

# HEMNZ Bulletin

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## Katrina: An inevitable event that still surprised

*It was a broiling August afternoon in New Orleans, Louisiana, the Big Easy, the City That Care Forgot. Those who ventured outside moved as if they were swimming in tupelo honey. Those inside paid silent homage to the man who invented air-conditioning as they watched TV "storm teams" warn of a hurricane in the Gulf of Mexico. Nothing surprising there: Hurricanes in August are as much a part of life in this town as hangovers on Ash Wednesday.*

*But the next day the storm gathered steam and drew a bead on the city. As the whirling maelstrom approached the coast, more than a million people evacuated to higher ground. Some 200,000 remained, however—the car-less, the homeless, the aged and infirm, and those die-hard New Orleanians who look for any excuse to throw a party.*

*The storm hit Breton Sound with the fury of a nuclear warhead, pushing a deadly storm surge into Lake Pontchartrain. The water crept to the top of the massive berm that holds back the lake and then spilled over. Nearly 80 percent of New Orleans lies below sea level—more than eight feet below in places—so the water poured in. A liquid brown wall washed over the brick ranch homes of Gentilly, over the clapboard houses of the Ninth Ward, over the white-columned porches of the Garden District, until it raced through the bars and strip joints on Bourbon Street like the pale rider of the Apocalypse. As it reached 25 feet (eight meters) over parts of the city, people climbed onto roofs to escape it.*

*Thousands drowned in the murky brew that was soon contaminated by sewage and industrial waste. Thousands more who survived the flood later perished from dehydration and disease as they waited to be rescued. It took two months to pump the city dry, and by then the Big Easy was buried under a blanket of putrid sediment, a million people were homeless, and 50,000 were dead. It was the worst natural disaster in the history of the United States.*

*When did this calamity happen? It hasn't—yet. But the doomsday scenario is not far-fetched. The Federal Emergency Management Agency lists a hurricane strike on New Orleans as one of the most dire threats to the nation, up there with a large earthquake in California or a terrorist attack on New York City. Even the Red Cross no longer opens hurricane shelters in the city, claiming the risk to its workers is too great.*

This uncanny account was published in the National Geographic in October 2004. See [www3.nationalgeographic.com/ngm/0410/feature5/](http://www3.nationalgeographic.com/ngm/0410/feature5/).

Okay, while the forecast was not perfect and they got the body count and some of the fine detail wrong, the account sums up what everyone seemed to know, New Orleans was badly exposed to one disastrous event and completely at the mercy of two happening together.

Now is not the time and from our distance we are not in the place to start an inquest into

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what seems to have gone wrong prior to and after Hurricane Katrina blasted through the southern United States. We can look, listen, analyse the available evidence, then run the same rule over some of our major hazards. By all accounts New Orleans was a disaster waiting to happen but can we be smug when we consider our cities – Wellington, built on an active fault line and Auckland, perched on top of an active volcanic field?

Most media commentary on the composition of those left behind in New Orleans focused on the poor and disabled. Not everyone fitted that category. Many hospital workers and their families elected to stay, as they had done many times before as hurricanes threatened. Take Loren and Jeanette Vaughn. Jeanette worked as a nurse in the baby ward of the Methodist Hospital.

The Vaughn family were eating breakfast as the meteorologists made their penultimate correction to the course of Hurricane Katrina. Having previously given little thought to taking flight, the dire predictions for the coming storm seemed cause for concern and the couple briefly discussed whether or not they should leave New Orleans. They decided against it and instead, followed their standard hurricane routine. The Methodist was a storm-proof (sic), seven-story stone building in the upper half of New Orleans. Jeanette, Loren and their two children, Andrew and Jessica, would go there with her and sit the storm out before returning home.

It was the Vaughn family's own private emergency plan that had proven effective many times before. And one followed by many others. They packed up their valuables along with enough food and clothing to last them a week and drove their two cars, Jeanette's Chrysler van and Loren's Ford truck, up to the sixth floor of the parking garage opposite the hospital. They were ready, they felt, for Katrina.

The storm was more violent than any storm they had ever seen before, raging throughout the night, smashing some of the hospital windows out of their frames. In the morning, however, calm was restored and it seemed the worst was over.

Locals were prepared to sit out the hurricane, as they had done many times in the past. While the storm was worse than expected, they survived.

It was the water — after the storm — that beat them

On Tuesday, however, the dikes collapsed and the city was flooded. Water rose high enough to cover the floor of the building's second story. Reaching the Vaughn's two cars parked across the street was out of the question and they realized they were likely going to be there for awhile. Cut off from the news and the world outside, Loren tried in vain to find out how their house had held up. With no news available and cut off from their vehicles, the Vaughn family made the decision to



Not everyone abandoned the disabled and infirm



accept evacuation to the Convention Centre. Their disaster and that of all others evacuated there was about to begin.

What happened in the Convention Centre and Superdome has been well covered by the media. In this issue we focus on some of the personal accounts of health care workers who stayed with their patients, or when trapped set out to help those in distress. ✕

## Health Clinic for those stranded in Hotel

Infectious disease specialist Max Brito, MD, an assistant professor of medicine at the University of Illinois at Chicago (UIC), was attending a medical conference in New Orleans when Katrina struck. He and a few colleagues set up a triage centre in the lobby of their hotel and treated patients for four days before being evacuated.

