Hurricane Katrina: Pharmacists Making a Difference

Jef Bratberg, PharmD, BCPS

The New Orleans Hornets basketball arena floor smelled of heat, sweat, and doom. Fire alarms were still screaming, albeit in an ever-decreasing frequency and pitch, as their strobes called for attention that wasn't going to arrive. The only constant source of light was red exit signs around the ring of the arena. Two Disaster Medical Assistance Team (DMAT) tents, surrounded by dozens of black Federal Emergency Management Agency (FEMA) tote boxes, were barely visible at one end of the arena. Opposite the loading dock entrance sat abandoned DMAT sport utility vehicles (SUVs), 3 feet of dark brown floodwater lapping at the loading dock beyond. My DMAT team surrounded the commander and listened to his message: The patients we would see were suffering from disorders exacerbated from stress and lack of drugs for 5 days.…

My first mission as a disaster pharmacist had begun.

A Team Forms

I completed my deployment prerequisites for the Rhode Island DMAT (RI-1 DMAT), a part of the National Disaster Medical System under FEMA and the Department of Homeland Security, in the summer of 2004. The team was activated for Hurricane Frances that summer, but I was unable to participate because of my employment commitments at the University of Rhode Island College of Pharmacy.

In the summer of 2005, I advanced my disaster training at the team's biggest event—the Rhode Island National Guard Air Show. I met and worked with many teammates who were to become my Gulf Coast "family."

In late August, chief pharmacist Megan Sliney and I met at the DMAT office to discuss drug inventory and management. Although August was one of our team's three on-call months, head nurse Lori Tucker joked that day that no disaster could happen the next weekend—two members of the team were getting married! On that gorgeous Saturday, my mother called to ask if I were going to be

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activated for Hurricane Katrina, a Category 1 hurricane that had caused minor damage after making its first landfall in southern Florida. I found this unlikely because I would have been already called up if it were truly severe.

The next morning, I woke up to polish fall semester lectures for the infectious diseases courses I teach. After glancing at the CNN Web site and learning that Katrina had reached Category 4 status, I knew the telephone would soon be ringing. Lori called first, and I asked if Megan was going to go; she said yes. But after thinking about my many obligations at the university, I declined her invitation for this mission. I was just too busy to participate.

However, after a few minutes of thought, I changed my mind, and I was promptly placed on the FEMA roster. I learned that the team was leaving very early the next day, and I hadn't even started packing. In the next 16 hours, as Hurricane Katrina reached Category 5 status, I bought hip waders, assembled my gear, and completed the essentials for my classes until my kind department chair picked me up at 5 am to drop me off at the airport. I began the physical and emotional journey of a lifetime.

Hurry Up and Wait

As the team winged its way to Alabama, Hurricane Katrina, with 145 mph winds, made its second landfall, this time near the mouth of Louisiana's Pearl River. Coastal communities were obliterated by the storm's power, and low-lying areas became a part of the ocean. The storm surge swamped parts of New Orleans immediately, sending residents to their roofs, and breaches formed in the levees protecting New Orleans, which would soon essentially be part of Lake Pontchartrain, flowing and ebbing with the tides.

By the time we met in Anniston, Ala., on Monday afternoon with several team members who had arrived the prior day, Katrina was making its third and final landfall near Pearlington, Miss. On Tuesday we packed up and convoyed to Camp Shelby, Miss., with the intent of deploying to devastated Biloxi. Federal law enforcement officers escorted our SUVs and three FEMA trucks through a Mississippi night made darker by lack of power in 80% of the state and more dangerous by pines that had reached skyward a few hours earlier but were now lying on the ground a few feet from the highway.

At 5 am on Wednesday morning, we arrived at Camp Shelby and collapsed in the early morning heat at its former World War II prisoner-of-war barracks. We ate military meals ready-to-eat (MREs) and experienced refreshing cold showers. We waited for orders. Whoever put Baton Rouge in the betting pool won because that night we drove there past checkpoints and signs reading "I-10 Closed," "New Orleans Closed," and "Emergency Personnel Only." After

arriving at Louisiana State University (LSU), we rested for a few hours on a gymnasium floor.

I will never forget watching that Thursday morning as a continuous stream of military helicopters arrived to drop off critically ill patients, presumably plucked from New Orleans rooftops. The overall activity was overwhelming—volunteers of every sort, including many LSU students, helping in every way. Megan and I helped the U.S. Public Health Service pharmacists dispense medications in the gymnasium hospital. I even remember that a volunteer physician accepted an IV–PO antibiotic switch recommendation. Even in disasters, interventions can still be made!

