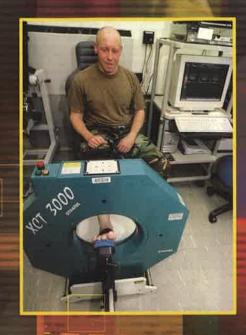
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Katrina: Radiology Answers the Call for Help

Giving Presentations That Sparkle



Feelings of desperation were everywhere among evacuees.



Volunteers in the triage area are given instructions prior to evacuees' arrival at the George R. Brown Convention Center Saturday morning.

ADVANCE photos by Mary Aucoin



Helping Hurricane Survivors

Imaging rushes in to help their own, others recover from one of the worst natural disasters in U.S. history | BY JOYCE WARD, CNMT, RT(N), JENNY SONG, LAUREN PIGEON AND SUZANNE CHANG

s one of the worst natural disasters in U.S. history, if not the worst, Hurricane Katrina left hundreds dead, hundreds of thousands more homeless and upwards of \$100 billion in property damage along the Gulf Coast regions of Louisiana, Alabama and Mississippi.

Yet, as this issue of *ADVANCE* headed to press, the floodwaters of New Orleans were swiftly receding—well ahead of expectations—and relief and recovery efforts across much of the Gulf Coast were getting under way, both in the region and across the globe through charitable donations of money and supplies.

Once everyone was able to get their head around the enormity of the situation—and the evident impact the storm and subsequent floodwaters would have—historic and impressive waves of help and compassion rolled in faster than the storm itself. By some media accounts, the mobilization of generosity provided for hurricane relief has gone unmatched in our nation's history.

To that end, it's no surprise that with the resulting strain on health care, radiology organizations stepped up to help those impacted by the Category 4 hurricane.

Take, for example, the American Society of Radiologic Technologists. The ASRT was among the first organizations to extend [>



Ambulances stand ready to transport to nearby hospitals.



Colleen Kramer, a student nurse, monitors an evacuee's blood pressure.

a helping hand. According to Ceela McElveny, director of communications, the ASRT registered with the FEMA/Homeland Security Hurricane Response Registry and also worked to have radiologic technologists included on the list of health care volunteers needed for medical relief efforts.

Going forward, the organization has made a number of accommodations to assist members who live in counties declared disaster areas by the Federal Emergency Management Agency. According to the ASRT, an estimated 1,000 members live in areas devastated by Hurricane Katrina, which made landfall between New Orleans and Gulfport, Miss., as a Category 4 storm.

The accommodations include a 90-day extension on membership renewals for RTs whose membership expires between Aug. 25 and Nov. 30. Members will retain their original join date and their member record will not show any lapse in membership, McElveny said. The ASRT also will accept Directed Reading quizzes for up to 90 days beyond their Category A approval expiration date until Jan. 1, 2006. And finally, if a technologist's CE biennium end date falls between Aug. 31 and Nov. 30, 2005, the ASRT will move completion dates to a previous biennium period for CE credits earned through ASRT Directed Readings or other ASRT CE products.

The ASRT has also launched a special dis-

Health care worker takes delight in holding her young patient.

cussion board on its website (www.asrt.org) for both radiologic technologists affected by the disaster and those hoping to help their fellow technologists, sonographers and radiation therapists who have been displaced. As of late last week, the board had accumulated more than 170 postings from technologists seeking to share stories of the storm and extend offers of help.

"It is uplifting to see the many offers of jobs, housing and schooling that have been posted on the board, as well as the many messages of support and encouragement," McElveny said.

The ASRT wasn't the only radiologic organization coming to the aid of imaging professionals. The website of the Association of Educators in Radiologic Sciences (AERS), for example, has links to information for students displaced by Katrina and a state-by-state list of programs willing to accept them. (For more on the hurricane's impact on radiologic science education, see "RT Education Recovery," page 17.)

The American Society for Therapeutic Radiology and Oncology (ASTRO) has also posted information on its website (www .astro.org/katrina.htm) on how patients and their oncologists can get in touch with each other. ASTRO has also compiled a list of radiation therapy facilities around the country that can treat cancer patients evacuated from devastated areas of Louisiana, Alabama and Mississippi, the states hit hardest by Katrina. (For more on Hurricane Katrina's impact on cancer treatment, see "Cancer Won't Stop for Hurricanes," page 18.)