Dr Brito said, "A group of around 15 healthcare professionals (physicians, nurses, physician assistants, and a pharmacist) attending an HIV conference were stranded in the Ritz-Carlton Hotel, in New Orleans during Katrina.

We got together as a group and talked to the hotel administration about setting up a "MASH" unit to provide care for the more than 1,300 people housed at the hotel. Since we had no medications, we talked to the New Orleans police about going into a pharmacy and obtaining life-saving drugs for our patients with chronic ailments. We composed a list of patients with chronic medical conditions and the needed medications, and several providers from our group went into a pharmacy and "borrowed" some essential medicines to treat those in need."

"In the first two days we saw more than 250 patients. The most common conditions were acute exacerbations of chronic diseases; for example, diabetes out of control and hypertension. In addition, there were patients with anxiety attacks, lacerations, diarrhoea, and dehydration. Fortunately, nobody died. Several people had to be hospitalized for chest pain and dehydration in Baton Rouge when we were evacuated, said Dr Brito. ✕

# “Hell was at Methodist Hospital in New Orleans East”

What was it like for health care workers trapped “on the floor” in their hospitals? Here is an edited personal account from Aurnyn. A nurse who survived a week on duty at the Methodist Hospital.

“I want to share my story of Hurricane Katrina with all of you. I am also doing it so I can have a recollection of what all happened while it was fresh in my mind.

The things I am going to tell you are still tough for me to grasp. After being stuck in a building for 7 days and having this centric view that the storm only happened at Methodist/New Orleans East and then seeing devastation in the whole city really kills me.

As for myself, I am alive. My Explorer is still under water; though my house is fine. I live in one of the only neighbourhoods in LaPlace, LA that has water and electricity. I believe our town got those things back first because we are where the military is stationed. My parents' house 5 minutes away is fine, but they are without power and water, so they are living at my place. My brother's best friend Ronnie and his mom are also living at my place because their house got crushed by a tree. My brother, my dad and myself are now unemployed. My hospital is under water and I am in Dallas.

Friday was a normal night at work. We were keeping at eye on hurricane Katrina in the gulf, but there were no worries. We had about 26 or so patients on the floor that night.

Saturday was MY planning day. Not once did Methodist tell me anything about mandatory overnight stays for essential personnel or about evacuation plans or anything. I decided that if I was going to make it to work on Sunday night, I would have to bring clothes to stay over Sunday during the day. I packed 5 days of scrubs, 4 days of lounge clothes/pjs, and toiletries, along with my camera. I tried desperately to get to sleep on Saturday afternoon, but I stayed glued to the news reports.

New Orleans tried to evacuate for

another semi-powerful storm last year, but the roads got insanely clogged. This was very important to me because I needed to get from LaPlace (which is west of New Orleans) to New Orleans for work. I convinced my brother to drive and lead me to New Orleans East (to Methodist) via the back roads.



**It took me 3 hours to go a 40 minute trip.**



**Sunday night while the team was still fresh.**

I worked Saturday night and hung out in a sleep room Sunday during the day. The storm began to roll in about 2 pm Sunday. Monday morning at 6:30 am all hell broke loose. During the night Sunday night, the wind picked up, the rain picked up, but I had NO IDEA that things would get so bad. About 6:30 that morning, the worst of the winds started. The eye wall (the western part of it at least) was going to be passing over us in about an hour, but the winds were already horrible. The lights had flickered all night long, but we still were running on electricity and not generator. We also had several “code red” calls that night because the fire

alarms kept tripping.

I was down on my floor getting ready to give report when I heard that the roof came off on the 6th floor and the ceiling caved in on a day shift person sleeping up there. That day shift person was my roommate. My sleep room had completely collapsed, and in it was all my belongings. My blankets, my towel, my toiletries and my camera battery charger were demolished. The room had full scale hurricane winds blowing through it. Luckily my roomie got out unscathed and saved my bag of clothes and my scrubs.

I went and surveyed the damage. The 6th floor was uninhabitable and they started moving patients to other floors. The electricity went and our back up generator clicked on. While I was walking down the hallway, I heard a co-worker of mine scream, then the fire alarm went off and the operator called another code red. I took off running towards 3 South and when I got to the end of the hall there was an 80ish year old lady laying in the middle of the hallway, pale as can be, looking dead with her husband laying over her and crying and screaming. Her window had exploded out due to the pressure, and she was being sucked toward the window until her husband grabbed her and kept her from flying away.

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Then our windows on 3 north began to blow. The ceiling caved in these rooms and the patients had to sleep in the hallways.

An out of breath nurse came up to me shaking and crying and pointed to another room and said “there’s still a patient in there.” I ran to the room and tried to open the door and I couldn’t budge the door. It was

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sucked shut. Steven and Chuck came up to me, forced the door open, braved the torrential winds and got the light fixture/roof/ceiling off of the patient and rolled him out in his bed.

Then our windows on 3 north began to blow. The ceiling caved in these rooms and the patients had to sleep in the hallways. The window in our nurse's lounge blew too and destroyed the room. I pulled patients out of rooms until 9:30 am that morning, and decided that I was going to find a place to sleep. All of the employee sleep rooms were either destroyed or full, so my 3 co-workers and I pulled up some space on the fifth floor lobby. The carpet was wet and hard and itchy (we had run out of linens by then), and there was constant traffic, screaming kids, etc. I did NOT sleep that day.

The storm was over on Monday at about 1 pm and patients were all safe. Not one person was hurt from the actual storm itself. When I "got up" for my shift, I looked outside and saw that we were surrounded by water. The water seemed like it levelled out at 8 feet, but no one could actually know. We had no running water by then and the main building's generator had died. The "new building" had a working generator.

