A Week We Don’t Want to Forget: Lessons Learned from Tulane

Jack O. Bovender Jr., FACHE, and Bill Carey

S U M M A R Y • By the time I walked into the conference call at about 7 a.m. on Tuesday, August 30, HCA’s Tulane hospital was surrounded by between four and six feet of water, depending on the side of the building. The water was slowly rising. An estimated 1,300 people were trapped at Tulane Hospital. No CEO has ever had as much reason to be proud of his company as I did during the next few days. We safely evacuated Tulane’s patients, staff members, and family members, coordinating more than 200 helicopter sorties to and from Tulane in the process. We transferred every patient to a waiting hospital and took nearly every staff and family member to an HCA-run shelter in Lafayette, Louisiana, where they were bathed, fed, inoculated, given shelter, given access to prepaid cellular phones, and sent where they needed to go.

This, I believe, was one of HCA’s greatest hours, but we also learned many lessons from the catastrophic event. Although we hope and pray that nothing like this ever happens again, the things we learned can be of use to the healthcare community at large.

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On Monday evening, August 29, 2005, we at HCA’s corporate office felt pretty good about the way we had dealt with Hurricane Katrina. That morning, the Category V storm had slammed into the Gulf Coast, threatening more than a half dozen of our hospitals and the communities that they served in Louisiana and southern Mississippi. After the storm cleared, the Garden Park Medical Center in Gulfport appeared to be our hospital in greatest need. The hospital building there had survived intact, but the community surrounding Garden Park had been devastated. Many of our executives spent much of Monday in our hurricane “Command Center,” sending extra water, food, fuel, supplies, and security to Garden Park.

It was a tough day. But by Monday night, it looked like we had our arms around the problem.

The moment I walked into the office Tuesday morning, I could sense that something was very wrong. Several of our executives, including Richard Bracken (president and chief operating officer) and Sam Hazen (head of HCA’s western group of hospitals), were in the Command Center, listening to a voice on the speakerphone. At the other end of the line was Mel Lagarde, head of HCA’s hospitals in Mississippi and Louisiana (known within the company as the Delta Division). Lagarde, who was calling from the HCA-owned and operated Tulane University Hospital and Clinic, was explaining the problem.

Sometime during the night, Lagarde said, water began accumulating in the streets of New Orleans. It had taken hours to figure out what was causing the flood. Apparently a levee, or levees, had failed.

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By the time I walked into the conference call (about 7 a.m. on Tuesday), the hospital was surrounded by between four and six feet of water, depending on the side of the building. The water was still slowly rising. Because of this, Lagarde and Tulane CEO Jim Montgomery had decided a few hours earlier to start evacuating critical patients by helicopter. The first helicopter was on the way, and it would soon be landing on the top level of the Saratoga Garage, adjacent to the main Tulane Hospital building and connected to it by a bridge on the second floor. The garage had never held a helicopter before.

At that time, an estimated 1,300 people were trapped at Tulane Hospital. Of the 121 Tulane patients, 21 were in critical condition. An additional 60 medically fragile people had been sent by the Office of Emergency Management to Tulane from the Superdome the night before the storm hit. Other inhabitants included patient’s family members, Tulane staff, family members of Tulane staff, Tulane University Medical School professors and students, and even pets (71 of them, to be exact). They appeared to be safe, for the moment. Lagarde estimated that they had enough food to last maybe two days.

After we heard Lagarde’s report, we prioritized what needed to be done. Obviously, the top priority was to get everyone out. To achieve this, there were dozens of immediate crises to be tackled at once:

- the need to get as many helicopters as possible to participate in the evacuation;
- the need to get water, food, equipment, and additional fuel to Tulane;
- the need to find hospital beds for the patients being evacuated, and to help coordinate the evacuations where needed;
the need to get 1,200 non-patients away from the hospital to a place where they would be safe, and a place where they could be cared for if they, too, needed medical attention;

the need to find accommodations for all the patients’ families, staff members, and staff members’ families;

the need to help people at Tulane communicate with their loved ones; and

the need to coordinate all this.

There was also the need to comply with federal regulations, such as the HIPAA regulations that require that patient information be kept private in the midst of the crisis.

Before people began shifting into how to accomplish all these individual goals, I made two things clear. The first was that we were operating under that old military axiom that says, “Leave no one behind.” As I told someone later, we were not going to lose these patients. We weren’t going to lose any staff members. We weren’t even going to lose a dog or cat.