Help from Big Radiology

Major manufacturers of medical imaging and radiation therapy equipment also scrambled to the aid of victims along the

> stricken Gulf Coast, many of whom included their own employees.

Siemens Medical Systems, for example, sent portable heart monitors and portable imaging equipment, including two digital X-ray and three ultrasound systems, to clinics set up to triage the thousands of evacuees sent to the Houston Astrodome and the George R. Brown Convention Center in Houston.

"Most of the [evacuated] people are getting bused to the Houston Astrodome, where there is no way to develop film, so you have to have something portable that allows you to acquire and view images on site," Christine Foy, manager of corporate affairs for Siemens Medical Solutions, said in an interview at the height of sheltering activities in Houston. Siemens also launched a 100 percent matching donation program for any of its 70,000 U.S. employees who donate to the American Red Cross Disaster Relief Fund. According to Foy. more than 2,500 Siemens employees live in the affected areas; the company has initiated a hotline for those in need of temporary housing or other essentials.

In addition to a donation of \$6 million to the Red Cross, GE provided a number of portable C-arms and X-ray and cardiac imaging equipment to the cause in Houston, said Mike Swinford, GE Healthcare, general manager, Americas Services. Swinford said GE was also working with mobile imaging equipment operators to deliver MR, CT and PET imaging capability to stricken areas, not just in New Orleans, but also in other parts of

Louisiana, Mississippi and Alabama that were hit hard by the hurricane. (For a look at one RT's experience in Houston, see "Thanks in the Midst of Chaos," page 20).

GE has also begun providing temporary housing for employees affected by the hurricane, Swinford said. Estimates of the number of GE employees impacted by the storm were not available as of press time.

Toshiba stepped up with donations of \$1 million in cash and medical equipment as of the week after the hurricane, said John Zimmer, vice-president of marketing at Toshiba America Medical Systems. Toshiba employees were also donating to relief efforts through the company, through the Red Cross and through donations of clothing and other goods. The company stood ready to provide additional support as the

need arose for things like portable equipment, Zimmer said, noting that the company was aware of 18 employees displaced by the storm.

"Many are staying with friends or relatives, and we have been trying to stay in contact with them on a daily basis to see how they are, and we will make plans to help, once we know more about their needs," Zimmer said.

Meanwhile, Roya! Philips donated \$250,000 to the Red Cross, set up an employee matching donation program and provided a variety of medical equipment for emergency care. The company also set up a website so that employees could contribute to a fund to help other employees who lost their homes. Philips has 30 to 35 employees in its medical systems branch

and many other employees in other business enterprises in the affected areas, said Bret Shafer, CEO of sales and service for Philips Medical Systems in North America.

"As this started to unfold, we had difficulty just locating employees and making sure they were safe," Shafer said. But by the end of the first week, the company was assured that all the employees were safe, although most had lost their homes and were in temporary housing. The management team is trying to do everything to help employees and clients recover from the disaster, he said.

"I think everyone rallies in a crisis, because they care about people," Shafer said. "Everyone is happy to do it and the overwhelming sentiment is, 'What can we do to help?""

RT Education Recovery

The hurricane brought radiologic science education to a halt for many, but the RT community is helping students and faculty to get back on track I BY LAUREN PIGEON

ormally associated with the anticipation of going back to school, this month of September sees many radiologic science students displaced by Hurricane Katrina with no schools left to return to.

Hundreds, if not thousands, of RT program students and educators found themselves without facilities, resources or a way to contact one another after the Category 4 hurricane ravaged the Gulf Coast region.

"I am a radiology student from Delgado Community College in New Orleans. My class has 49 students, and we are in our last year. We were scheduled to graduate in July 2006, but now we have no idea what is to come," one radiologic science student wrote on a discussion board set up by the ASRT for members affected by Katrina.

But soon after one of the worst natural disasters in the nation's history, the RT community—including individuals, organizations and other education programs—quickly came to the aid of displaced students and instructors.

