Surgery for gunshot wounds, tracheotomies, and urgent cases was performed in the wake of Hurricane Katrina at West Jefferson Medical Center in Marrero, La.

“We never closed,” says Murray Couey, RN, senior director of nursing for surgical services at the 462-bed community hospital, about 10 minutes south of downtown New Orleans.

West Jefferson, along with 480-bed East Jefferson in nearby Metairie, La, and 476-bed Ochsner Foundation Hospital in New Orleans, were the only hospitals among about 15 in the immediate New Orleans area to stay open through the Category 4 hurricane, ensuing flood, and mass exodus.

Like most of the staff, Couey worked 20-hour shifts during the 3 days after the hurricane hit early on Monday, Aug 29.

“We stopped surgeries for 2 days after the storm but resumed on a limited schedule (on emergency power generators),” he told OR Manager. “We are thinking that next week (Sept 12), we will do more urgent elective procedures.”

With about 75% of its staff available, West Jefferson hired temporary employees from closed hospitals and took on volunteer surgeons and nurses. The OR staff was averaging 6 to 8 surgeries per day, he says.

“I am exhausted,” Couey says. “I slept on the office floor for 3 days. What got us through is that the staff really pulled together and refused to let up.”

Stressed supply chain

West Jefferson had problems getting resupplied. State troopers stopped supply trucks from Cardinal Health and Baxter Healthcare headed to the hospital, Couey says. Staff sought supplies at a nearby Tenet hospital that had been evacuated.

“We had no problems receiving supplies until the disaster struck, but the Louisiana state police had several supply trucks turn around. We did not think that was proper,” Couey says.

“Our feeling is that help is now here, but it was 7 days too late. The response at the federal level and even the state was terrible.”

He was told state police were worried looters would hijack the trucks.

“They didn’t have security,” he says. “We felt they should have let them get through to the hospital where we were trying to save people. We did not understand why the enforcement authority didn’t get it straight.”

Cardinal spokeswoman Donna Gaidamak says supply trucks now have police and National Guard escorts.

“We have been able to make dozens of deliveries to hospitals that can receive orders,” Gaidamak says. “We are supporting more than 20 hospitals that are treating hurricane victims.”

Surgery goes on

Ochsner performed emergency surgery every day but Monday, running 2 of its 28 ORs. The hospital, which sits 8 feet above sea level, was not flooded. Ochsner was on generator power for 4 1/2 days and had limited water from its own well. Power was restored Sept 2, along with air conditioning. A week after the storm, Ochsner had 150 patients, down from 450 when the hurricane struck. About 200 were evacuated.

The hospital performed its first post-hurricane open-heart procedure Sept 7 and planned to resume transplants Sept 18, depending on availability of airspace.

One of the few buildings in the area with air conditioning, Ochsner was serving as a haven for rescue and relief workers.
Security breakdown

Robert Minkes, MD, chief of pediatric surgery at Children’s Hospital of New Orleans, says the 201-bed facility, 12 feet above sea level, could have stayed open if it had received security.

“I was doing surgery by Tuesday afternoon (Aug 30), and we were fully functional,” Minkes said in an interview. Some flooding occurred after a water pump broke down but that could have been replaced, he says.

“We had to evacuate Thursday morning after we could not get security to protect us from the looters and carjackers.”

He adds: “Several hospitals could have stayed open, but we were obstructed by not getting help from police and FEMA (the Federal Emergency Management Agency). Our entire staff was there. Nobody jumped ship.”

Weathering the storm

Preparing for the storm was relatively simple—Ochsner has readied for hurricanes 3 times in the past 2 1/2 years, says Chris O’Connor, vice president for clinical operations.

A 36,000-gal tank fueled 3 major generators, though 2 were lost at one point, leaving the hospital without air conditioning for 2 1/2 days until repairs could be made.

“You can never simulate the need like this storm presented to those generators,” O’Connor says. The spare part needed for one was brought in by a flight nurse returning from a run to Alabama.

Ochsner relied on 2 backup radio systems for communication and had e-mail and an overtaxed land line throughout the crisis.