The other thing I said is a lesson that we at HCA had learned during previous hurricanes. If we have got government help, so much the better. But we were going to operate under the assumption that government help would not arrive in time, and that we had to rescue our own people.

No CEO has ever had as much reason to be proud of his company as I did during the next few days. We safely evacuated Tulane’s patients, staff members, and family members, coordinating more than 200 helicopter sorties to and from Tulane in the process. We transferred patients to waiting hospitals and took nearly every staff and family member to an HCA-run shelter in Lafayette, Louisiana, where they were bathed, fed, inoculated, given shelter, given access to prepaid cellular phones, and sent where they needed to go. We also managed to help patients, physicians, and staff members of other New Orleans-area hospitals—most notably Charity Hospital and Chalmette Medical Center.

All the while, the people at Tulane remained calm. They stayed at their posts. They were patient. They performed brilliantly, in spite of indescribable heat, a constant state of uncertainty, and the occasional sound of gunfire nearby. It is a remarkable tribute to Tulane’s doctors, nurses, technicians, and administrators that they did not lose a single patient.

This, I believe, was one of HCA’s greatest hours.

But as we near the first anniversary of the Katrina flood, this is no time to pat ourselves on the back. We, too, received help—help from staff members and doctors who did things way above and beyond the call of duty; help from military pilots who got involved in the airlift later that week, and from the officers who controlled them; help from volunteers, from random state troopers, and from individual National Guard members; help from citizens, some of whose names we will never know.

We also learned many lessons from this catastrophic event. And, although we hope and pray that nothing like this ever happens again, we hope that the things we learned can be of use to the healthcare community.

**Preparation**

Disaster preparedness is something all HCA hospitals do—especially the ones in hurricane-prone areas such as the Gulf Coast. This isn’t the sort of thing that our
people roll their eyes about. When the hurricane season began, Tulane Hospital was stocked with enough water for five days. Hospital CEO Jim Montgomery told every division of the hospital to review its individual hurricane plan. Every office checked to see if it had enough flashlights and batteries. Extra pallets of rags and sheets were sent in. Plant operations director George Jamison checked to make certain that the hospital had an ample supply of kitty litter—1,500 pounds of it.

The stockpile of kitty litter might have seemed odd at the time. It wouldn’t seem odd during the Katrina flood, when the hospital lost running water (and with it, the ability to flush toilets).

During the days leading up to Katrina’s landfall, HCA’s design and construction division saw to it that Tulane, like all other hospitals in the storm’s path, was outfitted with shutters to protect some of the windows from hurricane-force winds. The hospital’s dietary department tried to stock up on food. Security made last-minute preparations to upgrade its weaponry if necessary (hurricanes can quickly turn large cities into dangerous places).

Whenever you prepare for a natural disaster, you worry about the electrical system. The Tulane building, of course, had diesel-powered emergency backup generators for times when the local utility went down. Unfortunately, those backup generators were fixed to the ground floor of the hospital structure—this in a city located below sea level and adjacent to two large bodies of water.

HCA makes it a regular practice for top executives to remain in the facility throughout natural disasters, establishing a “Command Center” in a central location at the hospital. Because of this, in the days before Hurricane Katrina, HCA’s design and construction division sent 1,500-kilowatt generators (so large they sat on the bed of a tractor trailer) to several New Orleans-area hospitals. To fuel the back-up generators, HCA had about 500 pounds of diesel fuel sent to each hospital. Meanwhile, a much larger fuel supply was stationed at Lakeview Regional Medical Center in Covington, which, we believed, could be shuttled to other area HCA hospitals after the storm came through.

Since the electrical components of the tractor-trailer generator sat about six feet above the ground, Tulane figured its “generator on wheels” would sustain a certain amount of flooding. The only backup after that were three portable gas generators, which had a very limited capacity.

Personnel Preparations

HCA hospitals carefully plan which people will be on duty when foreseeable natural disasters strike. People assigned to the “A Teams” are told to bring bedding, extra food, and toiletries when they come in for such situations. They are also asked to make arrangements to take care of their wives, husbands, children, parents, and pets in advance. But, of course, that isn’t realistic, which is why many family members descended on Tulane Hospital in advance of Katrina.

The patients have to be prepared as well. In the days before Katrina, doctors worked hard to discharge and transfer as many of the sick and injured as possible. By Saturday, the patient count was down to 121—a low number considering the hospital’s usual population at that time of year.
As for the hospital administration, HCA makes it a regular practice for top executives at the hospital to come into the facility and remain there throughout natural disasters, establishing a “Command Center” in a central location at the hospital. Once the Command Center is established, it becomes the heart of the hospital in much the same way a Combat Information Center becomes the heart of a Navy ship in wartime. All phone calls are routed into the Command Center, all department heads report to the Command Center, and the place is staffed 24 hours a day.

