



PHYSICIANS AND PUBLIC HEALTH OFFICIALS RESPOND TO HURRICANES KATRINA AND RITA AND THE IMPACT THE HURRICANES AND THEIR AFTERMATH HAVE HAD ON THE MENTAL HEALTH OF THOSE AFFECTED.

The 2005 Atlantic hurricane season was especially violent and deadly. Of note were Hurricanes Katrina and Rita, which decimated the Gulf Coast region and flooded New Orleans. In addition to the loss of life, entire communities were lost, and many evacuees remain displaced.

On October 25, 2005, Robert Ursano, M.D., Director of the Center for the Study of Traumatic Stress and Chairman of the Department of Psychiatry at the Uniformed Services University School of Medicine and a Director of the CME Institute of Physicians Postgraduate Press, Inc., assembled a group of experts that included both clinical psychiatrists and public health officials who were involved in the response to Hurricanes Katrina and Rita to discuss the impact of these hurricanes on the population at large, the response of the health care community, and the steps that can be taken by public and private organizations to prepare for disasters. Their discussion appears here.

This special Commentary is another in a series of independent projects undertaken by the CME Institute as a service to its members and the broader academic and clinical community. Visit [www.psychiatrist.com](http://www.psychiatrist.com) to listen to audio selections from this discussion.

Faculty affiliations and disclosures appear at the end of this Commentary.

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## The Impact of Disasters and Their Aftermath on Mental Health

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In recent years, there has been an increased concern about wide-scale disasters, both natural and man-made, and their impact on the mental health of the population at large. In addition to the trauma of the disaster itself, the aftermath of the disaster, as the affected population tries to rebuild both literally and figuratively, can affect mental health as well. This discussion is focused on Hurricane Katrina, which hit the U.S. Gulf Coast in August 2005, but the concerns and challenges faced by health care personnel on the public and personal levels are similar to those in any wide-scale disaster or terrorist event that might affect our nation. When considering the impact of disasters on mental health, posttraumatic stress disorder (PTSD) may come immediately to mind, but disasters affect all parts of one's life, from grief at the loss of a loved one or home, to disruptions in access to health care and medications for chronic conditions (psychiatric or medical), to uncertainty regarding school for one's children, to name but a few.

### Public Health Care Perspective

**Dr. Ursano:** To begin, let's discuss the events that occurred prior to and after Hurricane Katrina, the unfolding of the organizational response, the clinical issues that were present, and then the potential clinical responses—both on the population level and the individual level. How was the Louisiana Department of Health and Hospitals (DHH) first called in?

**Dr. Cerise:** The Friday before the hurricane, all of our agency heads were attending an all-day planning retreat. At the conclusion of the day, our state health officer announced that the State Emergency Operations Center was being activated because a storm in the Gulf was headed in our direction. So at a time when we were planning our priorities for the year, we received notice that Hurricane Katrina was on the way. All our priorities were turned upside down because, for obvious reasons, the activity of our entire department was redirected. Over the weekend, we began mobilizing, and we set up special needs shelters in 8 regions across the state for those individuals with special needs from areas under the evacuation order. The hurricane hit late Sunday night and Monday morning. In addition, a group within the department has spent a lot of time in disaster training, using Centers for Disease Control and Prevention bioterrorism grants and U.S. Health Resources and Services Administration (HRSA) preparedness grants. In fact, earlier in the summer, this group had a hurricane disaster exercise that simulated essentially what happened with

Katrina, except with more predicted casualties than actually occurred. So there had been a fair amount of training before the storm.

**Dr. Ursano:** That sounds like the all-hazards approach to preparedness. In other words, you were preparing for the range of potential disasters under these grants, and that was a major component of the state's training. One makes use of all disaster training in responding to any type of disaster. Would you say a bit more about the special needs shelters—what was their mission, who came to them, and how they were located around the state?

**Dr. Cerise:** General shelters for evacuees are set up around the state. These are staffed by the Red Cross and the state's Department of Social Services. Our Office of Public Health set up 8 special needs shelters in all the major areas of the state a couple of days before the event. The idea is to have some capacity away from the affected regions for caring for people who have difficulty evacuating or who have special health needs. These include frail elderly who live at home, people with chronic medical conditions who need ongoing assistance such as individuals on oxygen or those on dialysis, and people who are usually cared for by a nurse at home. The special needs shelters are staffed with health care personnel and have access to pharmaceuticals.