Most of the next 3 days were a blur. Monday afternoon, I got back on the floor at 4:30pm and started with the "normal tasks", passing meds, turning patients, etc. We were all in a daze. Windows were broken, children of patients and family members were running amuck, and we were all sweating profusely. All of us tried to figure out what our "game plan" was. Considering I am night shift, and most of the night shift people were already on the floor at 4:30 pm, we all had talks about where this week was going. (We were also trying to move patients out of the special procedures unit back

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on our floor, into the halls because most of the rooms were unusable.)

That night was hell. Absolute hell. Patients were screaming for help (no call light system) all night long. Asking for ice water - and they weren't even confused yet. We had 2 flashlights for the night shift. I went and saw my patients and did full head-to-toe assessments on them, like I normally do. I tried to keep my bed bound patients turned and made sure I provided for their needs as much as possible. We had 3 gallons of water on the floor, so basically everyone got their water. Our dialysis nurses came and drew I Stats on the dialysis patients to check their potassium levels. Most of our dialysis patients are dialysed on Monday/Wed/Fridays and they weren't able to be dialysed on Monday. We had basic lab services, CBCs and IStats which checked basic electrolytes. Daily weights didn't get done, and our poor dialysis patients weren't eating correctly because we were giving them 1/2 ham sandwiches and bananas for meals.

Tuesday morning. Sweaty, exhausted, having to wait for the sun to come up to chart so we didn't use our flashlight batteries. Basically, I charted something like this on all my patients: *8/30/05 2000 Hurricane Katrina emergency in progress; NAD noted; Respirations easy; Basic needs met; Patient provided with 1/2 glass of water; Turned and made comfortable; Educated patient on hurricane circumstances; Verbalized understanding; Encouraged patient to call out for nurse for needs.* The docs told us that we would be covered with this kind of charting. ICU and the front part of the building were still running on generator so we all took our cell phones and plugged them in over there. I also found a REAL BED to sleep in and was able to crash for about 3 hours.

So I started another shift. Where am I, Wednesday night? I think. It was so hard to keep up with days/nights. We did the same thing we had done the night before. We all made rounds on each other's patients as a group (to conserve flashlight battery power) and charted when the sun came up. The cries of the patients got more and more intense, and we were ALL exhausted. One of our patients who was

bed-bound and about 400 lbs DEMANDED to be disimpacted that night. The day shift got that job, obviously. The stench of our patient's bodies, along with our own almost got unbearable. We had to also deal with the stench of the bathrooms. The toilets didn't flush, and days worth of urine and feces was building up in the toilets. That day, one of our night shift nurses had collected rainwater from room that was leaking badly and went around flushing toilets with it. She hung signs that said "No toilet paper in toilets. Of course, this did not keep family members from other units off of our unit in search of a clean toilet. We called those "fly-bys".



### The team looking a little more "shop-worn"

About Wednesday or so, we were told that we were "running out of water." We got one gallon of water delivered to our unit in the morning, and that had to be used for staff and patients. Of course, we couldn't neglect our family members, so we gave them some too. We limited our water intake to 1/2 a glass a day. We watched the patients take their meds with just a small sip, and told them that the water had to be conserved throughout the day as much as possible. I, luckily, had my own stash of water and snacks that I brought for home, so I passed out my water to the staff. Food was also scarce. We got out 1/2 a sandwich, but I refused to eat because the ham was starting to "turn." I completely lost it one day because I catnapped and had dreams about dying at Methodist. I cried, the staff cried. Everyone cried and "lost it" at some point. Things got miserable.

I text messaged my two best friends and told them to "plan a nice funeral for me." (cell phones didn't get much

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service. I would get 1 call out every couple of days, but sometimes I could text message. Verizon customers were the only working phones. I managed to sneak a few calls out to my parents. Everyone else thought I was dead.) I believed I was going to die. Everyone did. I wanted to believe that God would save us. It was getting hard to have faith. Very hard.

One night, the generator died in the front building. They had to hand bag the ventilator patients. Everyone took turns. Patients starting dying. Our trach patient wasn't doing too hot either, but we couldn't move them to ICU (because it was a floor down--the patient was bed bound and there was no generator for ventilator use). The doc came in and made him a DNR--"due to emergency conditions, patient's condition deteriorating. DNR."

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Later, the manpower basically ran out and the docs in ICU decided to put t-pieces on the intubated patients. We lost 4, I believe. The new morgue was in OR suite number 5...

The dead bodies in the morgue on first floor had floated away.

Later the next day, the manpower basically ran out and the docs in ICU decided to put t-pieces on the intubated patients (so if they could breathe on their own, they could. we stopped bagging). We lost 4, I believe. The new morgue was in OR suite number 5...God, I could only imagine the smell. No a/c. Dead bodies. The dead bodies in the morgue on first floor had floated away. Maintenance had to open the morgue doors to keep the pressure even (?), and those bodies were gone. During these days, I saw a dead body floating past the hospital. I've seen lots of dead bodies, but none that were because of a disaster. It hurt. It scared me. Maybe that would be me?

We got down to giving our patients sterile water for irrigation of wounds to drink. (we also washed our hands in normal saline because our hands started getting irritated by the Purell

hand sanitizer.)

