Integrated Preparedness for Continuity of Tuberculosis Care After Hurricanes Gustav and Ike: Louisiana and Texas, 2008

Mark C. Miner, BSE[a]
Gail Burns-Grant, BA, CPHM[a]
Charles DeGraw, BA[b]
Charles Wallace, PhD, MPH[c]
Carol Pozsik, RN, MPH[d]
John Jereb, MD[a]

In 2005, Hurricane Katrina forced numerous tuberculosis (TB) patients in Louisiana and Texas to evacuate to other states. As a result of this disaster, a strategic plan was implemented in July 2008, when Hurricane Gustav forced TB patients to evacuate to other locales. This article details the lessons learned from these experiences and suggests a strategic plan that can be implemented by other states in the event of a similar disaster.

On August 29, 2005, Hurricane Katrina made landfall in New Orleans, Louisiana. The storm and its aftermath displaced 130 TB patients, all of whom were under directly observed therapy (DOT). After the storm, all TB patients were located, and 62 patients (48%) were traced to 15 states.[1] By July 2006, TB program officials in Louisiana and Texas had planned for a similar disaster by using the lessons learned from Hurricane Katrina. The strategic elements included (*1*) supplying two weeks or 30 days of medicine to each patient who was likely to relocate, (*2*) providing each patient with a personal card listing contact numbers of TB program personnel, (*3*) sending a list of patient names to the National Tuberculosis Controllers Association (NTCA) for sharing with program officials in other states, and (*4*) establishing a referral center at the Centers for Disease Control and Prevention (CDC) Division of TB Elimination in Atlanta, Georgia.

As Hurricane Gustav was approaching through the Gulf of Mexico in August 2008, officials of the Louisiana Department of Health and Hospitals, TB Control Section activated all four components of its strategic plan for tracing patients and ensuring continuity of their medical treatment. All 111 TB patients who were evacuated from five Louisiana parishes prior to the landfall of Hurricane Gustav on September 1, 2008, had reestablished DOT within 19 days of the storm. As a safeguard, DOT doses were extended at the end of treatment to compensate for the possibility that the patients did not take their self-administered doses. In Jackson, Mississippi, one person who evacuated from Louisiana reported symptoms during triage at a shelter and was found to have newly diagnosed

[a]Centers for Disease Control and Prevention, Division of TB Elimination, Field Services and Evaluation Branch, Atlanta, GA
[b]Louisiana Department of Health and Hospitals, New Orleans, LA
[c]Tuberculosis Section, Texas Department of State Health Services, Austin, TX
[d]National Tuberculosis Controllers Association, Smyrna, GA
Address correspondence to: Mark C. Miner, BSE, Centers for Disease Control and Prevention, Division of TB Elimination, Field Services and Evaluation Branch, 1600 Clifton Rd. NE, MS-E10, Atlanta, GA 30333; tel. 404-639-8648; fax 404-639-8959; e-mail <akv4@cdc.gov>.

TB before admission to the shelter. The information was reported back to Louisiana officials, which demonstrated an effective use of the plan.

Two parishes in southeast Louisiana prepared for the brunt of Hurricane Ike, which made landfall on September 13, 2008. Louisiana officials gave all 39 patients a 30-day supply of medicine before the storm. Within a week of the storm, 36 patients were back on DOT. The other three patients included one who died from non-TB-related causes and two who were deported by immigration officials.

Texas TB control officials, including those in Houston, Texas, activated their emergency response systems before Hurricane Ike made landfall on September 13. During the previous week, 245 patients in Houston were receiving DOT. All patients stated that they would remain in Houston during the storm and received a week's supply of medicine for self-supervised treatment. Because poor road conditions, floods, and electrical outages kept the clinics closed, health workers visited all patients to deliver an additional week of medicine on September 17. By September 24, all 245 TB patients in Houston were returned to DOT, and treatment was extended to adjust for the possibility that patients missed doses while their treatment was not directly supervised.

In the coastal region of Galveston, Texas, which suffered the most damage from Hurricane Ike, 54 TB patients from 14 city or county jurisdictions in Texas were receiving treatment before landfall. By September 25, 40 patients (74%) had been located in Texas and returned to DOT. The remaining 14 patients included one that left the country, one who died of non-TB-related illness, and 12 who were given an extra supply of medicine and eventually returned to Galveston on DOT. Data about the return dates of patients were not collected centrally.

In comparison with the aftermath of Hurricanes Gustav and Ike, which were less severe, the magnitude of the Katrina catastrophe in 2005 contributed to the wider geographic distribution of patients who relocated. Nevertheless, the elements of the TB response plan were implemented, and the responses to the 2008 hurricanes suggest that the emergency preparedness plans in Louisiana and Texas are models for TB programs and other health systems that monitor patients during extended ambulatory treatment, such as human immunodeficiency virus/acquired immunodeficiency syndrome clinics. NTCA has proposed additional enhancements, with a focus on hurricane evacuations in the southeastern states:

- Convene a pre-landfall conference call with TB control authorities,
- Share patient contact information with individual TB control officers and limit further dissemination to a need-to-know basis,
- Use an NTCA phone bank for local and state health departments to call and request specific medical information on evacuated patients, and
- Assess the need for CDC assistance during the evacuation and recovery period.

These plans were tested in 2008 when Hurricane Gustav struck Louisiana and Hurricane Ike struck Texas. In Louisiana, all 111 evacuated patients were returned to treatment within 19 days. In Texas, all 245 patients from Houston returned to treatment within seven days, and 40 of 54 evacuated patients from Galveston returned to treatment within 14 days. The preparedness plan worked smoothly, and the approach is recommended as a model for TB control programs and other long-term ambulatory care systems in other states.

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