**Dr. Ursano:** Given the size of the Katrina events, were the 8 special needs shelters adequate, or did they fill up quickly?

**Dr. Cerise:** In the Baton Rouge area, we opened extra beds that served as a field hospital as we accommodated the surge of people from the New Orleans area, and so the special needs shelters would be able to accommodate those people who evacuated prior to the storm. We dispersed those evacuees throughout the state, and then we created surge capacity in the Baton Rouge area and in the middle parts of the state as well to accommodate people as they started coming out of New Orleans in the days after the hurricane.

**Dr. Ursano:** Does the DHH have a role in the evacuation process itself, separate from sheltering?

**Dr. Cerise:** We do not have a transportation role; we set up the shelters to be able to accommodate those who are coming out. Other agencies are responsible for the evacuation. In this instance, much of the evacuation was done by the National Guard and our Department of Wildlife and Fisheries, who were out in boats in the New Orleans area picking people out of attics and off of rooftops. Once people were brought to high ground, the National Guard picked them up with helicopters and transported them to shelters.

**Dr. Ursano:** Do the hospitals have a formal role in emergency preparedness plans?

**Dr. Cerise:** Yes, they have a very active role. Within our HRSA preparedness grant, one component deals specifically with hospitals. There is an organized structure by

which the state Emergency Operations Center can create hospital capacity in the unaffected areas by canceling elective surgeries and discharging patients who could be discharged early. In the northern part of the state, for example, about 300 beds were open and available for evacuees, but since we were following a Federal evacuation plan, patients were flown to other states. I think this caused some frustration in the northern parts of the state because they were ready and willing to admit patients. When Hurricane Rita came a couple of weeks later, though, we needed all that capacity, and now those hospitals are quite full.

So the hospitals have a coordinated role. It was helpful to have a central person at the state Emergency Operations Center who knew how many patients were in each hospital and what their critical needs were. This person also helped coordinate the evacuation crews so that the crews knew where to go.

**Dr. Ursano:** You bring up an important aspect of large-scale disasters that most people are not aware of—the loss of health care capacity and the need to be able to shift capacity for all types of medical problems, including psychiatric problems, to different areas. Were there any particular movements of state mental hospitals or mental patients, in particular?

**Dr. Cerise:** We had 100 psychiatric beds at Charity Hospital in New Orleans, and those individuals had to be evacuated. As of today, we still have not regained those beds; Charity Hospital is not functional. We were able to create some extra capacity at some of our other facilities in the northern part of the state, and we hope to have all of those 100 beds replaced by January.

**Dr. Ursano:** What was it like for your people? What were the dilemmas that the Department of Health employees faced themselves, since some of them were victims of the disaster as well as responders to it?

**Dr. Cerise:** We have a number of facilities that the state runs, and so we had people who were caregivers in facilities and were evacuated with patients. We had people who had their homes destroyed while they were evacuating with the people they were taking care of. For example, in addition to the psychiatric hospital, we have a nursing facility and developmental center in the New Orleans area that our department specifically is responsible for. The direct care workers at those facilities had to go *en masse* with the patients whom they cared for to another part of the state. Particularly in those first days, they were on duty around the clock, and many of these health care workers are still there and have not returned home to this day. As you can imagine, it is very difficult to be dealing with the immediate task at hand—caring for your patients—in an uncomfortable setting while you are not sure what has happened to your home.

**Dr. Ursano:** I assume some of the health care workers' families may have had to evacuate to a different part of the state or even further.

**Dr. Cerise:** That's correct—there were a lot of disconnects. We saw that with our Office of Public Health personnel as well. That office is based in New Orleans, and the emergency operations were being run out of Baton Rouge. Again, you had a lot of people who were working almost around the clock. Their families had to evacuate to a different location. Some of their homes were destroyed. Only recently have a number of those people been able to return to New Orleans and see what is left of their homes.

**Dr. Ursano:** Dr. DeMartino, you were deployed to the Federal Emergency Management Agency (FEMA) Joint Field Office and had experiences with both health care providers and state mental health officials.

**Dr. DeMartino:** The Substance Abuse and Mental Health Services Administration's (SAMHSA) role started as soon as the Secretary's operations center was made functional for Hurricane Katrina. We set up an emergency response team just under a week into the event. Shortly after that, we had ongoing representation in Baton Rouge.