That weekend, as Katrina closed in on New Orleans, there was no shortage of things for people to do in the Command Center. Everyone who was staying in one of the hospital buildings was asked to sign in and get a green armband, identifying them as someone who belonged to Tulane. They were given briefings about when meals would be served. They were assigned a place to sleep.

On Sunday, anticipating a storm surge, the hospital staff moved Tulane’s emergency room from the ground floor to the third floor, the pharmacy from the ground floor to the fourth floor, and the food service area from the ground floor to the second floor. Then, only hours before the storm hit, the Office of Emergency Management (OEM) asked Tulane if it could stage a Disaster Medical Assistance Team (DMAT) unit at the hospital. The administration agreed. Because of this, 58 medically fragile people, and their escorts, came to Tulane from the Superdome at the last minute. Unfortunately, the doctors, nurses, and equipment that the OEM said would arrive with the patients never came. So, in effect, Tulane’s patient count shot up right before Katrina hit landfall.

Lessons Learned

As we look back on preparations for Hurricane Katrina, here are some of the things that might prove useful to other hospitals:

- The experience with Hurricane Katrina should make all hospitals in flood-prone areas review the location of their emergency generators. At Tulane, moving the generators had been considered, but had been determined to be cost prohibitive. (In the wake of the storm, the hospital has decided to surround the plant with a waterproof wall.) Along the same lines, be certain—absolutely certain—that your plant operations staff knows how to hook up various kinds of emergency generators. Tulane’s did, but the time to find out is not during a disaster.
- Review the locations of your emergency electrical outlets (which are red in most hospitals). Most hospitals have very few or none of these outlets in the administrative area. This being the case, you might need to make plans to move your administrative office (or Command Center) to a different part of the hospital during a disaster.
- In a disaster situation such as a hurricane, be aware that many other types of healthcare facilities might shut down, affecting the medical needs of your hospital. In New Orleans, for instance, dialysis clinics shut down, affecting every hospital in the area.
- In hindsight, too many people were at Tulane Hospital and its connecting buildings during Hurricane Katrina. In the future, our hospitals will try to better control the number of people who come to the hospital during a hurricane. One way to do this is to balance
the hospital’s personnel needs with the employees’ personal situations. If, for instance, you have a nurse who is a single mother with six dependent children, she may not be the right person to be working during the hurricane.

- Make certain everyone in the building realizes that teamwork is the order of the day. “There weren’t any job titles,” said Dawn Guidry, Tulane’s food service director. Among the people who helped move mattresses that day was Sam Rozans, the 15-year-old son of one of our Tulane physicians. “I found that if I stayed busy that it helped the time go by,” he later said.

**Communication**

Communication is the most important thing in a disaster. No matter how well you prepare, things will go badly if you can’t talk to your people.

Given the situation, HCA had excellent communication with the Tulane Hospital during and immediately after Hurricane Katrina. Notice I said “given the situation.” This isn’t to say that all the phones worked, because they didn’t. This isn’t to say that there weren’t communications problems, because there were. But, in general, considering the hospital was surrounded by water and considering the entire Gulf Coast was a wreck, it is remarkable that we were able to talk to Tulane with such ease.

**Lessons Learned**

Nevertheless, many lessons were learned in communication along the way. Here are some pieces of advice our people picked up that week:

- Assume cellular phones won’t work in a disaster. They might, but assume they won’t. Also, a general rule of thumb: cellular phones programmed on area codes outside the disaster area work better than cellular phones programmed on area codes within the disaster area.

- Keep in mind that when a building loses electrical power, it looses all digital phone lines. That being the case, it is important the hospital keep some old-fashioned analog phones on hand. The folks at Tulane found them to be quite invaluable. As remarkable as it may sound, land lines at Tulane still worked after the flood.

- People at Tulane had a difficult time getting satellite phones to work reliably. Because of this, HCA’s Tallahassee office sent in amateur radio operators, equipped with hand-held satellite radios, to help coordinate communication between HCA executives and Tulane. “These were volunteers, who did it all for the good of amateur radio and because they wanted to help,” said Randy Pierce, EMS (emergency medical systems) radio communication coordinator for the state of Florida, who helped arrange the effort. The distinction between satellite phones and satellite radios is a subtle one, but something that at least one person at your hospital should understand.

