentation.

The next critical decision point came during a planning meeting when the USPHS/UNICEF/AusAID/Aceh team was evaluating training information. Originally, the mission concept called for USPHS personnel to provide the training with Indonesian translation. The Indonesian members of the planning team, however, included professors of psychology and other human-service subject-matter experts. Most of these personnel had advanced degrees, were residents in the province, and were highly capable trainers and facilitators. The conversation during the meeting suggested that the quantity of training information might need to be cut by half to provide adequate time for translation during the presentations. The specter of such a loss of information yielded a substantial change in approach: what if the collective international team gave the Indonesian members all the information,

partnered with them as they created their own training program, and mentored them as they delivered it in Indonesian to Indonesians?

This was perhaps the most important and powerful shift in approach throughout the entire mission. The "Black Wave" devastated the people of Aceh. Lives, property, infrastructure, and ways of life were destroyed. Following the physical destruction, community confidence was also damaged as armies of personnel and foreign assistance descended upon the province and began "doing things for" the victims rather than "doing things with" the community. Until members of the US team took an important second look at their own approach, they were engaged in the very same damaging process.

With this new strategy, the long-term power of the program began to grow and the US team members were accepted as colleagues, not outside "experts." The new approach provided a vehicle for the Indonesian people to take charge of their own and their province's psychosocial recovery, beginning with their children. The shift put the Indonesians on the team in charge of everything. The international team—meaning everyone else—became their support team. The US team members were now seen as trustworthy, and thus transitioned from intruders to welcome advisors and collaborators.

Two days were added to the preparation time to allow for this change in approach. Two more Indonesian facilitators were contracted by UNICEF to assist. This international group then began developing what eventually became known as the "assembly line" for choosing program content and having it immediately translated and packaged for delivery. The entire training program content was developed in this manner in less than 5 days.

The most important aspect of the health diplomacy model that emerged from this mission was that the model facilitated a diverse group of people, from all over the world, to become an integrated team. It was promoted, in no small measure, as a direct result of this change in approach. Consensus became the standard for program development—roles were created and people filled them based on program needs, not necessarily professional credentials, and those team members who would soon leave stepped back and supported those who would remain.

Final Preparations and One Last Hurdle

When the second *Mercy* precept was formulated ("We are not 'the pros from Dover'"),[13] it was with the USPHS team members in mind. It was modified to include "We are not the pros from Djakarta" after the final Indonesian members of the team arrived from the capital and the whole training curriculum came close to unraveling 2 days before it was to be delivered. One of the new members wanted to try a very different approach to several aspects of training. The Indonesian members met with the international team for advice about how to proceed. They then met as a team to address the concerns, educate the new members about why the program was as it was, and welcomed them into the process. It worked; consensus was achieved, only minor and very beneficial adjustments were made, and the program was finalized for delivery with everyone's roles clearly delineated and agreed upon. Most importantly, the team integrated new membership, incorporated new ideas without losing the overall approach, and did it without altering the consensus approach that was the hallmark of the entire process.

The trainings themselves were the culmination of a short but intense period of development filled with deep emotion and renewed spirit of hope for the training staff and the approximately 90 people from throughout Aceh Province who would themselves become trainers. The training brought together a wide range of both governmental and NGO personnel from across northern Sumatra, gave them detailed content and a network of people upon whom they could rely to help them, and instilled confidence that they could deliver this training themselves upon their return home. As of this writing, the programs are still operating and the Abidin University Hospital in Banda Aceh has dedicated space for the programs there to support their ongoing operation.

SUMMARY

The program described in this chapter developed from a USPHS leadership approach. It was then modified into an international collaboration among several agencies in the middle of the chaos of the relief effort, and transitioned from a program given by outside "experts" to one ultimately formulated and delivered by the people of Indonesia themselves. The development team included many who were directly affected and suffered significant personal losses, while others knew only what they saw reported via news media prior to their arrival. Several team members had no previous relief experience, although others had years of experience in such efforts. Several of the relief agencies represented had never before worked together, nor worked directly with the US Navy or USPHS; the initial levels of suspicion about motives and capabilities in

the response were high. That they all ultimately came together in a spirit of common cause is a testament to the best of what is possible in times of great human need, and when personal interests are subsumed to support the greater good and provide large-scale successes for others.

