

Disaster Doctors



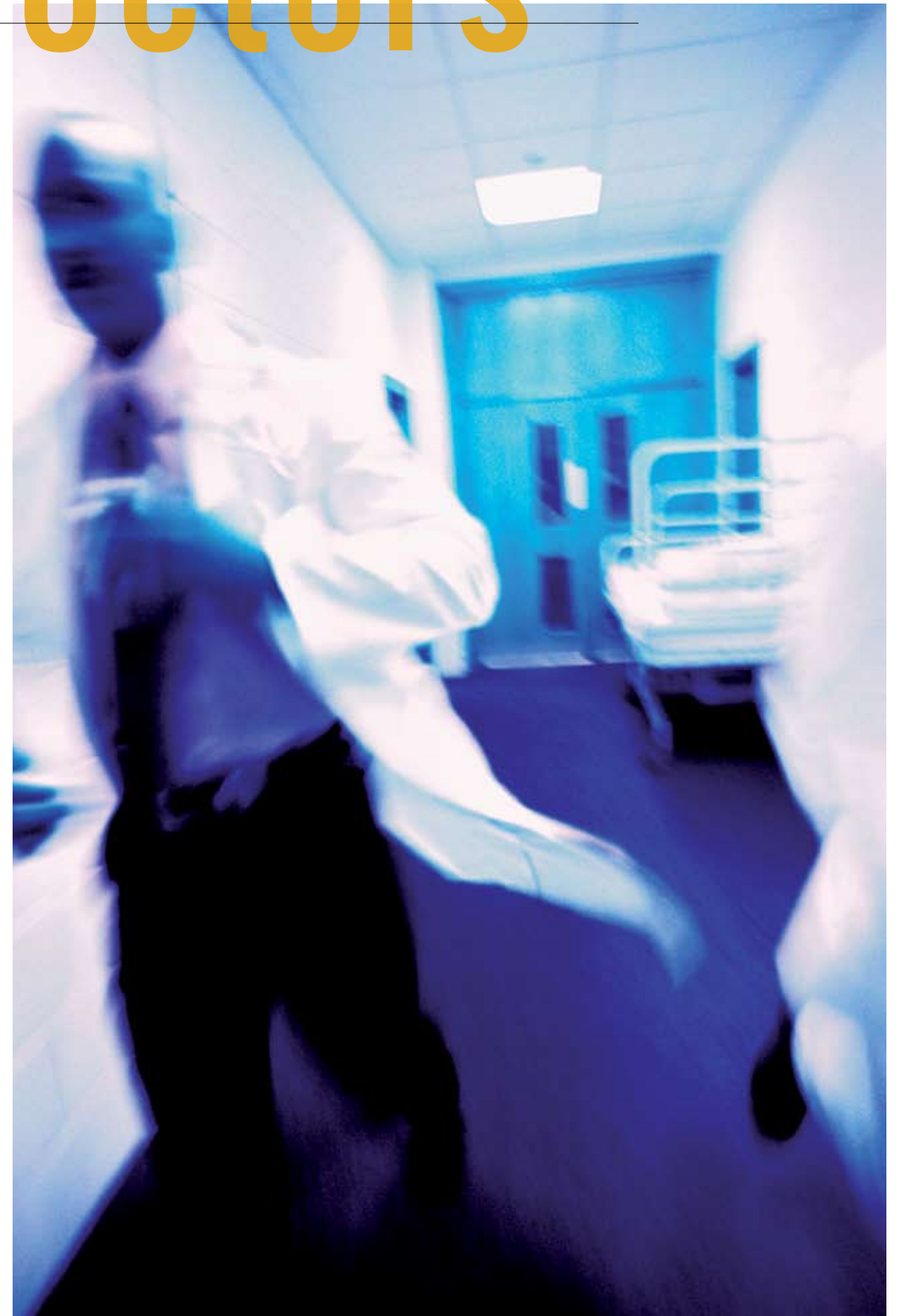
When a disaster strikes anywhere in the nation, emergency medicine experts at UT Southwestern Medical Center routinely are called to put an end to the chaos.