The role of working within the emergency response team and the joint field office always requires identifying the most critical, time-sensitive tasks that will help the state complete its job of providing services to its citizens. I think it is important to refrain from marching in with one's own ideas about what is needed and instead quickly find out who it is that you need to contact in order to offer your help and, with that person or persons, assess the most pressing needs.

Sometimes, your most pressing need is to make sure that the people running the show can still do that—that they have the resources they need and that they are taking care of themselves well enough so that they can continue to lead. It can be helpful to have someone from outside the system do that. When I first arrived in September, some people had not taken a day off and were working up to 16 hours a day. Coming from the outside, you have an opportunity to offer your help and observations and remind people about the high stresses of a disaster response and the need to take care of themselves as well.

**Dr. Ursano:** What situation did you observe related to the displaced population?

**Dr. DeMartino:** Much of the population had moved out of New Orleans and adjacent parishes. People who could get out of the city on their own stayed with family and friends or rented rooms in a hotel and the like. Those who could not often ended up in shelters. There were big and small shelters, some set up by the state, some that were run by the American Red Cross.

There were also what were called "pop-up" shelters that were spontaneous, opened by a church, for example, or by someone with a big home who took in a group of people. These spontaneous expressions of generosity and caring, which happened everywhere, defied anyone's ability to track evacuees accurately, at least initially. I think that this disaster played out in a slow motion man-

ner. Even though people knew that the city had flooded, they did not know what that would mean to them personally until a couple of weeks or more had passed.

### Interface Between Public and Primary Health Care Providers

**Dr. Ursano:** Dr. Reissman, could you comment on the interface between public health and primary care as the disaster unfolded?

**Dr. Reissman:** People in various capacities from Health and Human Services (HHS) were arriving as early as September 1. I was called into the emergency conference calls starting on August 29, right after the storm had emerged. We had 34 staff on the ground by the next day trying to do some of the needs assessments and trying to determine where we could have emergency facilities.

The blending of the Federal, state, and local agencies was a complex operation at that point. As each day went by, though, there was a little bit more command and control and a little bit more order regarding who was doing what. Over time, we developed more into a more structured emergency response team. We had folks who were deployed to several states at that point, because it was very clear from a public health perspective that the diaspora of Louisiana and Mississippi had fled the storm to surrounding states.

Early on a lot of people were evacuating from the Superdome. They were transported to the Astrodome in Houston. When the Astrodome overflowed, the overflow moved into the San Antonio area and up into the Dallas area from Houston. So there were major waves of migration—first, before the storm when people who had the means to leave did so, and then you had those who did not leave because they could not or did not want to. It required major assistance from the military and other first-responder forces to transport these individuals and families beyond the state boundaries.

Along with these waves of migration came stand-up facilities in the different states. I was in Dallas, where they were prepared for a few hundred people, and 20,000 showed up. It was difficult to ramp up from a few hundred to that size, but they did a really beautiful job using local and state resources.

**Dr. Ursano:** With that number of people immigrating into Dallas (and other areas), what kind of mental health problems did the community psychiatrists need to be alert to and plan for?

**Dr. Reissman:** Firstly, crowding and the impact of crowding on individuals and families. Then it is important to remember that if you are working in the shelter, the problems are different than if you are working in the community. Most of us do not live with other people an arm's distance from us, all around us, with the lights never going out, and people never stopping talking. Privacy and the ability to withdraw into yourself are taken away.

The next problems were those of evacuees coping with stress and the ways in which stress manifests. For example, a chronic medical illness that one might already have, like asthma or arthritis or a heart problem, could be exacerbated because of interaction of the psychological aspects of shelter life and the physical problem. Some folks with chronic mental illness who were in the shelters and had no place to go were running out of their medication, or because of the high level of stress, episodes of chronic mood disorders like bipolar disorder or psychotic disorders were triggered. In general, the Texas shelters had stand-up mental health clinics with volunteer psychiatrists providing direct service inside the shelter, which was unusual.

In the community, there were different issues. Survivors experienced a bit of a hero status. They were traumatized in many different types of ways, but in the school systems, for example, children from affected areas were at this stage welcomed, until the competition started when it became apparent that they were going to stay. Then the children and adolescents faced the common stresses: who's the best athlete, who's the gang leader, who's the ring leader? Jockeying for status and position in school brings its own problems and stressors that can worsen underlying conditions.

