

# Katrina's Lessons Will Bolster Emergency Medicine

*Emergency personnel must plan for catastrophic events, not just for relatively small disasters.*

BY NELLIE BRISTOL  
Contributing Writer

From safety concerns to the problem of well-meaning but excess emergency personnel, lessons are emerging in Hurricane Katrina's aftermath that should reshape how emergency medicine and disaster management systems respond to future catastrophes.

Planners have focused on contingencies if parts of cities or some streets and services were disrupted by a disaster for a number of blocks—but not when all services, health facilities, and communications were obliterated in an area the size of Great Britain—as occurred with Katrina—said ACEP Public Health Committee Chair Jon Mark Hirshon, M.D.

"One of the things I think people need to realize is that we've been planning for disasters for years, but [Katrina] is by definition a catastrophe," Dr. Hirshon said.

Although emergency medicine leaders said the profession responded admirably to the Katrina crisis, the overall chaotic nature of Gulf Coast rescue operations leaves many areas for study through emergency plan reviews and academic research.

## Safety First

The need to focus on safety was a primary lesson inflicted by Katrina.

Medical personnel should have been more alert to potentially violent situations and planned accordingly, said ACEP Disaster Medicine Section Chair Eric Weinstein, M.D. "If you work in a daily environment—fire, rescue, EMS—with

gunfire, then you have to assume it's going to be there in a disaster," he argued.

Responders "didn't think it through. They figured that these people were helpless and wanted help, which was true, but they also then realized that there were hungry people out there with guns—plus there were bad guys out there looking to seize upon the situation," he explained.

Medical personnel should coordinate with security organizations during disasters to make sure they are accompanied by adequate protection, Dr. Weinstein said.

Dr. Hirshon agreed, saying that violence toward responders not only threatens individuals but also costs rescue operations. "It is unwise to put yourself in harm's way, because you could end up being a casualty and becoming a burden on the system," he said.

Protection should be required of hospitals as well, which were reportedly faced with armed looters in the hurricane's aftermath. Dr. Weinstein suggested that hospitals have "hired gunmen" who can protect patients and hospital supplies.

Physicians should take a lead role in determining the evacuation abilities of vulnerable individuals, another major problem in New Orleans, Dr. Weinstein added. "I think that the medical community let down, because I think [it] should be more attuned to the patient's ability to evacuate," he said.

"Health care providers can do a better job. They teach people how to eat, they teach people not to smoke and to have healthy lifestyles; let's talk about how [each patient] is going to evacuate," he suggested.

If patients do not have the resources to get themselves out, he said, physicians should ask if patients object to them notifying a public agency that could coordinate transportation for the patient during an emergency. The agency should be alerted to patient medications and any other special needs.

## Red-Tape Tangles

Bureaucratic steps involved in medical personnel deployment need to be reviewed, Dr. Hirshon said, including the possibility of portable credentials that can apply to multiple jurisdictions in emergencies.

He also suggested strengthening the response command and control structure, which he said "was fragmented initially." Knowing who is in charge when multiple jurisdictions respond is something that needs to be worked out beforehand, he said.

Disaster response planning has always assumed the local jurisdiction would respond first, followed by states, and then the federal government, "which may take as long as 3-4 days," noted Andrew I. Bern, M.D., past chair of ACEP's Disaster Medicine section. That process needs to be reviewed, he said, in light of the hurricane's devastating effects.

"The federal government doesn't have the precedent, up until now, where the expectation was that they would immediately take over the management, coordination, and running of the entire event," Dr. Bern explained.

Another area of concern, experts said, is excess personnel.

When volunteers show up who aren't required, Dr. Weinstein said, "then you have to use resources to tell them they're not needed. That's a problem."

Medical personnel should activate only if contacted through special channels. "If you're not asked to be there by an official channel, don't go," he said.

## Information Is Power

Although primary data are needed to determine where improvements should be made, access to critical information may be hindered by the difficulties researchers have retrieving data from the National Disaster Medical System (NDMS), Dr. Bern said.

"One of the problems from the standpoint of lessons learned and scientifically evaluating what is going on relates to how easy it is for researchers, policy makers, or anyone else to get their hands on the information," Dr. Bern said.