New Orleans’s cell phone infrastructure was decimated.

The hospital had about a week of medical-surgical supplies on hand and was able to extend the inventory because the demand was reduced.

Bringing in Team A

As part of its disaster plan, Ochsner called in essential personnel on Sunday, Aug 28. That included the OR’s Team A, with 4 RNs, 4 surgical technologists, 2 support staff, and a volunteer clerk, as well as Kathy Pratt, RN, MBA, CNOR, director of surgical services. They would stay for 7 days.

“Never have we been essential for so long,” she says. The team had a variety of skills so they “could do anything that came through the door,” including cardiovascular, orthopedic, neuro, and general surgery.

Only 1 autoclave was available because of a lack of steam pressure, and there wasn’t enough water to run the washer-sterilizers. All instruments were washed by hand.

“We all pulled together,” says Pratt. “We actually put family members to work in sterile processing,” teaching them to wash instruments and wrap instrument sets.

Within a few days of the storm, Ochsner had set up shuttle buses to Baton Rouge that began bringing in relief staff. They are working 5- to 7-day stints of 8- to 10-hour shifts.

The disaster plan rotates the duty for Team A. This team won’t serve as Team A again for another 5 activations.

“Overall, the plan worked well. I told the team they’re my heroes,” says Pratt, who herself was at the hospital for 9 days and took 2 off before coming back.

Within a couple days of the storm, she began getting calls from other staff who wanted to come in to give their colleagues a break.

A critical factor during the crisis was having team leaders who could make decisions on the front lines, O’Connor says.

“I think everybody believed our organization was bureaucratic and hierarchical before this storm. I think this has proven people are empowered to make ground-level decisions,” he says, adding, “I couldn’t be more proud of the team and their ability to step up.

“We have to be dynamic and accept the fact that we don’t have all the answers,” he noted. “There is a greater acceptance of working in the ambiguity that exists today.”
Challenge of recovery

Recovery will be more challenging. “There’s no book we can turn to for this,” O’Connor says. The hospital’s patient population has left, and it’s not known when they can return.

Many employees have lost homes. As of Sept 9, 900 of the system’s 7,000 employees still had not been heard from. Pratt knows some are in shelters in Houston; others live in rural areas where there still is no communication.

“That is one of the challenges we are working through—documenting who is reachable, who is missing, and who is able to come in to work,” O’Connor says. The hospital has a page on its Web site where employees can register if they have Internet access. With a number of satellite facilities, Ochsner can offer staff and families temporary housing.

Sheltering employees

North of Lake Pontchartrain in Hammond, La, 260-bed North Oaks Medical Center also stayed open, and its ER took critical patients. The hospital continued only life-threatening surgery.

“We were without electricity for 3 days on generators,” says Michele Sutton, community resource officer. “For a while, we were cut off without phones, electricity, and roads, and we were under a curfew.”

By Sept 8, some parts of the area were in the 11th day without power, and half of the phones were still out, making it hard for surgeons to communicate with patients who were still scheduled for elective surgery.

As part of its hurricane plan, North Oaks implemented its “shelter-in-place” plan for employees. Shelter-in-place means providing a safe, interior space for refuge in a disaster.

“We provided rooms, food, and day care around the clock,” Sutton says.

Many employees no longer have homes. “They are staying here until they can make other arrangements,” she says. The hospital has started an internal drive to help with clothes and other needs.

“Shelter-in-place has been of tremendous assistance. It helps our employees feel comfortable because they know their families are safe.”

The 24-hour day care has been especially helpful, she says. “If you’re a single parent working 7 am to 7 pm, what do you do? In this situation, you don’t want to leave your child with someone else.”

(A Red Cross shelter-in-place fact sheet is at www.redcross.org/services/disaster/beprepared/shelterinplace.pdf.)

Low on gas

In Jackson, Miss, about 200 miles north of New Orleans, in the days following Katrina, 2 big problems were lack of gas and nonfunctioning phones and pagers.

“We’re trying to get to some semblance of normal,” said Kemp Poole, director of surgical services for the Mississippi Baptist Health System in Jackson, reached on Sept 1. The hospital was without water for 2 days and on generator power for a while.

