Psychiatric Issues and Answers Following Hurricane Katrina

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On August 29, 2005, one of the greatest natural disasters befell the United States when Hurricane Katrina hit the Gulf Coast, resulting in unprecedented devastation of the area. Though Katrina annihilated much of the Mississippi coast with its winds and storm surge, it initially appeared that New Orleans would be spared the brunt of the storm’s fury. But later that day, the 17th Street London and Industrial Canal levees broke, flooding over 80% of the city and changing New Orleans permanently.

In the aftermath of Katrina, hundreds of thousands of people were left homeless, and families, businesses, healthcare, and education were completely disrupted. Though the physical damage wrought by the storm and the subsequent flood waters were readily apparent, the magnitude of the destruction, extending over a 200-mile stretch of the Gulf Coast, was hard to comprehend. What was not so apparent were the emotional and psychological trauma suffered by the people who were displaced, suffered physical losses, endured family separations, and lost their generations-old lifestyles. These misfortunes were further complicated by extensive loss of healthcare services throughout the region. With the closure of Tulane University School of Medicine immediately following Katrina, students, residents, faculty, and staff were confronted with numerous psychological challenges.

Tulane University School of Medicine has approximately 620 students coming from all 50 states and approximately 30% of those students come from Louisiana. Tulane Medical School has a nearly equal number of female and male medical students. Approximately 20% of students come from ethnic groups traditionally underserved in the medical profession. Since Tulane students come from all parts of the United States and elsewhere, student evacuated to locations throughout the country. Immediately following the disaster, no personnel were allowed back into the region and it became apparent that the school would not reopen in New Orleans for an extended period of time. Despite these circumstances, the leadership of the medical school was able to use the Internet cell phones, and other technology to communicate with its constituents. In addition, the Alliance of South Texas Academic Health Centers (a coalition of Baylor College of Medicine, University of Texas Health Sciences Center-Houston University of Texas Medical Branch, Galveston and Texas A&M Health Sciences Center) was created and facilitated the move of Tulane’s operations to the Texas Medical Center in Houston. Within 3 weeks, the school was prepared to resume classes and clerkships for all students, and arrangements were made to move residents temporarily to Houston and other training sites throughout the country. However, when Hurricane Rita approached the Texas Gulf Coast, extensive evacuations further delayed the resumption of educational programs by an additional week.

The lives of all members of the medical school community were disrupted, with a high incidence of family separation, loss of living arrangements and personal possessions, and emotional distress. In addition to normal psychological reactions to trauma, months later, clinical depression, major anxiety disorders, and posttraumatic stress disorder (PTSD) were seen in members of the Tulane community. The dynamics of moving forward while enduring dramatic adjustments to lifestyle provide an opportunity to learn from this disaster.
Immediate Issues

Immediately following the storm, there was chaos in the city and great uncertainty among students and faculty. Rumors abounded that the school’s buildings were completely destroyed, that it was going to move permanently to a new location in another state, and that it might be closing its doors forever. Accompanying these rumors was great uncertainty about the future of classes and clinical rotations, concern about the safety of friends and colleagues, and conjecture about damage to personal property. At least temporarily, there was loss of a sense of “group” among students and faculty. Loss of a sense of group is associated with severe traumatic stress. To maintain a group identity, communication was essential. Following the storm, every communication system was dysfunctional, including our school’s network servers, e-mail system, and cell and landline phones in the New Orleans area code. Fortunately, our students had created a listserv prior to the storm. Use of this listserv for communication among Tulane students and other community members became fundamental to creating reasonable order out of chaos. The Association of American Medical Colleges (AAMC) also posted information for the schools affected by the hurricane and alerted students to visit the listserv often for updates.

The first step was to formulate a plan for restarting the medical school. Medical school administrators decided in the first days of September to move the operation of Tulane’s educational programs to Houston, using facilities at Baylor College of Medicine (BCM) for preclinical students and the Alliance of South Texas Academic Health Centers for clinical training. To recreate the sense of group, Tulane student leaders and their Alliance colleagues in Houston actively involved themselves in the planning process. To hasten the return to an educational experience resembling what students were accustomed to, student leaders, as well as Tulane and BCM faculty and staff, addressed numerous practical, logistical, and communication issues. Steady progress towards a return to normalcy helped many students adapt to the unexpected and disturbing aspects of their new lives. Daily reports from groups of students, staff, and faculty in Houston, working on everything from curriculum reorganization to housing, were communicated to Tulane community members not yet at the Texas Medical Center.

These progress reports on the resumption of classes came from daily late afternoon meetings, a strategy that created a valuable sense of purpose and esprit de corps among planners in Houston. A sense of community was created, with students being treated more like junior colleagues rather than being confined to the hierarchical student-teacher relationship. Issues that were remarkably well handled by student groups included housing opportunities, students with special needs, and curriculum management suggestions. For example, a “pass/fail” grading system for preclinical students was discussed and endorsed by students (and subsequently adopted by the Curriculum Committee). During the course of the year in Houston, interviews with students found that the pass/fail grading approach relieved anxiety for many students trying to adjust to their new “home” in Houston and the lack of familiar support mechanisms.

