

# Post-Disaster Psychiatry: Lessons from Katrina

By Mark Townsend, MD Richard H. Weisler, MD

The 19th US Psychiatric & Mental Health Congress was held in New Orleans, Louisiana, which provided conference-goers with a unique opportunity to attend outstanding presentations on mental health issues in the aftermath of Hurricanes Katrina and Rita, and to interact with some of the key local university and Louisiana State Department of Mental Health psychiatrists and psychologists who helped those affected to cope with the mental health consequences of these disasters.

This report presents highlights from these lectures, and from conversations with the lecturers, by authors who are themselves authorities in postdisaster psychiatry. Dr. Weisler interviewed Prof. Ken Sakauye; Dr. Townsend interviewed Prof. Daniel Winstead; and Dr. Chrisman interviewed Profs. Howard and Joy Osofsky (see another report from this conference, "Resilience in Katrina's Children"). All 4 of these distinguished professors from New Orleans were affected personally by the hurricanes, yet they still responded to the psychiatric needs of their neighbors and first responders following Hurricane Katrina.

## Background Statistics

Hurricane Katrina was the greatest natural disaster to ever hit the United States.<sup>[1]</sup> Damaging a land area the size of the United Kingdom, Hurricane Katrina also internally displaced some 2.5 million US residents. This figure represents one tenth of the world's internally displaced population; it includes only those residents who were still thought by the Federal Emergency Management Agency (FEMA) to be living outside of their home zip codes in June 2006, some 10 months after the hurricane hit Louisiana, Mississippi, and Alabama. A relocation [stress guide](#) compiled just after the Katrina disaster by the Agency for Toxic Substances and Disease Registry/Centers for Disease Control and Prevention (CDC) provides general information for displaced individuals of all ages, and includes advice on how to cope with the mental health impact of displacement.<sup>[2]</sup>

Massive flooding of New Orleans following multiple levee breaks left more than 108,000 homes in the city under 4 feet or more of water. In coastal Mississippi and Louisiana, many areas lost virtually every structure within 1.5 miles of the ocean. More than 1800 lives were lost in Hurricane Katrina, and hundreds of people are still unaccounted for.<sup>[1]</sup>

The Substance Abuse and Mental Health Service Administration (SAMHSA) estimates that 500,000 present and former residents of the area will potentially need mental health treatment because of the storms. Approximately 7 weeks after Hurricane Katrina hit, the CDC conducted a rapid needs-assessment survey in New Orleans; roughly 50% of those surveyed scored high enough on the SPRINT E, a self-report mental health screening instrument, to suggest a possible need for treatment. Moreover, 25.9% believed that at least 1 member of their household needed mental health treatment because of the hurricane, yet only 1.6% of those reportedly in need of mental health treatment were receiving it.<sup>[3]</sup>

The CDC also surveyed firefighters and police officers in New Orleans 7-13 weeks following the hurricane. Some 19% of police officers reported symptoms of posttraumatic stress disorder (PTSD), and 26% reported major depressive symptoms.<sup>[4]</sup> Among firefighters surveyed, 22% reported symptoms consistent with PTSD and 27% reported major depressive symptoms.<sup>[4]</sup>

## "Katrina Brain"

Ken Sakauye, MD, who was Professor of Psychiatry with the LSU Health Sciences Center (LSUHSC) in New Orleans during and after the disaster, recently became a Professor of Psychiatry and Vice Chair of Psychiatry at the University of Tennessee at Memphis. In a session entitled "'Katrina Brain': Acute Cognitive Impairment," he spoke about his own personal and clinical experiences and observations

during the first several months after Hurricane Katrina in New Orleans.<sup>[5]</sup> "The focus on PTSD often overlooks the more common anxiety spectrum and depressive disorders we see after a disaster," he noted. Other than life-threatening situations that involve the intense fear, helplessness, or horror associated with PTSD, a key component of stress is the element of appraisal. Anxiety intimately influences memory and learning in a bi-directional manner, however. According to Dr. Sakauye, "Even the locals [who did not have] Axis I pathology after Hurricane Katrina expressed common impairments in concentration and memory, labeled by many as 'Katrina Brain,' or [by those in] surrounding states as (pejoratively) 'water damage.'"