➤ Their experience in the field of disaster medicine has led to a program that is changing the way the nation responds to public-health emergencies. ➤ In the wake of the Sept. 11 terrorist attacks,

UT Southwestern's emergency medicine physicians were asked to design a series of standardized National Disaster Life Support (NDLS) courses. The purpose was to establish a common approach for how doctors and other health professionals in America should respond to large-scale, catastrophic events like terrorist attacks, explosions, natural disasters such as hurricanes, floods and fires, and infectious-disease outbreaks.

➤ "Essentially, we were charged by leaders in the U.S. Department of Health and Human Services to create 'all-hazards,' standardized courses in medical preparation that would be taught to all emergency providers and to every paramedic student, every nursing student and every medical student," said Dr. Paul Pepe, chief of emergency medicine at UT Southwestern. "Now, the paramedic in Portland, Ore., can operate side-by-side with the intensive care unit nurse from Portland, Maine. We all will be taking the same organized approach."

by **CONNIE PILOTO**





UT Southwestern faculty members as well as faculty from

the Medical College of Georgia, the University of Georgia and the UT School of Public Health in Houston developed the courses, which were adopted by the American Medical Association in 2003.

A \$1 million grant from the Department of Homeland Security and several similar multiyear grants from the U.S. Department of Health and Human Services has helped UT Southwestern and its partners promote the new courses and train nearly 100,000 health-care providers in disaster medicine across 30 states as well as several international sites.

As the nation debates whether America is safer now than it was five years ago, the NDLS program developed at UT Southwestern has been cited as a model that works.

It was tested during Hurricane Katrina, one of the most costly and deadliest hurricanes in U.S. history.

According to Louisiana state health officials, the results were clear: In areas where the medical evacuations went very well, the new training had been provided. In areas where they didn't go as well, the training had not been implemented.

"This kind of feedback is truly rewarding and demonstrates that we are on the right track," said Dr. Pepe, who noted that the NDLS program had been rolled out in Louisiana 90 days before Hurricane Katrina made landfall.

The pioneering of courses such as the NDLS demonstrates that UT Southwestern's section of emergency medical services, homeland security and disaster medicine is a worldwide leader in emergency medicine.

Led by Dr. Pepe, a team of nationally recognized disaster-medicine specialists have been recruited and are now faculty members at UT Southwestern. They conduct research, respond to disasters and train doctors in the medical aspects of public safety services, tactical medicine and counterterrorism. They are the sought-after medical leaders that respond when a city or the nation is in need.



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New Orleans Needs Help: UT Southwestern Mobilizes

Hurricane Katrina made landfall in Southeast Louisiana on Aug. 29, 2005, and two days later state officials summoned Dr. Pepe and Dr. Raymond Swienton, one of the co-founding national editors of the NDLS courses and co-director of UT Southwestern's EMS, homeland security and disaster medicine section in emergency medicine. Their mission: to help state leaders get a handle on the chaos.

"Our folks had their hands across the whole scope of the disaster starting at ground zero in New Orleans to the command center in Baton Rouge to the receiving centers here in Dallas," said Dr. Pepe, who holds the Riggs Family Chair in Emergency Medicine. "We were spread thin, but it was rewarding to be stewarding the entire chain of survival."

After arriving at the emergency command center in Baton Rouge, the pair split up. State troopers escorted Dr. Pepe to New Orleans to survey the damage and report the location of stranded people, which included the medical director of the New Orleans emergency medical services division, with whom officials had lost communication.

Dr. Swienton joined Dr. Mike Proctor, the former senior medical advisor for health care and EMS for the Center for Domestic Preparedness, Department of Homeland Security. Their task was to begin identifying places to set up field hospitals in the Baton Rouge area.

"One of the immediate needs, as people began mobilizing out of New Orleans and the surrounding areas, was identifying where to put incoming patients and evacuees needing access to health care," said Dr. Swienton, associate professor of emergency medicine. "The hospitals in Baton Rouge were already full and other back-up facilities were filling up rapidly, so we had to go around the city looking for a physical structure that could house a thousand sick patients."

They found one: an empty Kmart store that they converted into a medical facility within 24 hours. The operation was dubbed "The Blue Light Special."

"The store had nothing but dirt on the floor," Dr. Swienton said. "It was 103 degrees inside, so we had to bring in commercial industry air conditioning and electricity. More than 1,000 fluorescent bulbs were used to light the building, and local communities provided food and clothes for evacuees."