### Grief and Loss

**Dr. Ursano:** Dr. Shear, as you saw the hurricane, I am certain you thought about the large losses people were experiencing. What do people need to know about grief to be able to recover from a loss such as we saw with Hurricanes Katrina and Rita? What is grief?

**Dr. Shear:** Grief is the response to loss. In this situation, there is clearly a wide swath of loss. Dr. Cerise mentioned that there was less death than had been expected in their simulation. But at the same time, there was a substantial loss of life associated with this disaster. Losing a loved one is the most difficult and dramatic example of loss in this kind of situation. Most of what we think about in terms of grief is related to loss of a loved one.

We do know something about the response to the loss of a loved one. So let me talk about that first and then say a little bit about the other kinds of losses that occurred in this situation. Bereavement is a stressor, of course. It is probably the most intense stressor, especially if the person who dies is someone who is an attachment figure or someone on whom the bereaved person usually depends for support. In the face of a disaster, we naturally turn to others for support, especially those with whom we already have close relationships. Thus, bereavement is at the same time both a major stressor and a simultaneous removal of one of the major ways that we ordinarily cope with stress. Grief is the psychological response to loss, and it has some specific characteristics. During a period of acute grief, there are a couple of things of importance.

**Table 1. Psychological First Aid: Principles, Dos, and Don'ts<sup>a</sup>**

PRINCIPLES	
Foster safety, calming, connectedness, hope, and self-efficacy	
DO	
Help people meet basic needs for food, shelter, and emergency medical attention	
Listen to people who wish to share their stories and remember there is no wrong or right way to feel	
Be friendly, compassionate, and appropriately hopeful, even if people are being difficult	
Provide accurate information about the disaster or trauma and relief efforts	
Help people contact friends and loved ones	
Keep families together whenever possible	
Give practical suggestions that steer people toward helping themselves	
Engage people in meeting their own needs	
Direct people to available government and nongovernment services	
Remind people that help and services are on the way (if accurate)	
DON'T	
Force people to share their stories if they are not ready to do so	
Give simple reassurances like "everything will be OK"	
Tell people what you think they should be feeling or doing	
Tell people why you think they have suffered based on their behaviors or beliefs	
Make promises that may not be kept	
Criticize existing services or relief activities in front of people needing those services	

<sup>a</sup>From "Psychological First Aid: How You Can Support Well-Being in Disaster Victims," a Fact Sheet available from the Center for the Study of Traumatic Stress, [www.usuhs.mil/csts](http://www.usuhs.mil/csts).

One is that bereavement usually produces a highly emotional state. Thus, a lot of people who are not ordinarily emotional will become quite emotional in the face of a significant loss. They may even feel frightened by the intense emotion and feel out of control. Alternatively, very intense emotions may trigger a response in which the person gets very numb and almost dissociated. This, too, can be frightening. Additionally, it can be misleading because a person who experienced a major loss may not appear to be emotional when they are actually not as calm as they seem. Instead, they are numb and unable to think clearly. Having people around who can spend some time with the bereaved people, listen to them, and reassure them that what they are experiencing will not last forever and does not indicate the onset of some kind of mental illness is a very important aspect of acute management of grief.

**Dr. Ursano:** So in the acute stages of grief, health care professionals need to provide what we might call psychological first aid—ensuring safety, calming, increasing connectedness, fostering hope, and assisting in tasks needing to be completed—in order to manage intense emotions or numbness and near-dissociative reactions (Table 1).

**Dr. Shear:** Exactly. Any important loss is associated with all kinds of ramifications, all kinds of substressors, if you will. The grief literature talks about a dual process of coping, meaning coping with the loss and the emotionality of the loss, and dealing with associated stressors a bereaved person faces in adjusting to ongoing life.

People will naturally oscillate between these intense and often out-of-control emotions and the ability to set those aside and concentrate on something immediate. A person needs to move back and forth between coping with loss and restoration-related stressors. Sometimes, in turning away from the loss focus, people will even have a sense of humor and be able to laugh and joke. This is very normal and may even be especially helpful in overall adjustment.