An early event that gave students a sense of community and security was an orientation provided for all classes. This October orientation provided ample time for students to debrief and reacquaint and included messages of welcome by the Tulane deans and Dr. Peter Traber, CEO and President of BCM. Dr. Michael DeBakey, a BCM emeritus faculty member and one of Tulane’s most distinguished alumni, also gave a reassuring address. In total, Hurricane Katrina resulted in a 3-week suspension of classes while Hurricane Rita delayed classes by 1 additional week.

Student Academic Issues

Restructuring the Curriculum

To restore and resume the curriculum, course directors relocated to Houston to prepare their courses, coordinate with Baylor classroom and media/technology staff, and work with Tulane administrators, support staff, and students. Other faculty came to Texas as needed, and faculty from Baylor and the University of Texas Health Sciences Center graciously accepted invitations to fill gaps in the preclinical lecture schedule. Baylor provided the physical facilities and anatomy labs for Tulane, while both Baylor and UT-Houston furnished needed media and teaching software.

Despite its relocation to Houston, faculty retained the educational objectives of the Tulane medical student program and as many of the various teaching formats as possible. Marshaling faculty for small group sessions was especially challenging, but volunteers stepped forward to facilitate case-based sessions that were not in their areas of expertise (e.g., pathology faculty who were small group leaders for the pharmacology course session on antidepressants).

Traditionally, Tulane provides its first- and second-year students with early clinical experiences. A major concern

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of students, and one that affected their morale, was the ability to maintain this feature of the curriculum. Several approaches were taken to address this concern. First, Tulane's standardized patient program relocated to Houston and established a wide variety of history and physical examination teaching and assessment programs for both first- and second-year students. Second, Baylor shared its clinical simulation resources (e.g., "Harvey") with Tulane to assist in the effective teaching of clinical skills to preclinical students. Third, to provide clinical experiences, a group of Houston physician preceptors accepted preclinical students into their practices. Fourth, student volunteers from Tulane's third- and fourth-year classes provided peer instruction in basic clinical skills for their more junior colleagues. Peer-assisted teaching, largely coordinated by student leaders, provided a unique opportunity for Tulane students to contribute to solutions and reconnect with medical students not in their class. Finally, an expanded orientation to clinical clerkships occurred in July 2006. This orientation helped to redefine the class as a group and allowed for sharing of stories and experiences.

As mentioned earlier, to reduce some of the academic stress associated with the move to Houston, faculty and students agreed to adopt a two-interval grading system (pass/fail) for first- and second-year students for the 2005-2006 academic year. It was felt that this change would allow them to cope better with their new living and classroom situations. The pass/fail system has proven so successful that it continues to be maintained for the 2006-2007 academic year.

Clinical experiences were reestablished through the Alliance of South Texas Academic Health Centers and the use of a few remaining Tulane sites in Louisiana. The Liaison Committee on Medical Education (LCME) allowed Tulane students to complete one core clinical rotation at sites across the country in the time period immediately after the storm. Thus, third- and fourth-year students, separated physically from their classmates, lost the sense of identity that most medical school classes establish. Additionally, clerkship directors were limited to meeting in person only with Alliance- and Louisiana-located students. All of these factors contributed to a sense of student demoralization and the inability to create the larger community that generally exists among students.

**Academic and Personal Counseling**

The storm increased the academic and personal counseling needs of students, while reducing the resources available to meet demand for assistance. Nevertheless, the Associate Dean for Student Affairs and the Director of the Office of Medical Education developed a plan for students needing help. The Associate Dean and the Director communicated their availability to all four classes through e-mail correspondence and meetings with student leaders. As they would have done at Tulane, the Associate Dean and Director met with students individually on such matters as clerkship and elective scheduling, preparation for USMLE Step exams, study and test-taking advice for Tulane courses, planning for residency applications, the Medical Student Performance Evaluation, and a wide range of personal, family, and dislocation issues.

The Peer Assisted Learning Program, developed by the Office of Medical Education to provide third- and fourth-year peer tutors for students needing help with basic science courses, was continued in Houston. In addition, for the gross anatomy, histology, physiology, and pharmacology courses, numerous Tulane medical students with past experience or advanced degrees in these disciplines served as tutors.

Mental health professionals from the Baylor College of Medicine made their services available to students. Without access to Tulane's New Orleans-based psychologist who administers cognitive/reading assessments, we identified a Houston-based educational psychologist to fill this need for our students. Two key Tulane mental health professionals were readily available to students—the clerkship director for psychiatry and our chaplain, who is a licensed professional counselor.