*Hell was at Methodist Hospital in New Orleans East!!*

I believe it was Wednesday that the helicopters started coming in and landing/hovering on the roof. We began to ship patients off of the floor to the 6th floor/roof to be shipped out to the helicopters. However, getting the patients up to the 6th floor via very small stairwells that smelled like rotting garbage was not fun. Especially our 600 lb gastric bypass patient, hip fracture patient, ICU vent dependent patients, etc. It took 8-10 men working around the clock to get those patients up. Plus, being dehydrated and exhausted was NO FUN

Thursday, the staff was given some hope about going home. We were told that UHS (the company that owns Methodist Hospital) was going to be using their personal helicopters to rescue us, however, they could not take the visitors (the visitors were not of their concern). That would mean, we would have to sneak out and not let the patient's visitors see. 100+ staff sneak out?? That would cause a riot. I cried and cried and knew it would never work.

I was right. Thursday night, we started to ship out some of the staff families that had small children with them. The visitors (who mind you, elected to stay) found out about it, and started a screaming match and throwing things.

I was sitting in the middle of the hall with my co-workers (who were in more need of sleep than me) watching all of this, listening, trying to protect my co-workers. The dialysis nurses came running down the hall and locked themselves into the dialysis room. They made sure to tell me that if things got too bad, we could come and lock ourselves in too. I got a flashlight shined in my face and I could hear the visitors (the same visitors I gave my portion of water to instead of drinking it myself) say "there are those nurses. If we see them leave, I will stab them." Yeah, we are in the middle of a hurricane emergency, and the family members are going to kill me instead. Fabulous.

Larry Graham, our COO of our hospital, came down and tried to calm everyone down. One visitor pulled his arm back to hit Larry, and the police restrained him. There were screams and cries from the visitors. Oh My God. I just sacrificed seven days for these patients. Did my best to care for them, sacrificed sleep, food, water, MY personal food, toileting, etc for them!! This so broke my spirit. Made me wonder if I was even in the right profession - did anything I had done this past week matter?

#### **Moving on.**

After the riot on Thursday night/early morning, I got one hour of sleep in the chair in the middle of the hallway. Friday, we managed to ship all of the visi-



The view from the roof on our way out

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# Tales from Evacuation Centres

Physicians, nurses, and other health-care workers have responded to help the thousands of homeless Katrina survivors. Some have shared their moving stories about the relief efforts. Here are a sample of those reports:

**Amy**, an MD who volunteered at the Houston Astrodome, described the desperate situation there as a few doctors tried to care for hundreds of refugees.

"I wasn't sure what I could do since I don't have my Texas license yet, but I was willing to hand out Band-Aids if that's all they would let me do," she wrote. "I explained my situation to the head MD, and he said since I was a doctor, he didn't care. They needed help so badly that I saw all my own patients, decided my own treatments, transfers, follow-ups, etc.

The major concern on web blogs for potential volunteer health care workers is the question of medical indemnity insurance.

In the early days, credentialing was not an issue—any help was accepted.

Now potential volunteers will not get within a cooee of acceptance until their credentialing has been triple checked.

"The patients were so sick. It became routine to see blood sugars over 400 and blood pressures way over 200/100. They hadn't had their medications for days, and no food or water. But they were so thankful for the

treatment they were getting and were so patient about having to wait so long.

"It's amazing what you can do with so little when you have to. The teamwork and camaraderie among the healthcare personnel is awesome, and I think that's why so much is getting done with so little."

**Thomas Lahut**, is a physician's assistant at St. Peter's Hospital Emergency Department in Albany, New York. For three days, he helped the temporary medical operations staging areas in Baton Rouge, where many evacuees from New Orleans were treated. Most of them were evacuated reluctantly under martial law restrictions.

He wrote. "Even after hearing firsthand of the problems, it is difficult to adequately place it all in context. My work is just one element of the multiple needs here. Medical issues range from the complications of untreated chronic problems, such as asthma, diabetes, and cardiac problems, plus new stressors of injury and infection. Mental health issues are extensive, burdensome, and are difficult to address. Complicating all this is a basic lack of clean water, simple food, underclothing, and shoes for bare feet.

"The chapel here provides room and board for about 50 medical providers: physicians, nurses, EMTs, and more. The mix of staff and volunteers is extensive. Border Patrol guards hefting M-16s provide excellent security, although the contrast with the lush, contemporary and stately campus exag-

gerates the effect. National Guard personnel provide the logistics of coordinating the extensive supplies, organizing the flow of patients and providers, and troubleshooting any rough spots. Nurses, docs, technicians, and eager students are all volunteers. The providers have been nephrologists, ER physicians, pulmonologists, orthopedic surgeons, and more.

"Local physicians have been helpful in describing Louisiana "Good Samaritan" laws, which are applicable for volunteer medical providers in protecting them against liability concerns.

**Cathryn Wright**, a family nurse practitioner from Lafayette, Louisiana, wrote about her volunteer work at the Red Cross Cajun Dome Shelter there.

"The shelter now houses more than 6000 evacuees, and the healthcare services have ballooned tremendously. There is one area just for providers to handle refills for patients who lost their medications or ran out. That's where I was asked to work, and we wrote refills on anything except controlled substances. "It was not always an easy task. Many times we heard, 'I take a yellow pill for my blood pressure.' What a challenge to serve that kind of need! The shelter pharmacy fills the prescriptions, and some local pharmacies are donating part or all of the prescription order.