Acute management, then, means providing an environment where it is possible to be a little out-of-control emotionally—as you said, psychological first aid—but also where people feel that they have permission to distract themselves and set aside thoughts of the loss.

**Dr. Ursano:** So we need to recognize that there are 2 major ways of responding—the acute response may include becoming very emotional, and the second, being perhaps somewhat numb. We also need to recognize this oscillating state between experiencing high, intense emotions and being more grounded in the moment and dealing with the practical issues as well as the normality of that movement back and forth—it is not abnormal to move rapidly between those 2 states, but, in fact, it is expected.

**Dr. Reissman:** Hurricanes Katrina and Rita highlighted the importance of social networks and social support to communities, families, and individuals. People in the New Orleans area are so rooted in the communities where they and their families have grown up and spent their lives. When they lose their community, more and more layers of distress are added, including the loss of coping skills and other affect modulators, ways to calm down.

**Dr. Ursano:** Loss of community is another resource loss as well as emotional loss that the hurricane populations experienced at the same time.

**Dr. Cerise:** There was and is a strong sense of community, and there was an intense desire for people to come home. In order to get people back, we did a fair amount of monitoring, both of the water and the sediment, and the Environmental Protection Agency was monitoring, and the Centers for Disease Control and Prevention (CDC) was testing as well. We coordinated with the local communities, giving information regarding whether it was safe for people to come back into the city. There are still areas that do not have safe drinking water. In the city, there were problems with safe drinking and adequate sewage. But despite those issues, there was this intense desire for people to return. Thank goodness we did not have outbreaks of diarrheal illness. We saw a number of people with skin rashes and self-limited infections. But despite all of this there was this strong urge to get back in the city—whether it was to go back and see what could be collected or just see their homes—long before all of the safety concerns were addressed.

**Dr. DeMartino:** Disaster planning has to take into account both people's wishes to leave and their wishes to return.

### Reactions and Concerns of the Population

**Dr. Reissman:** Another early concern was the fear that people had of toxic exposures, given the flooding conditions. A number of people had been swimming in the flood waters in the New Orleans area when the levees broke. They needed to swim to freedom, for example, to get away from their house or to get away from debris that was coming their way. There were many reports of people with skin complaints and burn marks. There will inevitably be questions about the long-term effects of the water, with people wondering whether they have been exposed to something that will either harm them now or harm future generations through reproductive outcome or fertility problems. From the literature, we can anticipate a number of issues that arise in communities exposed to toxins, e.g., what happens when you have toxins in your backyard.

**Dr. Cerise:** I also want to comment on the crowd phenomenon, that is, how behavior was affected by being in a crowd. I was in the Superdome for about 3 days after the storm. At that time, there was a spectrum of behavior that could be seen. We arrived at the Superdome Monday night after the storm passed that day, and the streets were dry. People had evacuated to the Superdome. At that time, it appeared that this was a matter of taking care of folks for the night until power could be restored. That night, the water started rising in the streets as the levee broke and the whole story changed.

I recall seeing a lady that we had taken from the special needs shelter a couple of days after the storm. We had helped her onto a truck to evacuate. She had this peaceful resolve about her and was almost apologetic. I remember her saying "It's not like I didn't try to leave, but I don't have a car and I tried to rent a car but the rental cars were all gone. I tried to call my friends, but they had already left." So she was stuck in her house, and she ended up being evacuated to the Superdome.

I saw another man later at one of our Baton Rouge shelters. He had spent 3 or 4 days at the Convention Center, which was even more of a chaotic environment than the Superdome. He was able to tell his story about how he walked through the waters and got up on the bridge where he was picked up and evacuated. He was very peaceful about what had happened to him.

On the other end of the spectrum was this intense anger that you could feel in the crowd. I remember 3 or 4 days after the storm, going through the crowd in the Superdome in a truck that had some patients who had been evacuated from one of the hospitals. There was a very angry and intense feeling in the crowd as it parted for the truck to pass through. By that time, people had been there several days. Ultimately, we saw a full spectrum of behavior.

The 2 people I saw were either already away or were getting away, but I still think within that crowd, you also had a passive acceptance by some people. People lined up along the corridors of the Superdome peacefully biding their time. More intense emotion grew over time.