A second treatment facility was opened at the Pete Maravich Assembly Center, a sports complex on the Louisiana State University campus in Baton Rouge.

"Such innovative, just-in-time applications in health-care surge delivery are helping to define new models for disaster health-care services," Dr. Swienton said.

The Airport to Nowhere

Even as medical facilities in Baton Rouge opened, conditions at the Louis Armstrong New Orleans International Airport deteriorated. With hundreds of very ill patients arriving by the hour, a disastrous

logjam emerged as the incoming arrivals outpaced the ability to transport them out using traditional plans of evacuation.

Louisiana Gov. Kathleen Blanco ordered Dr. Swienton and Dr. Proctor to New Orleans to take control of the health-care operations at the airport and find a better way to evacuate it.

At the airport, Dr. Swienton walked into a sea of evacuees and patients. Those who were sick or injured lay on military-style cots in the baggage collection area of the main terminal downstairs. Several hundred patients covered the baggage carousels of several airport gate areas. Patients in wheelchairs were lined up wheel-to-wheel akin to a traffic jam.

"You could hardly walk between them without bumping into them," Dr. Swienton said. "Some of the patients were clearly dying; others were already dead; and the smells and sights were what you'd expect from people who didn't have access to basic necessities."

Days earlier, teams from the federal Disaster Medical Assistance Team (DMAT) had been sent to the airport with plans to fan throughout the city to help local medical facilities provide care.

But hours after the DMAT teams arrived, helicopters started landing with evacuees needing medical attention. For days, two parallel rows of helicopters continuously unloaded the old, the disabled, the ill and the dying. Many evacuees arrived in ambulances. Others drove. Some walked there.

People who didn't evacuate before the storm sought refuge there, too. Over four days, the number of evacuees seeking shelter swelled to about 13,000. Of those, 2,400 needed urgent medical care or significant help to get around because of medical and health limitations.

The DMAT teams brought medical supplies, but they were used up in a flash. Gone were the boxes of examination gloves, the triage tags and oxygen tanks. For a while, there was no food, water or electricity. Space was so scarce that the medical staff took turns sleeping on the baggage carousels.

Dr. Kelly Klein, assistant professor of emergency medicine at UT Southwestern and a member of the Texas DMAT team, was one of the first on the scene. Teams from Washington, California and Oregon made up the rest of the federal response.



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“Our traditional version of triage didn’t work there,” Dr. Klein said. “We had no resources to treat people and nowhere to send them to get treatment.”

So the medical teams cordoned off an area away from the noise and the chaos to house the most critically ill patients, those who were likely to die. They called it the “expectant” ward. There, they administered morphine and offered other comfort measures to ease the pain.

“Sometimes medicine is holding someone’s hand,” Dr. Klein said.

Taking Charge of the Airport

By the time Dr. Swinton found Dr. Klein at the airport, she was exhausted and frustrated because there didn’t appear to be an end in sight and her federal agency supervisors did not have an alternative evacuation plan.

“With the best of intentions, the DMAT leadership at the airport was trying to deliver health care to this desperate mass of people. However, their sup-

plies were running out; their own physical exhaustion was becoming a factor; and a lack of effective evacuation planning all contributed to the obvious breakdown,” Dr. Swinton said. “And 168 medical workers, no matter how good they are, cannot maintain a facility that has about 12,000 people under its roof.”

Under orders from Gov. Blanco to clear out the airport, the initial encounter with the federal agency team leaders started a cascade of events and intense talks that led to threats that Dr. Swinton and Dr. Proctor would be arrested for attempting to modify the established plans of those in command of the airport.

“We understood their position, but we had an obvious reason, actually more than 12,000 reasons – each person at risk – for why we were there,” Dr. Swinton said. “FEMA [the Federal Emergency Management Agency] quickly recognized that we were indeed agents of the governor and were then given command, control and authority to take over.”

Immediately, Dr. Swinton, a veteran of the U.S. Air Force, contacted a former surgeon general of the Air Force and asked for planes to evacuate the patients and evacuees. A relative of Al Gore telephoned the former vice president, and he sent two airplanes. Another group commandeered about 70 school buses from Bossier City, La., and sent them to the airport.