The American Society of Radiologic Technologists (ASRT) and the Association of Educators in Radiological Sciences (AERS) are employing their websites to help disseminate news from the Gulf Coast, to offer displaced students and educators assistance or job openings, and to enable members to ask about and confirm the whereabouts of missing friends, relatives and coworkers.

"If there is something I could personally do, please do not hesitate to contact me. I am thinking [displaced students] might need textbooks. We have some old editions of positioning etc. that we could forward to your institution How about pencils, pens, papers?" read one RT's post on a discussion board set up by the ASRT.

Other RTs posted offers of rooms in their homes to displaced radiologic science students or improved upon for displaced RTs to let them know what they could do to help.

The AERS website (www.aers.org) has links to information for students displaced by Katrina and a state-by-state list of pro-

grams willing to accept displaced students. As of press time, the list contained 30 different programs that have contacted the AERS. Each entry specifies whether the program is hospital or college based. Some entries contain information on which modality the program specializes in.

"We encourage students and program officials from programs impacted by Katrina to contact the AERS office to let us know of their program's specific needs so that we can assist them in getting those needs met," said Richard Terrass, MEd, RT(R), AERS chairman of the board.

The AERS is also coordinating with two large book publishers to supply replacement textbooks to radiologic science students and programs that lost their resources in the hurricane and subsequent flood. More details will be posted on the AERS website as the details are finalized.

Radiologic science programs across the country—from California to Illinois to Florida—have also stepped up, offering to take in displaced students at discounted \triangleright

tuition rates—ranging from fully paid tuition assistance to in-state tuition rates for out-of-state students displaced by Katrina.

As of last week, for example, the Northwestern University Medical Center School of Radiation Therapy in Chicago was offering to waive tuition for two displaced radiation therapy students who transfer to the school. Also as of last week, the radiography program at Houston Community College had taken in two displaced students from Delgado Community College.

"We are looking to help in many ways, whether it is relocation, books or a scholar-ship," said Alex Zafirovski, BS, RT(T), director of Northwestern's School of Radiation Therapy.

Programs accepting displaced students are attempting to make the students' transition as easy as possible, with speedy application processes and mentors and tutors. For example, displaced students arriving at HCC will receive an HCC backpack, catalog and schedule, and help with online admissions, explained Lynne Davis, EdD, RT(R), department chair of radiography/cardiovascular technology at HCC. Admissions counselors will also gauge the student's academic history and determine their degree plan and necessary academic coursework. Peer tutors will be assigned to help the students acclimate to the program, Davis said.

Meanwhile, current HCC radiologic science students themselves are reaching out to hurricane evacuees.

The students have adopted a shelter to which they have already delivered four carloads of clothing, toys, water, food, toiletries, blankets and money. Other faculty and students were working at the Astrodome as volunteers with the University of Texas School of Public Health, gathering information from each evacuee to pinpoint potential health problems.

HCC is also helping some of its own students whose families were affected of Katrina.

"We have at least one student whose entire family has arrived in Houston. We are trying to provide them with clothing, towels, linens, etc. We eventually hope to help them get set up in apartments," wrote Cheryl Timm, MS, RT(R)(CT), clinical coordinator of the HCC radiography program.

Lauren Pigeon is an editorial assistant at ADVANCE. She can be reached at lpigeon @merion.com.

Cancer Won't Stop

Organizations and facilities scramble to help patients receive care | BY SUZANNE CHANG

n the wake of Hurricane Katrina, many cancer patients lost not only their homes and possessions, but also contact with their oncologists. Fortunately, a host of facilities and organizations jumped in to help make sure that displaced cancer patients were able to continue their vital treatment regimens.

The American Society for Therapeutic Radiology and Oncology, for example, has posted information on its website (www.astro.org/katrina.htm) on how patients and their oncologists displaced by Katrina can get in touch with each other. The organization has also compiled a list of radiation therapy facilities around the country that can treat patients who have been evacuated from devastated areas. So far over 70 facilities from all over the country have volunteered their services to the displaced patients.

A toll-free number, 800-636-3876, has also been established whereby displaced oncologists can register their contact information with ASTRO; "substitute" oncologists will then be able to contact the patient's original oncologist about the patient's treatment protocol. The state of Louisiana is temporarily allowing medical professionals from out of state to help with the aftermath of Hurricane Katrina. Normally, Louisiana only allows physicians to work in the state if they have a Louisiana medical license.