The success of this program also demonstrates the significant benefits that can result when quiet, but informed leadership principles are understood and acted upon. Absent the open-handed leadership approach, there would have been no collaboration and no subsequent program. Future missions and their commanders will face similar chaos and unknowns, but some of the precepts developed in the *Mercy* model may prove useful in developing the clarity and collaborations necessary to effect change at-scale in health systems following major conflagration or catastrophic emergencies. Attachment 2 to this chapter contains these precepts, exactly as they were written by the USPHS team during relief efforts and as reported in their after-action report. Emerging operational approaches such as the PsySTART rapid mental health triage platform can also be used as tools to further these aims. They are particularly effective when the relief and response lanes are shared among agencies and forces, rather than wholly "owned" by a particular command structure. Because these cases make up the vast majority of international relief efforts, the *Mercy* approaches appear to maximize effectiveness via better collaboration where command and control would be either counterproductive or rejected outright by the other agencies involved in the response.

REFERENCES

1. Tzu L, Wieger L, Bryce D. *Tao-Te-Ching: The Classic Chinese Work in English Translation*. New York, NY: Random House; 2005.

2. US Department of Health and Human Services. What is the commissioned corps? United States Public Health Service Web site. Available at: http://www.usphs.gov/aboutus/questions.aspx#whatis. Accessed August 18, 2010.

3. Perez J, Coady J, DeJesus E, McGuinness K, Bondan, S. Operation Unified Assistance population-based programs: US Public Health Service and international team. *Mil Med.* 2006;1:S53–S58.

4. Magnitude 9.1–off the west coast of northern Sumatra 2004 December 26 00:58:53: UTC. US Geological Survey Web site. Available at: http://earthquake.usgs.gov/earthquakes/eqinthenews/2004/usslav/#summary. Accessed September 30, 2010.

5. McGuinness KM, Coady JA, Perez JT, Williams NC, Mcintyre DJ, Schreiber MD. Public mental health: the role of population-based and macrosystems interventions in the wake of Hurricane Katrina. *J Prof Psychol: Res Pract*. 2008;39(1):58–65.

6. Norris F, Murphy A, Baker C, Perilla J. Severity, timing, and duration of reactions to trauma in the population: an example from Mexico. *Biol Psychiatry*. 2003;53(9):769–778.

7. Sternberg R. A systems model of leadership: WICS. *Am Psychol*. 2007:62(1):34–42.

8. Reissman D, Schreiber M, Klomp R, et al. The virtual network supporting the front lines: addressing emerging behavioral health problems following the tsunami of 2004. *Mil Med.* 2006;1:S40–S43.

9. Thienkrua W, Cardozo BL, Chakkrab M, et al. Thailand Post-Tsunami Mental Health Study Group. Symptoms of posttraumatic stress disorder and depression among children in tsunami-affected areas in southern Thailand. *JAMA.* 2006;296:549–559.

10. Schreiber M. Learning from 9/11: toward a national model for children and families in mass casualty terrorism. In: Daneli Y, Dingman R, eds. *On the Ground After September 11: Mental Health Responses and Practical Knowledge Gained*. New York, NY: Haworth Press; 2005: 605–614.

11. Coady J, Perez J, Schreiber M. The way forward: innovations in disaster mental health. *Calif Psychol.* 2007;40(2):41–44.

12. Schreiber M, Gurwitch R, Coady J, Perez J, Wong, M. *Toward a National Model for Children and Families in Mass Casualty Events.* New York, NY: Springer Publishing; in press.