"The surgeon is beginning to see some infected wounds, and an isolated area has been set up where these can be

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tors out. The patient that we made a DNR died on the floor before we got him moved, so we shipped him to the second floor "morgue". Friday was our salvation day. We were getting rescued. We all wanted to go somewhere other than Moisant airport. We had heard about rapings, killings, etc there. We just wanted to be safe. We all got moved to the roof, where we waited for our rides. We clapped, cheered, had group prayer and took lots of pictures.

We were taken to North Shore Regional Medical Centre in Slidell, LA. They fed us our first hot meal in 5 days, gave us all the water we wanted, put us in air conditioning and let us shower. I was then shipped to Dallas via bus provided by UHS.

I just want away from the sights and sounds of New Orleans for awhile. I will be in the Dallas area for 2 weeks. Tomorrow I make a claim on my Explorer, try to find a job (I want to do travel nursing here in Dallas...hopefully work at Baylor in Grapevine. Anyone that knows of travel agencies that provide cars/living arrangements/insurance, let me know). My health insurance runs out on the 30th of this month. I will be calling UHS to see what they can help me with. Maybe one day, MAYBE, I can go back to New Orleans. Maybe my co-workers will do the same. I miss them so much. Those are the people that mean the most to me. I saw them sweat, bleed, cry, pray, pour their souls out. I hate that some of them I will never see again. They are gone, Methodist is gone, New Orleans is gone. I still cry every night thinking of what could have happened, what did happen and what is going to happen. I'm unemployed, have no car...don't know where I am going. However, I am here. I'm alive. ✕



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treated without sharing space with 'well' evacuees. Dysentery is beginning to crop up, too, so these evacuees also are isolated from the other patients. Some are sent to University Medical Center (UMC) to be admitted to a special isolation unit."

**Jamie Gaudin**, is the Assistant Director of Nurses for a nursing home in Baton Rouge, Louisiana. The nursing home has taken in residents from another nursing home in the New Orleans area, increasing the total number of residents there from 165 to nearly 300.

The total number of residents in the nursing home has increased from 165 to 300. They are living in the dining and day rooms on mattresses. This is now their home.

Some staff came with the evacuees. They had to bring their children and families with them as they had no where else to go.

There is no end in sight for the nursing home or its staff.

"The residents started arriving on Sunday by buses. They are now living in our dining rooms and day rooms on mattresses. People arrived with little or no clothing, their medicines, and not much else (no charts). This is now their home. Some of the New Orleans nursing home staff also came to help, but not enough to care for all these patients. These staff members, as well as our staff members, have been working 12- to 16-hour shifts. Some of the staff had to bring their children and families in as well, as there is nowhere else for them to go.

"My job has changed tremendously. I have been providing basic care such as feeding, changing, bathing, and grooming of these residents as well as our own residents.

"'Helpless' is a word I would use to describe what I am feeling through all of this. This is a very sad and overwhelming situation. The looks on some of the faces of these people will probably haunt me for the rest of my life. I already see these people in my dreams. The cries of the residents (and even some of the staff) when they are told they have nothing left to go back to and that we do not know if

their families have made it, are sometimes too much to handle.

"This has become a longstanding situation. There is no end in sight for our facility at this time. There is no end in sight for these residents and staff. Please pray for those who have experienced this and those who continue to help and comfort the unfortunate."

**Felicia Collazo**, a nurse in Austin, Texas, has not practiced nursing for more than 10 years but she was able to put her skills immediately to use at the Austin Convention Center, helping those displaced by the hurricane and flooding.

I felt compelled to assist. My first intention was to donate clothes, pillows, etc. So, my 8-year-old daughter and I gathered things up and we headed to the Austin Convention Center to drop them off. "As we pulled in, the chaos was immediately evident. Too exhausted to cry, the masses of people stared blankly in confusion after the military aircraft dropped them off. They were all in shock, and they all needed help. I debated whether or not to take my daughter back home, but they were in such desperate need for medical personnel that we made the decision to stay. I borrowed a stethoscope from an EMT, dug out the nursing skills I hadn't used in years, and began to triage patients, choking back my tears after hearing horrific stories one after the other.

"My daughter provided much-needed assistance by running paperwork back and forth to order medications or to bring me supplies. I watched her facial expressions as she gently placed stickers on the patients signaling that they had been seen by the nurse, always making eye contact and always with a smile. I knew that her life was changed forever, for the better.

"Many refugees were plagued with pneumonia and wound infections from the constant exposure to the unsanitary living conditions. Many had not had their medications for their hypertension, diabetes, seizures, schizophrenia, or HIV, to name a few, since the hurricane hit almost a week earlier. Many women had high risk pregnancies or had just delivered and were in need of antibiotics or IV fluids. Many had newborns, one as young as 7 days old.

"Not one person I spoke to had on

their own clothes; they were grateful for the donations. It was overwhelming and for the most part seemed unbearable, but every time I looked up to take a deep breath, the outpouring of love and humanity I witnessed gave me strength to move on to the next cot, holding the next person.

"Even after being there for almost 12 hours, the nurses, physicians, firemen, policemen, and volunteers rarely, if ever, stopped to take breaks as the refugees continued to trudge in by the thousands. No one working dared to complain about being tired, thirsty, or hungry.

"The Austin Convention Center alone is expected to be the home to 5000 refugees. I made promises to several that I would return the next day so they could recognize a familiar face in a crowd of loneliness and despair. I am on my way out the door now to keep that promise. My daughter has chosen to come with me. I am blessed to be a nurse."