Four days after Katrina swept through the Gulf Coast, the Patients' Comprehensive Cancer Center, located in the Dallas suburb of Carrollton, announced that it would provide immediate treatment and assistance for Gulf Coast cancer patients displaced by the storm.

"Timing and continuity are key to

Putting Customer

Katrina's wrath has radiologic equipment makers scrambling to get client facilities back on their feet and operating again | BY JOYCE WARD, CNMT, RT(N)

n addition to displacing hundreds of thousands of people and destroying billions of dollars' worth of property along the Gulf Coast, Hurricane Katrina took out untold numbers of medical imaging and radiation therapy equipment.

As a result, major radiologic equipment manufacturers are busy assessing the damage and striving to get their client hospitals, clinics and other facilities up and running as soon as possible.

"We have account executives for all the hospitals, so they are in regular contact with them," said Christine Foy, manager of corporate affairs for Siemens Medical Solutions. According to Foy. Siemens is providing telecommunications equipment to the stricken areas to help employees, customers and emergency personnel in communications because so many telephone lines and cel towers were damaged in the storm. While customers assess their needs, Foy said Siemens employees are managing many hospital applications out of its corporate offices in Malvern, Pa.

"Our data center is an application provider, so hospitals outsource all func

for Hurricanes

maximizing treatment success," said Dennis Birenbaum, MD, PCCC's medical director and CEO, in a press release issued by PCCC, which teamed up with the Red Cross, FEMA and the Salvation Army to notify cancer patients of the availability of care at its facilities in Dallas, College Station and Carrollton, Texas.

"The oncologists had to evacuate the same areas that these patients are coming from. No one knows where the oncologists are," said Anjie Coplin, director of public relations at PCCC, early last week. "Since we have no medical records for these patients, we are really starting from scratch."

The PCCC was able to take on the extra patients because of a task force it had set up to handle situations like the aftermath of Hurricane Katrina. According to Coplin, the facility has experience handling patients from around the world who have been displaced by similar disasters and emergencies.

"Although we have the task force, we have not dealt with something on this magnitude. We are really using our crisis management knowledge. We are learning as we go," said Coplin. "[A] disease like cancer ... has to be treated continuously and immediately, so we are doing all we can to accommo-

date these displaced people." PCCC was also trying to establish transportation, lodging and insurance for patients who require them.

As of Sept. 13, PCCC was treating four displaced patients; three at its Dallas facility and one in College Station, Texas. The facility is currently fielding 24 inquiries and has scheduled eight more patients from those inquiries.

"We have two in the process of setting up [treatment] appointments. We are starting to see the phone calls pick up. The patient from College Station is being flown in to Carrollton to see one of our oncologists. I think that once people are settled, they are

starting to really think about their medical needs, so we anticipate an increase in calls," said Coplin.

In Baton Rouge, La., meanwhile, the Mary Bird Perkins Center has also established a directory to help match displaced oncologists with displaced patients. Doctors who want to notify their patients of their whereabouts can get more information at www.marybird.org.

Suzanne Chang is an editorial assistant at ADVANCE. She can be reached at schang @merion.com.



Service to the Ultimate Test

tions to us," she said, noting that the capability permits remote data storage and access to patient information, something that is very valuable during such a crisis.

"Communication is virtually non-existent at many of our sites," said Derek Brodrick, director of North American Customer Support for Varian Medical Systems. Interviewed during the second week after Katrina struck, Brodrick said many sites were still flooded or security forces were restricting access to Varian's client facilities in the affected areas.

"Because this is brackish water, there is going to be contamination and some of the equipment will not be salvageable," he said.

Philips Medical Systems has assembled an assessment team that is going from site to site to assess equipment and see what can be salvaged and what needs to be replaced, said Bret Shafer, CEO of sales and service for Philips Medical Systems in North America. The company has set up housing in recreational vehicles on the perimeter of New Orleans so that service people have a safe place from which to work. The company is also centrally coordinating supply chain logistics to provide equipment to clients and government agencies as needed.