Watching televised reports of New Orleans descending into chaos, we anxiously awaited orders along with DMAT teams from across the country. Finally ours came: Go to the causeway to set up our hospital and provide medical care for thousands of people stranded there. Because of safety concerns in the increasingly dangerous New Orleans, we later were reassigned to the mission of a lifetime: Deploy to the basketball arena next to the Superdome and provide badly needed medical care for the remaining 6,000 evacuees who had been holed up for days in hellish conditions at the Superdome.

Its roof ripped away by Katrina's winds, the Superdome was a wreck, with water in its underground parking garages and human waste and in fact remains in its hallways. Nearby stood a Hyatt hotel, its windows blown out by the storm as proof that vertical evacuation was not enough. Both structures stood as symbols of the inadequacy of the emergency plans laid out for New Orleans. Like the levees, these structures perhaps could have withstood a Category 3 hurricane, but Katrina provided more than they could handle.

Our team's strong leadership successfully argued that the team should not deploy until both the indefensible causeway and the Superdome were secured by thousands of Army troops. We also wrangled 12 Federal Protective Service officers to guard our 35-person team (6 officers per 12-hour shift).

We went to bed with two instructions: don't shave because any cuts could provide entry for bacteria from the floodwaters, and because of security issues, pack only items that you are comfortable never seeing again—just in case we had to "bug out" as the previous team had. I chose food over my camera and cell phone (which had no signal anyway), one set of clean clothes, took my last hot shower for a long time, and slept on a mattress.

We're Here to Help

As many Americans rested up for a lazy Labor Day weekend, we were awakened that Friday morning at 4 am. Once we assembled the convoy, we hit the road under escort, driving through intersections without stopping until we reached

Interstate 10. Our first destination was the New Orleans airport, where we would leave our vehicles and hear from an assessment team about conditions at the Superdome.

The airport was truly a war zone. If I thought helicopters were landing frequently at LSU, that stream paled in comparison with the activity at the airport. Helicopters from every armed service delivered human cargo like bees dispensing pollen at the hive. The noise was deafening, and the number of people with body armor and large weapons outnumbered those without.

We boarded passenger vans thinking about the advice and insights provided by the assessment team ("the bathrooms are bad but not any worse than the worst gas station restroom"). Soon we were in New Orleans, the same city where 4 years earlier I started the process of joining the faculty at the University of Rhode Island during a Midyear Clinical Meeting of the American Society of Health-System Pharmacists. Despite the high level of security and assurances from my team commander, it was difficult to feel safe. I felt for my Leatherman knife more than once, wondering if I would need to use it.

We drove past a burning chemical plant on the Mississippi River and the wind-damaged downtown that spewed black smoke into the bright summer morning. Then I saw the people: people who had lost everything, drinking bottled water and eating scraps of food on freeway ramps and bridges around the Superdome, people who before had simply appeared as television images but were now giving us an inspirational thumbs-up. A new hope ran through me: we were here to help, and these people were happy to see us.

We drove down the exit ramp to the flooded streets surrounding the Superdome, moving past an abandoned DMAT van poking out of the water. The driver revved the engines and gunned the van to the arena's loading dock, nearly sputtering out when water splashed across the hood and against the back of the van. We made it. We were here.

Our priority was to enter the pharmacy, which looked like a well-stocked disaster itself. The pharmacy also looked like a scene from a ghost town: a half-filled amber bottle on a half-written FEMA prescription, awaiting its label and final check, greeted us inside. For the first 4 hours, I can't truly recall what I did, with my dehydration and caffeine-withdrawal headache exacerbating the heat, humidity, and the odor of human waste.

Good news—we didn't have to unpack our drugs! I had always hated checking in orders and other inventory tasks in the pharmacy. Thanks to the Oklahoma and New Mexico teams who were forced to abandon their drug caches, we would not need to unpack and transport dozens of pharmacy totes up several flights of dark, slippery steps. However, Megan and I still had to sort everything and

evaluate our quantities, posting three sheets of paper on the wall with duct tape (a lifesaver, especially in a disaster) that listed all the medications.

Memories to Last a Lifetime

Our team was thus lucky to have double the drugs available during our weekend at the Hornets Arena. We were also fortunate to have two community- and FEMA pharmaceutical cache-experienced pharmacists to operate the pharmacy and improve its organization.