**Support Groups**

Within 1 week after the storm, our medical school chaplain was in contact with students through the student listserv that had been established before Katrina. This listserv was now the main source of contact for students, faculty, and staff. Having established a relationship of trust with students over the preceding 5 years, the chaplain was an important source of support. The chaplain traveled to Houston every 2 weeks beginning in late September. There he met with students on both a formal and informal basis as they coped with the disruption to their lives and to the School of Medicine's activities. Issues of concern included personal anxieties caused by the change of lifestyle and anxieties associated with adjusting to a new schedule in a new location. Many students seen by the chaplain had lost all of their personal possessions in the storm or during the poststorm period. It was very important to the students that there was someone familiar to listen to their needs. Also, medical school administrators were easily accessible
to assist students in the recovery of their personal property losses.

Towards the end of October, monthly support group meetings for both students and faculty/staff were initiated and led by the chaplain and the director of the psychiatry clerkship. Typically after a major trauma, grief reactions resolve without long-term consequences in a majority of cases. However, for some individuals, recovery may be impaired. The most common resulting diagnosable condition is PTSD. In the months following the storm, Tulane faculty and staff estimated that approximately one-third of students had some degree of clinical depression or PTSD. Additionally, consistent with PTSD, during the summer following the storm, the threat of another hurricane led to symptoms of avoidance, numbness, and anxiety in many members of the Tulane community.

Following relocation, students described disappointment with the school leadership, frustration with being an extended "guest," and a desire to be back home at their own school and its surroundings. However, many students displaced their anxiety and expressed the desire to be in other parts of the country where hurricanes do not occur. The support groups helped students deal with these issues and reminded students that they were not alone in their thoughts and behavior.

Retreat

A Student Retreat was held at an off-campus location in March 2006 to address the mental health problems related to Hurricane Katrina. The retreat focused on students in their first 2 years of medical school, since this group was more likely to experience difficulty upon return to New Orleans. Challenges for these students included relocating once again, choosing from limited, more expensive housing, and facing different clinical clerkship experiences than they had expected prior to the closure of some of Tulane's major teaching hospitals. Additionally, most members of the first-year class had lived and gone to school in New Orleans for only 3 weeks before Katrina and had little time to acclimate to the city or the school. The retreat included informational presentations and small group discussions on a variety of topics, including returning to and rebuilding New Orleans, curricular issues, student organizations, orientation to hospitals and clinics, and spirituality and medicine. Also, a major focus of the retreat was to discuss stress reactions and to identify healthy ways of dealing with stress. The retreat allowed students to contemplate and discuss the prospects for their return home. The reality that New Orleans would be dramatically different from the city they left in August 2005 was emphasized. Mental health resources in New Orleans and at Tulane were identified and contact information was distributed to the students during the retreat.

At the retreat, students were asked to identify ways in which they would like to be involved in rebuilding New Orleans as well as concerns regarding their return to the city. As expected, they voiced concerns about returning to a city that was never really home, their ability to be mentors to the freshman class, and unresolved matters about clerkships and medical education in post-Katrina New Orleans. Nearly all students who attended stated that they felt the retreat was a positive experience and that they would appreciate and value follow-up gatherings and related activities.

Conclusions

In summary, Hurricane Katrina has taught us several valuable lessons (Appendix 1). First, by establishing a plan and communication systems prior to a disaster, order can be created from chaos. Second, significant emotional stress results from uncertainty. Thus, steps should be taken immediately to minimize stress and frustration for students. It is important to separate normal grief reactions from more serious conditions, such as major depression, PTSD, and major anxiety. In addition to other approaches, we restructured our grading system to pass/fail, promoted more student-to-student interaction by using small groups in preclinical courses more effectively, created a regularly scheduled support group for students, faculty, and staff, and conducted a retreat that allowed students to share and discuss common anxieties. Faculty and staff must be vigilant in identifying stress reactions and addressing depression, whether in students or in themselves. Although we have not discussed faculty and staff in detail in this article, it is important to recognize that they also lost personal

APPENDIX 1. Lessons Learned From Katrina

| Develop a school-wide comprehensive disaster plan including communication systems with redundancy |
| Communicate with students, faculty, and staff early and often |
| Prepare for emotional distress. Separate normal grief reactions from more serious clinical conditions |
| Assure that administrative leaders and key faculty are available for students |
| Provide emotional support for all involved. Remember, everyone is affected |
| Meet frequently with students, both individually and in groups |

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property in the storm and were separated from family and friends. Nonetheless, faculty and staff were expected to continue working under difficult circumstances without their normal support staff or resources. Every member of the Tulane medical school community was vulnerable to stress reactions and depression. Vigilance and intervention are the key words under such circumstances. Dealing with mental health concerns, early and effectively, helped us to keep our school together. We hope never to face another disaster like Katrina. However, we also hope that others will benefit from our story should they face an unanticipated and calamitous interruption in the future.