### Lessons Learned

**Dr. Ursano:** So understanding how crowds behave—from passive acceptance to anger—is an important lesson for responders. I wonder what each of you might say to the community psychiatrist who might be saying, “What skills will help me respond if a tornado comes here?” “What clinical skills do I have for responding to a disaster—either on the public health side or on the clinical side—that I could make use of?” What are the lessons here for psychiatrists, mental health providers, and public health officials throughout the nation?

**Dr. Cerise:** From my perspective on a population health level, in addition to the people that we had in the hospitals who were much easier to track, we still do not have a great handle on all of the individuals who were using our community mental health centers or the folks who have shown up over time in emergency departments. We have seen a lot of stress there.

One of the lessons we have learned from a systems perspective is the value of being able to electronically follow individuals who are in care. We have a major effort ongoing now. I think it feeds in well with the electronic records movement, not only from a patient safety standpoint but from an efficiency standpoint. I think this disaster provides a great example of this need.

Within a week, under the direction of a group of national health information technology leaders, there was a system put in place that was able to access individual medication history using data from major pharmacy chains, health plans, and Medicare and Medicaid, so that at a shelter, if you entered a person’s name, date of birth, and zip code, you could get that person’s medication history.

The HIV drugs and behavioral health drugs were not included in that database because of privacy concerns in a system developed so rapidly, but it is a great example of how, in the midst of a crisis, we were able to pull these data together. But we still do not have our hands around all of the individuals who we know are out there and that need care.

**Dr. Ursano:** That is a wonderful point. We need to develop new database capabilities in this area to address the behavioral health issues, which raises complicated privacy issues around the tracking of medications and care.

Dr. DeMartino, what are your thoughts about the internist or psychiatrist who is in Montana? Why should he or she want to know about Louisiana?

**Dr. DeMartino:** One of the most complicated issues around this disaster is how to deliver care that is both medically appropriate and sensitive to the enormous

stresses that are involved in displacement, and on such a large scale. Refugee populations, in many ways, have similar issues at hand, but in the United States, this is something new for our provider networks to have to address.

For the most part, medical care facilities did well in getting services near population centers of displaced persons. But mental health care has been much more difficult to provide, in part because it always needs to be sensitively addressed after safety, security, and primary health issues are legitimately secured. It is often difficult to understand the complex mental health needs of large disaster populations.

One of the important things for health care providers and planners outside Louisiana is to recognize that although they may not have an exactly identical situation in which hundreds of thousands of people are displaced and many thousands have lost their homes and their possessions, there are important lessons in understanding what such large displacements of people mean for the provision of medical and mental health care. I think that the responders to other disasters in our country should take note of what has unfolded here. The concept of losing everything that you have—that you lose a part of your community, the things that you expect to see when you return home, and that you no longer know where to go for all your necessities in life—has a large effect on how people think about themselves and their mental health.

Clinicians in other parts of the country can think about what it means for disaster victims to lose their sense of community and the organization of their lives, how that reality may affect the way people think about themselves, and how it affects the way that they function from day to day. For Louisiana, a big issue will be how people start thinking about returning to their homes. How will their degree of loss affect their ability to function well in their communities in the future?

**Dr. Ursano:** You are emphasizing the complexity of needs assessment when one has such a large population. In addition, you are highlighting that one can also lose one’s community. You are accustomed to referring patients to a neurologist down the street, or you used to be able to tell your patients that they could go to a certain pharmacy to get their medications. When those resources are lost, how does one think about alternate care resources outside one’s community? In the long run, of course, how does one go about reconstructing the community in which our health care resources are networked? When we lose our own network, we require either outside resources or rebuilding those that were present.

**Dr. Reissman:** One way to think about this is the concept of *control*. In a scenario like this, the disaster results in a loss of sense of control over many parts of one’s life, from where you received health care to where your trash was picked up. What efforts are needed to regain that

sense of control, to rebuild what was predictable in the environment? Part of preparing for such an event is to think it through in advance, What if it were me? What is my family's plan? What redundancies do I need to have in my own personal family plan? What redundancies do I have in my professional network plan? How would I reconnect? What steps can I take now that would allow me to reconnect faster and more effectively? How would I use the assets at my disposal to make me more resilient in terms of my professional environment and my personal environment?