Soon, airplanes started landing every 15 minutes, and buses lined up outside to take the evacuees to facilities that could treat the sick and injured and shelter those left homeless by the storm.

The last patients moved were those resting quietly in the “expectant” ward. Despite hundreds at risk of doing so, during this evacuation only six people died at the airport. Four infants also were born. The airport was cleared 23 hours after Dr. Swinton and Dr. Proctor arrived.

In Dallas, There is Hope

Five hundred miles away, busloads of Hurricane Katrina evacuees were winding their way toward the Dallas Convention Center.

There, UT Southwestern’s Dr. Raymond Fowler and Dr. Kathy Rinnert, both associate professors of emergency medicine, led a team that transformed an underground parking lot into a field hospital – with less than 16 hours advance notice.



“Through an outpouring of love and community coordination, we were able to be the recipients of an enormous displacement disaster,” said Dr. Fowler, who also co-directs the EMS, homeland security and disaster medicine section at UT Southwestern. “We were able to protect already-overwhelmed area hospitals and emergency departments from a veritable onslaught of people seeking both routine and emergency care.”

The effort included private physicians as well as dozens of physicians from UT Southwestern working up to 20 hours per day for nearly two weeks straight to care for people needing medical attention. On the first day of the operation, doctors saw more than 1,100 sick and injured evacuees.

Medical and nursing staff from many area hospitals, including Parkland Memorial Hospital and Children’s Medical Center Dallas, also helped to staff the facilities, which included a 31-bed acute-care center.

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When Hurricane Rita hit on Sept. 24, 2005, more evacuees were sent to the Convention Center and Reunion Arena in Dallas. In the end, doctors treated more than 10,000 evacuees during a four-week period. The Dallas medical community helped with many nonemergency medical needs, too, from filling prescriptions for routine medical conditions to performing eye exams and replacing eyeglasses.

“We believe that our good fortune and hard work created a medical surge facility model that we will be able to reproduce as we go forward planning for future responses,” Dr. Fowler said.

Disaster as a Subspecialty

The evolving subspecialty of disaster medicine began developing in the mind of Dr. Pepe almost a decade before the 1993 World Trade Center attack.

Already an expert in emergency medicine at Baylor College of Medicine in Houston, Dr. Pepe was intrigued about a new function: Beyond traditional 9-1-1 medical emergency services, how could emergency medicine physicians support law enforcement and government officials in responding to terrorist events as well as other manmade and natural disasters?

In the early 1990s, Dr. Pepe set out to gain tactical experience by joining forces with local and federal police agencies. He was dispatched to police raids and served as a consultant to the White House Medical Unit and the Secret Service. The experience led to his appointment as Commonwealth Emergency Medical Director for Pennsylvania in 1998 under then-Gov. Tom Ridge, who later became the first secretary of the Department of Homeland Security.

That’s when it hit him: Why not draw on existing models of training physicians in subspecialties such as cardiology or nephrology to create a fellowship in nontraditional emergency medical services?

“The concept was that the young doctors who had finished their training in emergency medicine or trauma surgery would go on and obtain additional expertise in areas of public-health emergencies – an avian flu pandemic, a chemical explosion, a terrorist attack or killer tornadoes,” Dr. Pepe said.

Some of that training was already happening at UT Southwestern when Dr. Pepe arrived in 2000. It was one of the reasons he decided to join the faculty.

“UT Southwestern had created great advances in the realm of preparation for major public-health threats,” Dr. Pepe said. “Dr. Rinnert and others had developed exceptional models for preparing hospitals and emergency-care workers for terrorist and other disaster events.”

Cops and Docs

Once in Dallas, Drs. Pepe and Rinnert set out to create an innovative fellowship in disaster medicine that pairs emergency medicine doctors with specialized units in police departments, federal agencies and emergency managers at the highest levels of government.

They called it Government Emergency Medical Security Services (GEMSS). It’s a program that trains emergency physicians to provide medical expertise to government agencies, especially city leaders, law enforcement, public-health and disaster management teams. The only two-year program of its kind in the nation, the GEMSS fellowship program offers more intensive training than any related program.

“It’s a novel program that aims to train physicians to help government agencies make high-level policy decisions about medical issues,” said Dr. Rinnert, the GEMSS fellowship director.