Dr. Sakauye also reminded the audience that chronic stress generally results in a loss of diurnal regulation of cortisol, and under prolonged stress, the hypothalamic-pituitary axis (HPA axis) becomes dysfunctional. He speculated that "this persistent, relatively high cortisol burden may cause hippocampal atrophy as well as short-term impairments in memory function, and may be a factor in the high levels of health morbidity and death rates following a disaster like Hurricane Katrina, which causes catastrophic damage."

According to Dr. Sakauye, emotional consequences were exaggerated for many residents and first responders by the post-Katrina stress that resulted from the loss of the support network (family and friends scattered); loss of the healthcare infrastructure (even agencies were dysfunctional or destroyed); the ongoing problem being man-made (avoidable); no restitution from government (feeling of abandonment); and a void of leadership (need for a parental figure -- someone who seems to know what to do next).

"On a global level, there was a 61% increase in crisis helpline calls for psychiatric issues in the months after Katrina, with less than 50% of the original population in New Orleans," said Dr. Sakauye. "There was a 25% increase in death notices in the *Times-Picayune* 6 months after Katrina, compared with the same 6 months before Katrina; the murder rate (per 100,000) increased 37.1% over pre-Katrina levels; 44% of 202 children had symptoms of new mental health problems 6 months after Katrina, and 68% of their caregivers complained of depression, anxiety, or other mental health problems."

Historically, murder rates have been high in the New Orleans area, but they have risen even further since Hurricane Katrina. In 2004 in Orleans parish, 264 people had been murdered during the last full year before Katrina (population est. 471,057), yielding a murder rate of about 56/100,000 persons, which was significantly higher than the FBI-reported national average of about 13.2 murders/100,000 residents for comparably sized cities. During the last 6 months of 2006 in Orleans parish, 110 people were murdered, yielding an annualized crude murder rate for post-Katrina New Orleans (with approximately 200,000 residents) of about 110 murders/100,000 inhabitants - roughly double the pre-Katrina rate and almost 20 times higher than the 2005 FBI national average of 5.6/100,000 residents.

In addition, the previously reported New Orleans coroner data suggest that the suicide rate has tripled since Katrina -- from approximately 9/100,000 residents in 2004 to 26/100,000 earlier in 2006 -- with several possible suicides remaining unclassified at this time.

Although finalized age-adjusted rates of murder and suicide in post-Katrina New Orleans have not yet been determined for 2006, it is clear that extraordinarily high rates in both categories are forthcoming. And, it is clear that these high rates suggest significant public health issues that must be addressed.

Dr. Sakauye is a geriatric psychiatry subspecialist. He commented that after the hurricane, the geriatric patients he saw complained primarily of insomnia (no dreams), difficulty concentrating, acute cognitive decline (came in for a dementia evaluation), diffuse anxiety and anger, preoccupations with being late (will be left behind), guilty preoccupations (can't help family), and health worries.

"Of course, many [older individuals] were depressed and had Axis I pathology (ie, substance use disorders, mood, anxiety, and psychotic disorders)," he said. "But many came [to see me] because of

cognitive complaints. The practice implication is that in addition to usual treatment approaches to teach coping skills and mastery, and possibly starting an SSRI or SNRI, the key to helping after a disaster is establishing a sense of safety, security, and normalcy as soon as possible. This involves connecting to resources, giving information, and modeling adaptive behaviors." He also elaborated on some details about what this might entail, including what are sometimes considered "extratherapeutic" or "milieu" issues that he believes are essential elements in recovery.

## **Mental Health Infrastructure in the Aftermath**

Dr. Daniel K. Winstead, the Robert G. Heath Professor and Chair of the Tulane University School of Medicine Department of Psychiatry and Neurology, described how his department survived and ultimately renewed itself in his workshop, entitled "Aftermath of Katrina."<sup>[6]</sup> Dr. Winstead's often moving account provided numerous lessons and recommendations for other US medical schools as they face and overcome disaster.

The levee failure associated with the hurricane flooded 3 of Tulane's principal teaching hospitals and shuttered its large, freestanding psychiatric hospital. Before the storm, Tulane and LSUHSC jointly ran 92 public psychiatry beds at Charity Hospital, which also housed a psychiatric emergency room handling 600 patients monthly. Charity Hospital, founded in 1736, was, after New York's Bellevue Hospital, the oldest continuously operating hospital in the United States. It has remained closed since the hurricane.