Needs assessment is a very important topic—even today as we are assessing how we did. An important question for mental health needs is, how do we assess the real need? What is a need versus what is useful or predictive to know? There is a blurry boundary between understanding the burden of psychiatric morbidity versus the individual's need for ongoing care and making sure that you have systems that are continuous and seamless, wherever that person is displaced to, wherever he or she is going. The jury is out right now on what the best way of obtaining that kind of assessment would be. We need to understand whether it is practical to gather information on what people are complaining of, certain symptoms like sleeplessness, having trouble with their thinking, concentrating, feeling sad or depressed or anxious, versus a more functional approach of are you able to get out of bed or get food stamps or get a housing voucher. Failing to address these functional aspects can impede the next level of recovery—planning for what services are needed as well as what mental health treatment.

This type of assessment (i.e., functional) is not the traditional syndromic surveillance we do in public health, yet it would be very helpful to have a better sense from practicing clinicians how they would use this information to change their practice or their understanding.

**Dr. Ursano:** We do not have a model in mental health like that in, say, tuberculosis that guides us in terms of a particular intervention once a certain number of cases has been detected.

Dr. DeMartino, your comments were very nicely set around the questions for clinicians to think about regarding what they have done to prepare themselves and perhaps their patients if they were in such a disaster. Have they thought about their personal family plan? How would they relate and reconnect to their family? How would they foster their own resiliency?

Dr. Reissman was emphasizing the complexity of assessing disaster mental health needs. Certainly this includes the burden of mental illness and distress and the requirements it places on the system for managing both new-onset illness and distress and chronic conditions made worse or that have lost care resources.

Yet, surveillance for mental health does not fit neatly into our ways of doing surveillance for classical public

health disease and illness that leads to public health interventions, and the mere questions of whether or not we look at symptoms such as sleep disturbance, or whether or not we look at disorders such as PTSD, or whether we look at functional impairment where we know the person is in need of assistance and may be going down a slippery slope of needing even more assistance the more impaired they become, are important.

**Dr. Shear:** Resilience also plays a big role in this whole picture. Most people are remarkably resilient. We are obtaining more and more evidence of resilience. Practicing psychiatrists often think about identifying pathology, but if we are thinking about acute response to disaster, we need to keep in mind that many people we see are going to be resilient.

That highlights the question of who is at risk. We need more information before we can create a risk model, but some of the stressors mentioned today may be risk factors, such as crowding and response to crowds.

Fears of physical illness also emerge in these situations where it is not clear what the effects of physical danger will be. Providing information about expected fears of physical illness and fears of mental illness (emotional loss of control), especially in connection with experiences of such large loss, can be valuable. Loss and exposure to trauma will cause people to naturally have emotional reactions that are frightening. Providing information about resilience, the fact that loss and exposure to trauma are not necessarily risk factors in themselves, can be helpful. Loss is very important, and so the person who has had to evacuate at the last minute but has the whole family together or neighbors and friends around will recover differently than the person who is alone and who is probably at much higher risk.

**Dr. Ursano:** Most disaster studies have shown that most people are, in fact, resilient, even to the most terrible disasters and traumas. When we wear our clinical hats and are looking for pathology, we need to be cautious not to overinterpret reactions to disasters, particularly early in the process. The normal mechanisms for recovery of the individuals and community support usually come back over time. A risk-based model means that we are always thinking about the level of risk and risk predictors, but some predictors may be atypical and in need of more research, such as issues of crowding, fear of physical illness, and certainly, fear of mental illness.

Loss is a core focus for this type of disaster, and grief is one way of approaching loss. In the expected psychiatric disorders and distress areas of PTSD, depression, and complex grief, there are evidence-based treatments that clinicians should have in their armamentarium.

**Dr. Reissman:** Hurricanes Katrina and Rita also illustrate how community psychiatry should play a role in consulting with leadership—whether it is local, state, or Federal—in particular to educate them about grief. It is

incredibly important as we watch how communities have rallied around disasters like the Oklahoma City bombing and 9/11. Those disasters provide something to learn regardless of whether the cause is terrorism or Mother Nature.

**Dr. Ursano:** Excellent point. Both care of the individual and care of the population frequently fall to leaders of the communities, who must determine how to lead large numbers of people through the process of grief and recovery. Thank you all for a wonderful discussion.

**Disclosure of off-label usage:** The authors have determined that, to the best of their knowledge, no investigational information about pharmaceutical agents that is outside U.S. Food and Drug Administration–approved labeling has been presented in this article.

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