The hospital planned to resume elective surgery, but 60% of its patients didn’t arrive, and the staff couldn’t communicate with them. Supplies were running low.

“The roads are in pretty good shape, but gas is the biggest problem,” Poole said. Vendors were having trouble getting trucks through. At gas stations that were open, lines were hours long.

“I’ve suffered through snow storms, but here it’s hard to see the light at the end of the tunnel. This is so widespread,” Poole said.

Field hospitals set up

Scenes like these were being played out at hospitals across Louisiana, Mississippi, and Alabama, the 3 states hardest hit by Hurricane Katrina. During the first week, health care personnel cared for thousands of people in hospitals, makeshift clinics, and on flooded streets and in broken neighborhoods.

FEMA deployed 6 to 40 field hospitals, each staffed by about 35 personnel in Disaster Medical Assistance Teams (DMATs), says a FEMA spokesman. Questions
continue about whether FEMA acted quickly enough and with sufficient resources.

One of the DMAT-staffed field hospitals was on West Jefferson’s front lawn. Two others are at the Louis Armstrong New Orleans International Airport and Louisiana State University in Baton Rouge, about 80 miles northwest of New Orleans.

“They have a MASH-type setup with 6 to 8 tents totally enclosed in compounds,” Couey says. The role of the DMAT—a unit that includes physicians, nurses, emergency medical technicians, mental health, and support staff—is to triage patients coming to West Jefferson’s ER. DMATs are designed to be self-sufficient for 72 hours.

As of Sept 5, Louisiana had 30 DMATs, and Mississippi had 11. On Sept 6, Department of Health and Human Services (HHS) Secretary Mike Leavitt announced admissions to field hospitals were slowing down, and local hospitals would soon be able to take over.

**National disaster network**

Backing up front-line hospitals are hospitals that are part of the National Disaster Medical System (NDMS). The NDMS includes dozens of hospitals in a 12-state region with more than 2,600 beds available and more than 40,000 nationwide (www.ndms.dhhs.gov).

The NDMS is a cooperative program that supports local medical care when an emergency exceeds the scope of a community’s resources, says Natalie Rule, an NDMS spokesman. FEMA’s DMATs are also part of the NDMS.

NDMS, previously part of HHS, became part of the Department of Homeland Security in 2003. FEMA, also now part of Homeland Security, coordinates the NDMS.

A crucial aspect of the medical relief effort is the transfer of patients from the disaster area to hospitals that are part of the NDMS system, says Ed Martinez, assistant vice president for the National Association of Public Hospitals, Washington, DC.

Once patients are stabilized at field hospitals, they are evacuated to airports across the country, says Jessica Badger, a spokesman with US Surgeon General Richard Carmona’s office.

At the receiving airport, patients are met by a local medical team that triages patients and matches them with a participating hospital. Patients are then transported to the hospitals.

More than 2,000 patients had been evacuated from the New Orleans airport to NDMS hospitals. Eventually, plans call for restoring another 1,000 beds in the New Orleans area.

“The main hospitals in New Orleans, Charity Hospital and Tulane (University Medical Center), had to completely evacuate,” says Martinez, adding that several previously closed hospitals in the region may be reopened to house patients on an emergency basis.

“We have lots of elderly people on dialysis, chemotherapy, and with chronic conditions. They are coming with no medications and no records,” he says.

Thousands of health care volunteers at more than 632 hospitals signed up to send personnel, equipment, and supplies to the disaster area, according to HHS on Sept 8. But HHS warned hospitals they may not be deployed for several weeks because of logistical issues.

Hospital associations are assisting the surgeon general’s effort through a Web site called Hospital Relief Efforts at www.hospitalreliefforts.org.

“We got an incredible outpouring of support,” says Alicia Mitchell of the American Hospital Association.

—Jay Greene

—Pat Patterson

*Jay Greene is a freelance writer in St Paul, Minn.*

*Kathy Pratt is willing to talk to OR managers about Ochsner’s disaster planning. E-mail her at kpratt@ochsner.org*