13. Hooker R. *M*A*S*H.* New York, NY: Simon & Schuster; 1969.

ATTACHMENT 1: EARTHQUAKE DISASTER RELIEF

Major earthquakes have the potential to be one of the most catastrophic natural disasters affecting humanity, as evidenced by the recent earthquakes in Bam, Iran, Pakistan, and Peru. Earthquakes of significant size set off a chain of events that significantly affects the public health and medical infrastructures of the region. Accelerated urbanization in seismically active parts of the world dramatically increases the vulnerability of these regions. Worldwide, more than a million earthquakes occur each year, with nine countries accounting for 80% of earthquake fatalities (China, Japan, Pakistan, Chile, Russia, Turkey, Peru, Iran, and Italy[1–6]). In the United States, the state experiencing the most earthquakes is Alaska.[1,2]

Numerous factors influence earthquake mortality and morbidity, including natural factors, structural factors, and individual factors. Aftershocks are a particular concern and may occur for a prolonged period of time. For example, during the Northridge, California, earthquake more than 14,000 aftershocks occurred in the region over the next 5 years.[3] Landslides and mudflows after earthquakes account for significant morbidity and mortality. Hazardous materials (chemical, biological, radioactive) are an increasing risk after earthquakes due to accelerated urbanization. Following the Loma Prieta earthquake in California in 1989, toxic materials were responsible for about 20% of after-earthquake injuries. Flooding from dams with structural damage and fires continue to be additional causes of mortality and morbidity after earthquakes.[7–9]

Structural factors affecting injury or death rates include trauma caused by building collapse. In fact, approximately 75% of earthquake fatalities are caused by collapse of buildings that were poorly constructed or not earthquake resistant.[10–12] Individual risk factors include age, health, and emotional stability. Demographic factors associated with increased risk for death and injury are persons over the age of 60, children between 5 and 9 years of age, and chronically ill persons.[12] The increased vulnerability of these groups is because of lack of mobility, exacerbation of underlying diseases, and inability to withstand major traumatic injury. Entrapment, the occupants' locations within a building, their behavior during the earthquake, and time until rescue, constitute the factors affecting mortality and morbidity.

Logistical support is an essential element of disaster relief and an area in which the military excels. The mass casualty response to earthquakes includes four essential elements of disaster medical response: (1) search and rescue, (2) triage and initial stabilization, (3) definitive medical care, and (4) evacuation.[13] The requirements for search and rescue and definitive care, and the need for outside assistance from military and civilian teams, are significantly increased in earthquake disasters compared to other natural disasters because of the severity of wide-spread damage and the complexity of injuries.

Psychological trauma and other adverse psychological sequelae are frequently the side effects of earthquake disasters for a number of reasons. Earthquakes occur with little or no warning compared to hurricanes (several days of storm tracking) or even tornadoes (often with several hours of meteorological information). This lack of warning deprives victims of time to take psychological and physical protective action, and exacerbates a sense of loss of control over the destructive event. Earthquakes expose victims to serious threats to personal safety, increasing their vulnerability to future psychological symptoms. One of the important lessons learned in disaster medical response is the necessity to configure teams based on functional capacities, not professional titles. A capacity for mental health interventions is critical, and mental healthcare teams are now incorporated into most civilian and military disaster response teams in the United States.

Earthquakes are a major cause of the full spectrum of traumatic injuries, both physical and psychological, and frequently require outside medical and public health disaster assistance. Ultimately, disaster mitigation will be the most significant factor in decreasing mortality and morbidity from earthquakes.

Acknowledgment

This attachment was prepared by Susan Miller Briggs, MD, MPH, Associate Professor of Surgery, Harvard Medical School; Director, International Trauma and Disaster Institute, Massachusetts General Hospital, Boston, Massachusetts.

REFERENCES

1. Noji EK, ed. *The Public Health Consequences of Disasters*. New York, NY: Oxford University Press; 1997.

2. Hays WW. Perspectives on the international decade for natural education. *Earthquake Spectra*. 1990;6:125–143.

3. Prager EJ. *Furious Earth: The Science and Nature of Earthquakes, Volcanoes, and Tsunamis*. New York, NY: McGraw-Hill; 1999.