Megan Sliney worked the first night shift. Per the DMAT motto, "Eat when there's food, drink when there's water, sleep when you can," I wandered down the dim, putrid maze of hallways and stairs, lit only by fluorescent tubes, to the VIP lounge/DMAT rest area. I placed my baby wipes, knife, eyeglasses, and deodorant on a small table in a booth and laid down to rest. I awoke around 7 am and returned to the pharmacy to relieve Megan. While she slept, I continued to organize the pharmacy, placing suspensions in one area, injectables in another, narcotics hidden in the back on boxes of diapers. We had boxes of injectable antibiotics, plenty of tetanus shots and insulin, albuterol inhalers, antibiotic ointment, and antifungal creams. I wrote labels and filled scripts for 5 days of drugs for patients evacuated from the Superdome and/or by helicopter. This policy was exasperating for both the prescriber and me, as we had no idea where the patients were going to go, and whether they would be able to get medication there! We also struggled with dispensing to military personnel who were deployed without medications. We did what we could, and they were grateful.

I remember counseling a gentleman who likely lost his eye after getting stabbed in his socket while trying to board one of the buses leaving the Superdome. We gave him a few Vicodin, and I could see that he was still in pain while waiting for alternate transportation. I showed him my handwritten label on the bottle and said that he could take two now. He shook his head and said, "These pills are all I've got. I'm going to save them."

On that morning after sleeping in the lounge, I was working in the pharmacy when suddenly I was told by other team members to shut and lock the door: shots had been fired outside, and we were locking down and performing accountability. I could open the door only for people who knew the password. After the "all clear," three people who had been shooting at helicopters were dead, and the survivor was treated at our hospital—stat cefazolin IV.

We dispensed all kinds of medications while deployed at the arena. Megan made a phenytoin admixture one night for a man experiencing intractable seizures. When our mental health professional asked what psych drugs we had, I told him haloperidol, fluoxetine, and nortriptyline. We dispensed haloperidol for

all psych patients who had depleted or lost their antipsychotic agents—and the federal cache wasn't designed to refill primary care prescriptions. The funniest request of our pharmacy was for Depo-Provera—for one of the reservists!

In our off time, we bleached the floor, rearranged cots, exchanged soiled cots for clean ones, dined on MREs, and marveled at our surroundings. At our door, I'll never forget the image of two police officers, personifying the definition of absolute exhaustion. They had been on duty for 5 days straight, but they only slept occasionally in their car; they were out of food and gas, and their radios were dead air. They said, "Thanks for being here," and we evaluated and treated them and then offered them a clean, dry cot for as long they needed one.

We stayed true to our motto: "RI-1 DMAT—We're there when you need us."

Beyond the Call of Duty

According to our patient files, our team treated more than 160 patients in just over 48 hours. Megan and I did more than dispense prescriptions; we organized, moved, and reset the pharmacy; guarded our supply of antidiarrheal medication and narcotics; and recommended treatments for a chronic obstructive pulmonary disease exacerbation from our limited formulary. Disaster pharmacists must indeed be resourceful. Yet even in these most dire of circumstances, we upheld key tenets of the Oath of the Pharmacist: making the welfare of humanity and relief of human suffering our primary concerns and applying our knowledge, experience, and skills to the best of our ability to ensure optimal drug therapy outcomes for the patients we served.

Pedialyte was one of the more common requests processed by our pharmacy, and we had quickly depleted all the stock left by the other DMATs. I knew that we had to break into RI-1's drug cache. With the pharmacy under constant, close supervision by our "samurais," the Federal Police Service "ICE" guys, I asked our logistics chief, Mark Palla, about getting into the "Refer" (the refrigerated truck) to get some Pedialyte from our cache. When Mark opened the back door of the "Refer," cool air blasted me. He rearranged some boxes and held the top of the cardboard tri-wall containing our pharmacy cache (minus narcotics) while I examined the red pharmacy totes. They still had their tie-downs attached, so with flashlight in teeth and knife in hand, I jumped into the tri-wall, cut the ties, tossed the flavored bottles of Pedialyte into the cramped walkway of the truck, and relieved Mark of the burden of holding the plastic cover of the tri-wall. Then I had to throw the bottles into a hand truck and carry them up the multiple flights of cement stairs covered in body fluids and slippery diesel fuel to reach the pharmacy.

And I used to hate inventory day at the pharmacy. ●