**Megan Rico**, a healthcare worker at a 25-bed rural hospital in the hurricane-ravaged region, helped out at the hospital in the early hours after New Orleans became flooded.

"I was sent to the Emergency Room, where our 9 beds and waiting room were occupied with many refugees. There was one family who had just arrived from the New Orleans area, and all of them had symptoms of vomiting and diarrhea. They said that their home was 15 feet under water, and they had been wading in water to get rescued since the previous morning.

"The family didn't bring any of their medication with them; the father had insulin-dependent diabetes; the mother was being treated for a URI; the son with a history of seizures and had not taken his daily Phenobarbital for 2 days. They had not eaten in 2 days, and the only thing they "drank" was the water they ingested while wading.

"Many of the other patients were out of their medications and needed refills. Much of our time included consoling the families who had been separated or those who had to leave their deceased family members behind. The stories that these people told were unbelievable; some stated that what we see on the news is just the "icing on the cake." ✕

# Testing the Ochsner Clinic 'Disaster Plan'

Bill Quinn filed this report from the front line at the Ochsner Clinic Hospital in New Orleans

Haven't been on the list in a while, thought you folks would like to hear how our disaster plan worked out during Katrina.

Here at Ochsner we experienced 120 mph winds but our emergency generators never completely shut down and we experienced no major structural damage. The NICU on 10th floor was evacuated in advance of the storm down to the windowless PACU on 2nd floor. A couple of windows blew out on 11th floor but we had taken those patients into the hall and were running them on e-cylinders for the few hours it took the eye to pass, just to the east of us. Our ER and OR have been up and running continuously throughout the disaster, though water infiltration has forced closure of the majority of the OR suites. We kept one ECMO running and even started another the day after the hurricane passed.

Our basic hurricane disaster plan called for each floor to be self-sustaining to the maximum amount possible. We had doctors on hand on each floor and distributed our EKG machines so that almost all the floors had one by the elevator. As much as possible, we put a therapist on each floor and had them stay there. I guess I didn't completely comprehend the reasons for this until the elevators went down and I found myself huffing up to 8th floor for a code. During this same time period we briefly lost power to the vacuum and medical air systems. Adult ICU vents had their internal air compressors and had no issues.

In NICU we were prepared to carry out a "back-pressure" procedure, we cut off the zone valves and ran the medical air off of tanks so all our vents could keep running on whatever FiO2. We had not thought to have portable suction machines distributed everywhere so during this time period we had to run to central, grab all the suction machines, and apportion them around the building. The NICU

nurses had a hard time getting their minds around the fact they were going to have one suction machine for every four patients, but luckily the wall vacuum was back up in about thirty minutes.

One of our four diesel generators had some water get into a control panel and it went down, so we were without air conditioning for the last couple of days. One interesting thing we found out after this is that I-stat units are not very heat tolerant. In ER we have kept them in working order by placing them in front of a fan. But Ochsner Flightcare took off and flew to Texas and brought back a part and so our air conditioning was got back online, thank goodness. (The manufacturer even sent an engineer back with them along with the part!)

We are now in a prolonged recovery period and are sending some of our less critical patients upstate. We are also trying to purge our waiting rooms of some of the superfluous visitors—everyone in the hospital has to have either an ID badge or a nameband. In addition to our regular census, we have in-house a couple of hundred "special needs" patients who evacuated to us and they are stuffed into odd places like the endoscopy suite, we are hoping to send them out also. Our neighbour hospitals downtown got flooded and there is some talk of getting an Army MASH unit set up in our back parking lot so some of those patients won't have to be evacuated so far.

Our basic staffing plan revolves around having the staff split in two categories for a disaster: Team A comes in and stays until it's safe to travel and folks return to their homes. Then they all get to go home and Team B, who initially evacuated, comes back in and spells them for a few days. On account of the magnitude of the disaster, it is looking like Team A will not be relieved until this coming Monday, and after that we may have to stay in disaster mode and rotate the teams on a weekly basis until the water is all pumped out and martial law is lifted.

Needless to say, we are all bunking in together in places like the Sleep lab,

PICU waiting room, etc. But we here at Ochsner are on the one dry spit of land in the whole area ("A Lofty 8 feet above sea level," as one news account puts it) and we are determined to stay.

We sent a couple of trucks over to Wal-Mart and got the Jefferson Parish sheriff's department to bust in the back door so we could get more drinking water and other supplies.

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It is of course sobering to think that if the eye had come just 20 or 40 miles to the west I would not be giving you this happy report just now. But on the positive side, I find myself thinking that this whole experience can be a real plus in team building and also, as I think over our disaster procedures, I find myself wondering if we can learn from how we are doing things now and get rid of some cumbersome procedural sacred cows we are always saddling ourselves with. Between JCAHO and CAP and HIPPA and Pharmacy Verification so many things that used to be so easy have gotten so hard.

Bill Quinn

# Migratory birds and AIV: An Australasian enigma

Recent postings in ProMED has raised concerns about the need for sound science in drawing conclusions about the involvement of migratory birds in the spread of H5N1 to domestic poultry. In a 5 September posting George Arzey, Senior Veterinary Officer (Avian Health) NSW Department of Primary Industries Elizabeth Macarthur Agricultural Institute comments on an Australasian enigma. He writes:

"Considering the reported widespread infection with H5N1 in SE Asia and the recent findings in Central Asia attributed to migratory birds, Australia and NZ are indeed an enigma: 2 islands endowed with wild aquatic birds, on the migration zone of several flyways in and out of SE Asia, and yet untouched by the subtype ravaging this continent.