4. Perez E, Thompson P. Natural hazards: causes and effects. Lesson 2–earthquakes. *Prehosp Disaster Med*. 1994;9:260–271.

5. US Geological Survey. *Scenarios of Possible Earthquakes Affecting Major California Population Centers, With Estimates of Intensity and Ground Shaking*. Menlo Park, Calif: USGS; 1981. Open-File Report 81-115.

6. Blake P. *Peru Earthquake, May 31, 1970. Report of the CDC Epidemiologic Team*. Atlanta, Ga: Centers for Disease Control and Prevention; 1970.

7. Showalter PS, Myers MF. Natural disasters in the United States as release agents of oil, chemicals, or radiological materials between 1980–1989: analysis and recommendations. *Risk Anal*. 1994;14:169–182.

8. Durkin ME, Thiel CC, Schneider JE, et al. Injuries and the emergency medical response in the Loma Prieta earthquake. *Bull Seismological Soc Am*. 1991;81:2143–2166.

9. Hayes BE, Freeman C, Rubin JL, et al. Medical response to catastrophic events: California's planning and the Loma Prieta earthquake. *Ann Emeg Med*. 1992;21:368–474.

10. Colburn AW, Murakami HO, Ohta Y. *Factors Affecting Fatalities and Injury in Earthquakes. Engineering Seismology and Earthquake Disaster Prevention Planning*. Hokkaido, Japan: Hokkaido University; 1987. Internal Report.

11. EQE Engineering. *The October 17, 1989 Loma Prieta Earthquake: A Quick Look Report*. San Francisco, Calif: EQE Engineering; 1989.

12. Coburn AW, Spence RJS, Pomonis A. *Factors Determining Human Casualty Levels in Earthquakes: Mortality Prediction in Building Collapse*. Reston, Va: US Geological Survey; 1992.

13. Briggs SM, ed. *Advanced Disaster Medical Response Manual for Providers*. Boston, Mass: Harvard Medical International; 2003.

ATTACHMENT 2: THE *MERCY* MODEL

The *Mercy* (ship and concept) was an untested capability arriving at the site of an unprecedented event. Extraordinary devastation, great chaos, much need, little information about overall response, and, of equal importance, little information on the ground and among agencies there about us, who we were, and what we might do. We did not know ourselves what we might be capable of doing. There was fear, particularly among the international mental health community, that we were going to interfere or otherwise act unilaterally without cooperation or coordination. The international relief community, including our own US organizations, viewed us with suspicion. Western psychological methods were not widely understood, or greatly accepted, and our reputation—real or conjured—was that we would come in for a few days, see a limited number of patients (more to use as props for media opportunities than genuine assistance), get our pictures taken, congratulate ourselves, and then leave. As a team, we assumed this going in and swore we would do nothing of the sort. The *Mercy* model began with that promise. The precepts as they were formulated were:

1. "Go West and Do Good Things…" This was essentially the mission order until the ship arrived on station: our overarching precept was to promote the greater good, not our particular role in the effort.
2. We are not "the pros from Dover"—borrowing the line from the book M*A*S*H.[1] The principle here is collaboration, not independent action. Egos and personal ownership of information and approaches are checked at the helicopter door.
3. We are here as students of the people and culture we are here to assist, because the better we understand, the better we can serve.
4. We work for and with agencies ashore, not the other way around. We do not work independently, unless we have capabilities that are useful, support those that are already in place, or are desired by the agencies with whom we work.
5. For behavioral health, given limited time, personnel, and resources, we will focus on public health and population-based approaches to maximize program development, penetration, and effects. Responding to the area's behavioral health relief systems and infrastructure needs is our primary concern, not direct service. We are responding to a disaster of unprecedented proportions. We could limit our overall impact by only delivering direct services, or we could take our limited personnel resources and seek to maximize potential impact by working with systems programmatically. Somewhat novel, but not at all unprecedented.
6. Initial work will be assessing the mental health infrastructure, programming, agencies, and services, then developing relationships with agencies, not developing programs independent of them. The building of the relationships with other agencies is the most critical step in the entire process; without the relationship, there is no program. New relationships with agencies may be met with suspicion; we should approach this as an opportunity, not a threat.
7. Collaborative leadership, consensus approach: coordination not control, development not ownership, shine spotlight on others not ourselves, and collaboration among the team and the teams with whom we work. Seek consensus wherever possible and defer to others when conflict arises or differences threaten the process. Adopt local approach when such exists. Simple concepts, though extremely difficult to execute and should neither be overlooked nor undervalued.
8. We will not promise anything that we can't deliver, period.
9. Team members do what needs to be done regardless of position or professional background.
10. Promote respect for divergent people, professions, worldviews, and spiritual beliefs.
11. "Wisdomkeepers" must be sought and welcomed—language and cultural guidance are essential. We will learn as much as we teach.
12. International team formation is critical; positive interpersonal relationships, group formation, promotion, and collaboration are primary goals.
13. Focus on facilitation for program development, not instruction, so the process of program development is taught by doing. Through this process new leaders are developed and the people are empowered.
14. Create tools for program development and show how to use them: don't just provide the programs themselves.
15. Focus on approach for paraprofessionals and nonprofessionals, not professionals…because there aren't any, or at least not enough to make any substantive difference. The "paraprofessionals" are both the

experts of the culture and the facilitators of the programs. They bring valuable and essential skills to the trainings and must be empowered to implement programs.

16. 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. Utilizing digital and other technologies, we are in this together and will work together as a worldwide virtual team.
17. Programs will need to be formulated with great speed, will be discrete and time limited—we do not know how long we will be on station in any given place and we will not start something we can't finish. Thus, we will work as quickly as possible to provide stand-alone programming.
18. Mobilize local expertise and capability, wherever possible, then support it with programming and disseminate the overall process widely, particularly where there has not been such an approach before. This was particularly true in Aceh, where there was limited infrastructure, and what infrastructure was there developed posttsunami. This offered an opportunity to support the new network and capability in ways that might not otherwise have been possible.
19. Use a program assembly line approach to maximize collaboration and speed of program production. It is during this process that the relationships and trust developed between organizations and people. We did what we said we would do and we promoted active collaboration, not passive acceptance, for the program's development:
    a. Team consensus on program specifics; we began by asking the question: "If we could do anything, what would the program look like?" Taking that ideal, we then asked, "How can we do this?" and mobilized the network, both in Aceh and internationally, to try to get as close to the ideal as possible. This we learned from AusAID [Australian Agency for International Development] and UNICEF [United Nations Children's Fund].
    b. Content gathering: gathering as much information as possible as quickly as possible in the areas requested, then reduce that information to a usable set of reference materials from which to choose final products.
    c. Logistical and resource support: where, how, who, funding, mechanisms of support, travel, security, local transportation and housing, etc. Completely UNICEF and AusAID managed.
    d. Editorial/programmatic: consensus collaboration on what content, from all that was received, would finally be used in the presentations.
    e. Media preparation: taking the selected information and putting it into the proper format, PowerPoint, reference documents, etc, for participants.
    f. Translation: taking the final training products and translating them, primarily from English into Indonesian, and placing them into the day's presentation curriculum and reference documentation.
    g. Trainer preparation: review materials with trainer and promote input on feasibility of content and method.
    h. Presentation: as much as possible, use local trainers and program people. We will support and supervise as needed, but this is their show, not ours. We helped produce, but they star.
20. Evaluation: current evaluations are being completed by members of UNICEF, AusAID, Karinivasu, and Women's Crisis Counseling. The evaluation will cover other international agencies' experiences in working with the behavioral health team and its role in the collaboration.
21. Ongoing collaboration: while the programs might be time limited, the relationships are not and the potential for ongoing support and collaboration is very real, particularly with technology and digital capabilities to maintain and support it. Plan for and promote it.

REFERENCE

1. Hooker R. *M*A*S*H.* New York, NY: Simon & Schuster; 1969.