Dr. Winstead recounted his own evacuation from New Orleans, saying that his decision to leave was made only hours before the storm hit. The following day, with his family safely in Alabama, his New Orleans neighborhood flooded to 5 feet, "leaving a mess and not much that is salvageable," he said. His faculty and staff were scattered throughout the country, 21 states in all. The city was completely evacuated and remained closed for a month, with most of it remaining off-limits to overnight visitors throughout the fall of 2005.

Meanwhile, with many of his faculty, residents, and staff isolated from the fate of their friends, relatives, and homes, the department regrouped at a state psychiatric hospital in rural Jackson, Louisiana. Medical students and most residents and faculty began working in Houston, mainly at Baylor. Tulane's department is a combined psychiatry and neurology program. The neurology section, headed by the late Leon Weisberg, placed its residents at the Ochsner Clinic in suburban New Orleans. Ochsner, also affiliated with LSUHSC psychiatry, was one of the few hospitals that remained operational during and after the storm.

As the city reopened, Tulane was able to gradually reestablish itself in the region. Although, as at LSU, many faculty were furloughed under the universities' exigency plans,<sup>[7]</sup> Tulane and LSUHSC have gradually reestablished themselves in the region, and their medical students returned to their downtown New Orleans campus in the summer of 2006. All house officers and third-year clerkship students are once again training entirely within Southeast Louisiana.

Access to psychiatric services has been particularly affected. The Medical Center of Louisiana New Orleans (formerly Charity Hospital) had 92 inpatient psychiatry beds before the storm, and it has not reopened. Approximately 180 other beds in New Orleans-area private hospitals and the New Orleans Veterans Administration (VA) Hospital also remain closed. Similarly, the VA facility in Biloxi, Mississippi, was destroyed; this facility had 144 psychiatry beds.

Dr. Winstead acknowledges that the downtown Tulane-LSU medical school complex was ill prepared for a disaster of this scope. The flood destroyed the area's electrical systems and this, along with the ensuing civil unrest, hampered the evacuation of patients and staff. Rates of suicide, depression, and violent crime have increased post-Katrina, but the city acquired only a 20-bed public psychiatry unit (and not until August 2006), and it remains without a psychiatric emergency room. On December 15, 2006, JCAHO proposed [new standards](#) for hospitals' disaster planning, largely in response to events in New Orleans.<sup>[8]</sup>

Among other things, the JCAHO "asserts that hospitals should employ an 'all-hazards' approach to emergency preparedness that addresses communication, patient safety, staffing, utilities, and other resources."

Dr. Winstead also hopes that Katrina has taught valuable, if extraordinarily painful, lessons for academic psychiatry's future response to disaster. In addition, he anticipates novel programs to both study and address the enormous mental health needs of the area. Although Charity Hospital itself may never reopen, he also looks forward to continuing the long and productive collaboration with LSUHSC Psychiatry, which is once more firmly reestablished in New Orleans.

Several speakers noted the significant problems created by the lack of flexibility in using disaster mental health crisis funds for actual treatment of residents and first responders in need; these they attributed to restrictions contained in the Stafford Act\*.<sup>[9]</sup> Speakers also commented on the possibility that the Stafford Act's provisions may have accelerated the mass exodus of private practitioners, and the need by LSU and Tulane to furlough tenured faculty because of a severe shortage of financial resources to cover mental health care post Katrina. All told, the number of psychiatrists in New Orleans dropped from 196 before Hurricane Katrina to 22 by April 2006.<sup>[10]</sup>

\*In the section on "Uses and Use Restrictions," the Stafford Act provides funds for identifying mental health needs, but restricts funding for treatment, as follows:

*Grants to States to provide immediate crisis counseling services including screening, diagnostic, and counseling techniques, as well as outreach services such as public information, community networking, consultation and education which can be applied to meet mental health needs immediately after a major Federal disaster declaration. Mental health workers specified in the grant are eligible for training that will enable them to provide crisis counseling services. **The grant may not be used to provide treatment for substance abuse, mental illnesses, developmental disabilities, or any pre-existing mental health conditions.*** [Editor's emphasis]

-- Robert T. Stafford Disaster Relief and Emergency Assistance Act, Section 416, Public Law 93-288, as amended; 42 U.S.C. 5182, Crisis Counseling Assistance and Training Act, Public Law 100-707.

Readers who wish to have additional information on disaster mental health may go to:

<http://psychiatry.mc.duke.edu/Clinical/disastermentalhealth.html>

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