Since the emergence of the Avian Influenza Virus (AIV) Goose/GD/96 in the province of Guangdong in 1996, it is estimated that approximately 27 million migratory birds have visited Australian shores, approximately 3 million birds per year. Another intriguing aspect is that while both countries are on the migration route of several flyways, Australia has experienced 5 outbreaks in chicken flocks but NZ has experienced none.

In the 5 outbreaks in Australia, all in intensive poultry units, the H7 subtype was involved, and in all 5 outbreaks migratory/aquatic birds were considered the source. This conclusion was largely based on (1) the premise that aquatic wild birds are a significant reservoir of AIV and (2) anecdotal evidence that suggested presence of aquatic wild birds in the vicinity of an infected farm or inhabiting a body of water that supplied water to the infected farm. AIV of the H7 subtypes were never reported in Australia or NZ in wild waterfowl before, during, or after the outbreaks. Several other AIV subtypes were found in wild waterfowl during surveys over the years,

but none of those was ever found in the infected chicken flocks.

During the last outbreak in Australia (1997), the same AIV subtype which was found in chicken (but of lower virulence) was isolated from farmed emus adjacent to the infected bio-secured index chicken shed. The emu as a possible source of infection was largely ignored in favour of the water from the river being the source of the infection in the chicken, despite the fact that it was chlorinated (albeit with fluctuating levels of chlorine).

Considering the repeated outbreaks in Australia with H7 and the uniqueness of emus to Australia, this population should perhaps receive more consid-

eration within their respective countries and generally do not migrate internationally or intercontinentally. While the European data may point to a strong association between migratory birds and outbreaks in domestic poultry, this has not been consistently the case, for example, in North America, where the infections were, in significant numbers of outbreaks, related to local bird markets. When the spread of the current epidemic in SE Asia occurred, migratory waterfowl were almost instantaneously blamed as the source, although the timing and distribution of several new outbreaks did not fit any known migratory pattern for any species including terrestrial birds. The

presence of H5N1 in live bird markets as early as 1999 (Hong Kong in geese) and 2001 in Vietnam in Geese imported from China, provided a credible alternative explanation for H5N1 outbreaks in domestic poultry. The paper by Nguyen et al (2005) identified the domestic duck as being the major reservoir of the AIV pool in nature and the live bird markets in Asian countries as a suitable environment for reassortment and transmission.

Perhaps the Australia and NZ scenario provides another reason to examine the possible association between migratory birds and outbreaks in domestic poultry with an open mind.

Requiring a thorough examination of the evidence that links migratory birds or other wild waterfowl and AI outbreaks in domestic poultry is not aimed to weaken or to question the concept of bio-security. The promotion of the concept of bio-security and exclusion of wild birds from poultry enterprises should be viewed as a tool to reduce disease risks rather than as an undisputed epidemiological association and acceptance of the direct role of wild birds in all AI outbreaks on poultry farms." ✖



**A flock of migrating birds on the move from Mangere in Auckland**

eration as a potential reservoir of AIV infection in Australia.

While it is acknowledged that absence of evidence is not necessarily evidence of absence of infection with H7 subtype in Australian and NZ aquatic wild birds, it is highly significant that the H7 subtypes isolated from the AI outbreaks in Australia between 1985 to 1994 were all phylogenetically delineated from H7 subtypes found in other regions of the globe and the Australian H7 subtype formed a separate sub lineage. Would this delineation persist for such a long period if migratory birds were responsible for the AI outbreaks in Australia?

Unlike Europe, Australian and NZ Anatides are considered nomadic

# Kindred Hospital turned into a Health Command Centre

Charity (Kindred) Hospital, where about 200 patients and doctors were trapped in deplorable conditions, was fully evacuated of all patients and personnel 5 days after Hurricane Katrina slammed in. The situation at Charity was dire with no power, no water and no food. Some patients were on ventilators being worked by hand pumps; the bodies of those who died were stored in stairwells, as the hospital's morgue had flooded. Charity, one of the oldest facilities in New Orleans, is a public hospital which accepts indigent cases and those without medical insurance. It's also a Level 1 trauma centre

While many health-care facilities in New Orleans have undoubtedly lost hundreds of thousands, or perhaps millions, of paper medical records in the hurricane and floods. Kindred stores E-medical records locally and also duplicates them on a central server and backup systems off site. This has allowed Kindred to electronically send copies of evacuated patients' records to other Kindred facilities to which they were moved. In cases where patients were evacuated to a non-Kindred facility, Kindred was able to print out the records and ship them overnight.

## Health Command Centre

After the last 54 acute-care patients at Kindred Hospital were evacuated, government officials designated the facility as the nerve centre for public-health monitoring in the city in the aftermath of Hurricane Katrina.

The forward command post is staffed by Coast Guard officials, as well as teams from government agencies, including Homeland Security, the Federal Emergency Management Agency, the Environmental Protection Agency, the Centers for Disease Control and Prevention, and federal, city, and state public-health departments. The New Orleans public health department has also relocated its operations to the facility.

In addition to the forward command centre, the U.S. health department is

using a high-tech mobile command centre in Baton Rouge, La., and the central "secretary's command centre" at HHS headquarters in Washington, D.C., to monitor the post-hurricane health situation in the city

"We had sustained some damage from the hurricane and subsequent flooding, but we're a usable facility," said Rick Chapman, executive VP, chief administrative officer, and CIO at Kindred Healthcare Inc., which operates 71 other long-term acute-care hospitals and nursing homes in 24 states.