Access to needed records, including paper patient records, is a "very challenging if not impossible task" under the structure of the NDMS, the Federal Emergency Management Agency, and the U.S. Department of Homeland Security, he said.

The data could help experts assess whether medical teams responded as efficiently as they could have, were in the right locations, and had the correct supplies, among other issues.

As recovery continues, the experiences from Katrina offer myriad opportunities for improvement of medical disaster response, Dr. Weinstein said. "There's a lot to learn here in a nonpunitive manner," he said.

Dr. Hirshon agreed. "I think we need to be cautious in criticizing what went on [during Katrina], because there's still a lot of learning that needs to be done and a lot of understanding of what's going on," he cautioned. "This is such an unusual event." ■

# Procedural Ultrasound Comes to the Emergency Department

BY TIMOTHY F. KIRN  
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JACKSON HOLE, WYO. — Procedural ultrasound for use in placing central venous catheters and performing thoracentesis and arthrocentesis will make life easier, faster, and safer for emergency physicians, Luis Haro, M.D., said at a meeting on high-risk emergency medicine.

Procedural ultrasound for the emergency department is so new that even most professors in academic centers do not know how to do it, said Dr. Haro of the department of emergency medicine at the Mayo Clinic, Rochester, Minn.

But soon everyone will use it, he predicted. The advantages are clear, and, according to a survey, 60% of emergency departments have ultrasound capabilities, although they may not be doing procedures, Dr. Haro said at the meeting, sponsored by the Mayo Clinic.

At the clinic, the emergency department already has three ultrasound machines that can be used for procedural ultrasound, Dr. Haro said.

"This is cutting edge," he added. "In our

institution, we do a 6-hour ultrasound lecture for our physicians."

Mastering the techniques is not difficult, since most emergency physicians know how to do these procedures blindly, Dr. Haro said.

The trick is mastering the concepts of ultrasound technology, and even that is basically simple, Dr. Haro said.

The concepts are these: First, for a procedure, one does not necessarily want the biggest ultrasound probe, but a probe that produces a linear field of view rather than a pie-shaped one. Second, procedures are generally about locating or evacuating fluid, and fluid is dark or black in an ultrasound picture. And third, lower-frequency waves penetrate deeper into tissue than higher-frequency waves.

The use of ultrasound for placing a central line can significantly reduce the likelihood of missing the jugular vein and hitting the carotid artery, he said. In one study, arterial puncture occurred 7% of the time when the procedure was done blindly. That rate was reduced to 1% with ultrasound. Minor complications also are reduced.

According to the literature, physicians correctly place a central line on the first try less than 40% of the time when they do it blindly. But with ultrasound, they succeed the first time about 80% of the time.

Studies also have shown that ultrasound-guided central vein catheterizations take an average of about 2 minutes less than blind catheterization, and they are revealing things about nuances of anatomy not previously appreciated, Dr. Haro said.

Similar advantages have been demonstrated for ultrasound-guided arthrocentesis and thoracentesis.

In arthrocentesis, ultrasound is used for evaluating the knee or other large joints before performing the procedure, rather than for guiding the needle, which is not that difficult.

Ultrasound clearly shows if puffiness represents fluid inside or outside the joint, Dr. Haro said.

In thoracentesis, the results of studies have clearly shown a reduced risk of pneumothorax, he added.

Given the simplicity and benefits of

ultrasound, all emergency physicians who are able should give it a try, Dr. Haro suggested.

"You're doing these procedures all the time," he said. "You do arthrocentesis. You do thoracentesis. You place central lines. You're already doing it blindly, so just take an extra look if you have a probe there." ■

## Pocket Guide to Preventive Services

The Agency for Healthcare Research and Quality has adapted the Guide to Clinical Preventive Services 2005 as a pocket-sized book. The book includes the U.S. Preventive Services Task Force's recommendations on the prevention and early detection of a number of diseases and conditions. Free single copies are available by visiting [www.ahrq.gov/clinic/pocketgd.htm](http://www.ahrq.gov/clinic/pocketgd.htm) or by calling 800-358-9295.