- With so many things going on, it was vital that HCA’s Command Center at corporate headquarters in Nashville communicate regularly with Tulane’s Command Center. The two command centers began having regularly scheduled phone calls (such as on the hour) to pass on the latest information and devel-
opments. In a situation like Katrina, it is vital that the people involved in these conversations keep legible notes and a semi-official log that stays near the phone. The person taking one call might not be the person taking the next.

One other thing we learned about disaster communications: After Katrina, the infrastructure of the city of New Orleans was so devastated that it was practically impossible for the people at Tulane to make a local phone call. People at Tulane were able to call HCA’s corporate headquarters in Nashville, or a reporter in Atlanta, or a loved one in Ohio. But no one in the building was able to call Charity Hospital across the street, University Hospital across town, or the New Orleans police department.

Because of this, doctors and officials at Tulane did not immediately realize that other hospitals in downtown New Orleans needed help as much as they did. When HCA and Tulane officials learned of other hospitals in need, we consistently offered to help, which is why several of the more serious patients from Charity Hospital evacuated from the Saratoga Garage on Wednesday, Thursday, and Friday of that week. But this process could have worked better. In the future, we hope that in a crisis situation such as this, hospitals talk to each other more than they did during Katrina. In a disaster situation, communication between neighboring hospitals must improve.

Airlift
The most obvious advice in this regard is to ask yourself whether your hospital has any airlift capability. Most new hospitals have helipads, but many older ones don’t. Tulane Hospital did not. There had been talk about building a helipad, but those discussions never went far because the hospital was so close to the Superdome, which has plenty of room to land a helicopter.

As it turns out, Tulane CEO Jim Montgomery had done some thinking about a helipad. He had even gotten a structural engineer to look at the Saratoga Garage to see whether the building could hold a helicopter. That engineer said it would. While the flood waters were rising in New Orleans, that tidbit of information was priceless.

Lessons Learned
Some other things the Tulane airlift made us consider:

- When the need for an airlift became obvious, the job of finding helicopter companies and sending them to Tulane fell to Chuck Hall, head of HCA’s North Florida Division in Tallahassee. Hall and people who work in his division started tracking down every helicopter company they could find in the United States. They did a splendid job. This raises a question: Does your hospital have a list of helicopter companies in the region?

- Once the helicopter flights began, the Tulane staff needed someone to stand on the parking garage deck and direct helicopters as they landed and took off. This duty was handled by two young hospital vice presidents, and later by a pilot from a civilian helicopter company who agreed to stay at the garage for the duration of the airlift. They all performed masterfully. But it is worth pointing out that at first, Tulane’s two vice presidents had to improvise. Perhaps, in the future, each hospital should have people trained to help
direct helicopters, or at least some literature handy that shows the various hand motions.

• Assuming you have a place for a helicopter to land, does someone who works at the hospital know the exact latitude and longitude of the landing spot? Some of the first helicopter companies we sent to Tulane had to look this up.

**Transfers and Recovery**

The millions of Americans who were glued to Fox News and CNN during the days after Katrina were frustrated about why the government couldn’t just get people out of New Orleans. In our case it wasn’t that simple. A hospital can’t just put everyone on a bus heading north. Every patient that left Tulane had to be taken to a hospital that was willing to accept him or her.

Credit goes to many hospitals in the area that agreed to accept patients, some on a moment’s notice. Many of these hospitals were HCA-owned, such as Lakeview Regional Medical Center in Covington; Women’s and Children’s Hospital in Lafayette; Southwest Medical Center in Lafayette; Rapides Regional Medical Center in Alexandria; and Medical City Dallas Hospital in Dallas. But some weren’t owned by HCA. For example, Texas Children’s Hospital in Houston, Texas, not only accepted many of Tulane’s pediatric patients, it sent its aircraft to Lafayette to help transport some of those patients.

HCA’s people in Lafayette bore the brunt of the work when it came to taking care of Tulane’s evacuees after the evacuation. What they did was nothing short of miraculous. On Thursday and Friday of that week, practically all of the 1,200 staff and family members who had been at Tulane during the storm were evacuated to Lafayette (first by helicopter to the Louis Armstrong Airport, and then by bus). When they got to Lafayette, each of these people were given food and water; tetanus and Cipro shots; a new set of clothes; a shower; an operating cell phone; and a place to sleep. When they woke up, arrangements were made to transport each of them to where they needed to go. In some cases, all they needed was a ride back to the New Orleans suburbs, but some needed to go further away (HCA purchased 200 plane tickets, including some for people who worked for other hospitals).