The hospital's evacuation of patients, "many of whom are the sickest of the sick," was "harrowing," Chapman said. Looters broke into another hospital across the street to steal drugs, so military and Kindred guards were needed to protect patients from looters and snipers in the area. "It was pretty intense, but we were able to get everyone out safely."

Once the last patients at Kindred Hospital were evacuated, state and federal officials moved in their own equipment and computer systems to transform the facility into a "forward command" centre that's monitoring and managing the public-health crisis posed by the toxic floodwaters.

"They brought in and are using all their own systems," Chapman said, despite the presence of the hospital's existing IT infrastructure that supports electronic medical record systems and other clinical and administrative applications.

Kindred is one of only two unused healthcare buildings intact enough to serve as a command centre for health operations. Hospital workers fought through the storm to preserve the building's air, water and electrical systems. "We had 20 or 25 air conditioners blow right through the windows into rooms," said Benjamin Brekeen, the hospital's chief engineer. Brekeen and another engineer, Christopher Hays, patched the roof with plastic sheets as drenching rain poured through a tear and began flooding an electrical switching room.

Kindred's corporate officials arranged for a generator to be shipped to the hospital, and now three out of five floors have power and two have air conditioning. In the first floor of a separate building, a Disaster Medical Assistance team from Sacramento began setting up an emergency room in what was the hospital's cafeteria before the storm.



A Charity patient being evacuated

Kindred hospital will remain the government's forward command centre for Hurricane Katrina cleanup and public-health monitoring for months, a U.S. Department of Health and Human Services spokesman said. Health officials are converting Kindred into a Federal Medical Rescue Centre, a public health beach head to watch for disease outbreaks and treat injured rescue workers. With 24 of 27 hospitals closed and most doctors offices and clinics under water or abandoned, state and federal health workers are trying to rebuild a health care system that once served a metropolitan area of 1.3 million.

"The entire city's just one big septic tank," said Terrence Manning, a government engineer, as he studies the map in a meeting room in Kindred Healthcare Inc.'s Kindred Hospital. Outside, some of New Orleans' most high-priced Garden District homes sit

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Articles and comment on emergency management issues are welcomed

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## Up coming Events

26 28 October 2005  
**Health Materials Managers Conference 2005**  
Wellington Conference Centre  
Cost: \$190  
More information from; [www.mianz.co.nz/conference.html](http://www.mianz.co.nz/conference.html)

7 8 November 2005  
**North Island CDEM Officers Conference**  
Palmerston North Convention Centre  
Cost: \$180  
More information from;  
[sue.porter@horizons.govt.nz](mailto:sue.porter@horizons.govt.nz)

27 30 November 2005  
**RedR Personal Security and Communications Training Course**  
Waiouru Military Camp  
Cost: \$600  
More information from; [www.redrnz.org.nz](http://www.redrnz.org.nz)

28 29 November 2005  
**Risk Management Conference**  
Cophorne Hotel, Wellington  
Cost: \$1950 + GST  
More information from;  
[www.brightstar.co.nz](http://www.brightstar.co.nz)

## Editor's soapbox

There is a parallel between the New Orleans hurricane/flood and our next influenza pandemic.

In both cases we know the event is almost inevitable and is likely to overwhelm us. The uncertainty is about when. The good news is that our government - and those in most other countries - seems to be recognising the pandemic threat and supporting efforts to reduce the impact when it does arrive.

The other great uncertainty is the force or scale of the event. There seems little doubt that many people in New Orleans thought that they could hunker down and ride Katrina out, as they had many times before with lesser storms.

Should a pandemic come in waves, a low first wave may engender a similar sense of complacency with our public. Communicating the right information is facing up as being our biggest challenge and greatest opportunity for a "successful" response.

The focus of this issue has been on personal stories from health care workers caught up in Katrina. The power of the internet and blogs allows their stories to be shared, in some cases, as they happen. I salute those who continued to care for their patients or battled to keep their hospital facility operating and those who volunteered their services at reception centres and ad hoc medical posts. Two weeks post the event they are already looking forward and rebuilding their lives.

Finally, with our 100th issue we have reached a milestone unimagined when we started. While we have come a long way from that first two page issue sent to a score of people, our mission is the same - to provide a forum for sharing information between those with an interest in emergency management in healthcare settings. I thank all of you who have supported us by submitting articles, offering encouragement, and reading along with us. As we move forward our format is sure to change as technology allows; our mission will remain the same.

### Bruce Parkes

(Continued from page 10)

empty, surrounded by fallen trees. On the map flooded areas of the city are outlined in pink. A separate map dotted with pink and green Post-Its shows pumping stations health workers want to resurrect.

Sheets of white papers tacked to the walls of the makeshift command centre spell out health workers' top priorities: vaccinations to avoid viral outbreaks; control of AIDS, tuberculosis and sexually transmitted diseases; care for trauma and injuries; and support for those with chronic diseases whose care has been disrupted.

### Two Disasters

U.S. Centers for Disease Control and Prevention officials from Atlanta interviewed at Kindred say they are still unsure of the scope of health needs in New Orleans and the other areas of Louisiana. "It's really more like two disasters, the hurricane and the flood" said Carol Rubin, a CDC epidemiologist, in an interview at Kindred. ✕