To gain these highly specialized skills and to bridge the gap between the health-care profession and government agencies, the fellows must spend time, on a day-to-day basis, working alongside the officers and agents that they will eventually advise and support.

That has led to a partnership between GEMSS fellows and local and federal police agencies, including the FBI, Secret Service and Dallas Police Department’s SWAT team.

Dr. Alexander Eastman, a general surgery resident at UT Southwestern, was one of the first GEMSS fellows to partner with the Dallas SWAT. He took two years off from his surgery residency in 2004 so he could join the GEMSS fellowship and train full-time with the 50-member Dallas SWAT squad.

A year later, Dr. Jeffery Metzger, clinical assistant professor of surgery, also joined the squad as part of his own GEMSS fellowship at UT Southwestern. When they’re not treating patients in the emergency room or supervising one of the area EMS agencies, the doctors are suiting up and responding to calls with the elite squad.

“I want to make tactical medicine my niche,” Dr. Metzger said. “This fellowship adds credence to the subspecialty, and it gives me a lot of experience in the field.”

Both doctors have been featured on the national television show “Dallas SWAT,” which has been documenting the high-pressure jobs of the team for the Arts & Entertainment Network.

On Feb. 16, 2006, the Dallas SWAT’s partnership with UT Southwestern doctors proved its worth.

When four Dallas SWAT officers were shot while serving a federal drug warrant, Drs. Eastman and Metzger were on the scene.

As the SWAT members exchanged shots with the gunman, Dr. Eastman and Dr. Metzger immediately began treating the injured officers.

“One of the officers was shot in the thigh,” Dr. Eastman said. “I grabbed him and pulled him to safety. Then, another officer was clipped in the ear, but he thought he had been shot in the head.”

The lightning-fast medical care that the UT Southwestern doctors provided allowed the SWAT officers to be assessed in seconds and transported to the hospital within minutes. The officers recovered and are back on the job.

Dr. Metzger’s postdoctoral fellowship also includes training stints with the Secret Service in Beltsville, Md., the FBI in Quantico, Va., and Sandia National Laboratories in Albuquerque, N.M., where he learns about national defense programs and gains terrorism training.

Dr. Ira Nemeth, another postdoctoral fellow in the GEMSS program, is focusing his efforts on disaster preparedness and management.

He was recently selected chairman of the Dallas County Metropolitan Medical Response System (MMRS), the multiagency team that provides the



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medical response to counterterrorism and disaster mitigation. The MMRS, comprising representatives from the FBI, police, fire departments, hazardous materials teams, public-health officials and hospitals, can be found in most major cities throughout the United States and is funded with grants from the federal government.

Dr. Nemeth is leading an effort to create a medical operations center – a coalition of Dallas-area EMS, hospital and public-health departments that would respond during a public-health crisis. San Antonio and Houston have similar efforts under way.

“The idea is that during a public-health emergency our team gets together in one location and manages all the medical aspects,” Dr. Nemeth said. “If we had another evacuation of the coast, we would stand this up and try it.”

The impetus to create a center that concentrates exclusively on medical aspects during an evacuation or disaster came directly from the many lessons learned during Hurricane Katrina and its aftermath.

“What we did during Hurricane Katrina was amazing,” Dr. Nemeth said. “It was done at the last minute, and it worked, but you need an organized structure so that decisions are made as a group.”

Local and national leaders have lauded the work of UT Southwestern’s emergency medicine faculty during hurricanes Katrina and Rita. Weeks after the storm, U.S. Surgeon General Richard Carmona presented Dr. Pepe with the Award for Outstanding Contributions in EMS from the American College of Emergency Physicians. Dr. Carmona specifically commended Dr. Pepe for his work in the devastated New Orleans area. Days later, Dallas Rep. Eddie Bernice Johnson cited Dr. Pepe in the U.S. Congressional Record as being a “courageous” leader because of his interventions.

Thanks to the forward-thinking leadership of UT Southwestern’s experts in emergency medicine, first responders nationwide are receiving specialized training, emergency medicine physicians are aiding law enforcement and homeland security efforts on a day-to-day basis, and teams of medical specialists with a proven track record are ready to mobilize at a moment’s notice – all to help guide and train others to efficiently respond to the next disaster. ✱