These shelters were set up and operated by HCA employees, by family members of HCA employees, and by volunteers. And the evacuees weren’t all affiliated with Tulane. Among the people that were cared for in these shelters were 138 employees of Chalmette Medical Center, located near New Orleans. In the aftermath of the flood, Chalmette’s staff was evacuated by military helicopters to the Louis Armstrong Airport, which is where some of our people ran into them on Thursday night. As the airport became packed with evacuees and order deteriorated, Chalmette officials asked our people for help. Our people took Chalmette’s employees to HCA’s shelters in Lafayette, where they were cared for. “We were treated the same as everyone else, and we are very grateful for that,” said Tim Coffey, Chalmette’s former chief operating officer (the hospital has not reopened).

**Lessons Learned**

A couple other lessons we learned when it came to transfers and recovery:
• Moving some patients was hard. There were at least two who were obese to the point where moving them from the hospital to the helicopter, and moving them onto the helicopter itself, was difficult. There were also two patients awaiting heart transplants, both completely dependent on electrically powered, 400-pound ventilator machines that pumped their hearts. So in the process of arranging transfers, be prepared for the problems that special cases cause.

• Pediatric doctors at Tulane were worried that small children put on a helicopter in New Orleans might not make it to the right hospital. These doctors took pens and wrote things such as “Take me to Texas Children’s Hospital” on the arms, legs, and foreheads of children as they were leaving.

• When Tulane sent its chief operating officer Kim Ryan to Louis Armstrong Airport to expedite the transfer of staff and family members from helicopters to buses bound for Lafayette, no one anticipated just how bad things might get at the airport. In a situation such as that, if you send one of your people away from the main group, send an armed security person with them.

• Finally, I should say something about the news media in a disaster situation. Under normal circumstances, reporters and film crews are given limited access to a hospital. When they are given access, they are escorted, so that they’ll understand what they are seeing. This wasn’t possible during the Tulane airlift. Because of this, some of the television reports about the Tulane evacuation misstated what was taking place at the hospital on Thursday and Friday of that week. So be it. Obviously, taking care of patients, staff, and family members is a higher priority than worrying about what is being broadcast on the national news. But just keep in mind in a situation like this that the cameraman and reporter in your midst may be broadcasting to a national audience.

Gratitude

HCA will never be able to thank the many people who helped accomplish the rescue of the Tulane Hospital. A few months ago, the company commissioned author Bill Carey to research and write a book about the airlift. He has repeatedly found stories of people who acted courageously and who went above and beyond the call of duty, and although most of them work for HCA, many of them don’t. Among them:

• Civilian helicopter pilots flew around the clock under grueling conditions to get everyone out as fast as they could. Some of these pilots logged more than 50 flight hours in four days. Some flew at night. I will forever be amazed at the very idea of a helicopter flying low over a pitch-dark city.

• Helicopter crews with the Louisiana National Guard, on Friday of that memorable week, “finished off” our airlift with huge CH-47 “Chinook” helicopters. In the weeks and months following the airlift, it has proven nearly impossible to get the definitive story of how HCA got these Chinooks. Many people made phone calls and had conversations attempting to get them, and someone finally succeeded in that effort. We are grateful for their help.
An operations supervisor at the Louis Armstrong Airport named Bob Loup spent two days escorting HCA buses across the runway, making certain that the Tulane evacuees made it from the congested airport to HCA shelters in Lafayette.

Louisiana National Guard soldiers helped ferry about 40 critical patients from Charity Hospital to Tulane Hospital on day three of the evacuation.

Fox News reporter Jeff Goldblatt saw to it that a small group of parents of Tulane pediatric patients made it from the center of New Orleans onto a chartered bus that took them to Lafayette.

Hundreds of volunteers helped operate HCA shelters, provided security on HCA buses, and hosted Tulane staffers and family members during the days, weeks, and months after the flood.

We at HCA are proud of Tulane. We are proud of our employees. And we are proud of New Orleans, and our country.

On February 14, 2006, a large American flag that had been on the side of the hospital building during the airlift was taken back to the roof of the Saratoga Garage by one of the same pilots who had taken part in the airlift. The flag, properly folded, was taken from the helicopter, carried to the roof of the hospital, and hung over the building once again. I am not exaggerating to say that some of the hospital officials, doctors, and Tulane staffers at the ceremony shed tears at the sight of that flag.

A few hours later, Tulane University Hospital and Clinic reopened.

If anything like Katrina ever happens again, Tulane will be even more prepared than it was last time to handle a disaster. We hope that the same can be said of the entire healthcare community.