As of the week after the hurricane, Toshiba knew of 11 customer sites that had sustained damage, but the company was still trying to get in touch with some customers and get into the sites to assess the damages and help get systems back on line, said John Zimmer, vice-president of marketing at Toshiba America Medical Systems.

GE employees are closely monitoring MR systems that have not already been shut down to make sure they are safe, said Mike

Swinford, general manager, Americas Services at GE Healthcare.

"We remotely monitor these systems so we know when they last had power and how long cryogen levels will last before the magnet has the potential to quench," Swinford said, noting that in many cases, the company connected the machines to generators to help maintain cryogen levels. In addition, Swinford said, GE is also bringing in fresh crews and technicians to support hospitals in less damaged peripheral areas, because for every hospital that was evacuated there was a rush of patients to still functioning hospitals.

Joyce Ward is senior technical editor at ADVANCE. She can be reached at jward @merion.com.

hen word began spreading Labor Day weekend that busloads of Hurricane Katrina evacuees would soon be arriving in Houston, Frank Hawley, RT(R), received a phone call from Tom Mackey, associate dean for practice at the University of Texas Health Science Center.

"He said, 'Frank, we need you ... I don't know when they're going to want you, but can you mobilize when they do call in?" recalled Hawley. By late afternoon on Friday, Hawley, the owner of Mobile Health Testing Inc., in Pearland, Texas, and three fellow radiologic technologists were being led by police escort through the streets of downtown Houston to the George R. Brown Convention Center.

By the time they arrived, Hawley said, the scene was one of mass chaos.

"I thought, 'God, I hope they can get this thing organized and ready," he said in an interview with ADVANCE.

But before long, volunteers were setting up exam tables and partitioning off cubicles with curtains normally used to separate vendor



Johnetra and Tawnea Kissach are sheltered at the George R. Brown convention center in Houston. courtesy Andrea Booher/FEMA

Thanks in the Midst of Chaos

A radiologic technologist relates his experience helping to triage evacuees I BY JENNY SONG

booths during conventions. The gigantic floor of the convention center was quickly converted into a makeshift medical center, with a command post on one side and a Red Cross processing center on the other. Lining the walls from one end of the hall to the other were cots and inflatable beds that awaited the more than 1,200 men, women and children who arrived over Labor Day weekend.

In the midst of it all, Hawley and his team X-rayed at least 65 patients on the first night alone in his 18-wheeler clinic, which houses two X-ray units, including a new portable X-ray machine donated by GE Medical Systems. Most of the patients had been suffering from hand and foot fractures, making the portable X-ray unit an invaluable resource, Hawley said.

"My X-ray machine onboard the mobile trailer does only PA, lateral, lumbar and chest X-rays," he said. "We could still move it up and down and rotate the collimator to take angle and extremity shots, but the portable was really great to have, since we could have them sit down and put the cassette on the chair and image their legs, arms or hands."

One man who had fallen initially required a knee X-ray. His knee was OK, but then he complained of pain in his hand.

"When I was examining him, I felt unusual elevation on his index finger, so I asked the doctor if we could go ahead and X-ray him," Hawley said. The film revealed that the patient had suffered a splintered fracture; he was taken to a nearby hospital for treatment.

"They are probably going to have to do an open reduction on him," Hawley added.

The film processor onboard the mobile clinic, which processes films in just over a minute, has been a crucial part of imaging oper-

ations in the convention center, allowing physicians to immediately determine which patients need to be sent to a hospital.

"Out of all the X-rays we were taking, probably a dozen had to be referred to the hospital—just from the X-rays we were taking," Hawley said. The mobile imaging unit was situated next to the Houston Fire Department gathering center, where volunteers stood ready to load patients onto gurneys and take them out the side door into ambulances bound for various hospitals.

Not all patients requiring X-rays had broken bones, however.

"One lady who was 58 years old had several chest X-rays and a thoracic because she had cancer that was spreading," Hawley said "They needed some further X-rays to determine the extent of it. She was transferred to one of the hospitals."

The clinic provided 'round-the-clock care during Labor Day weekend, but as of last week, clinic hours at the convention center were cut back to 8 a.m. to 8 p.m. daily, with emergency care only provided overnight.

When he had a moment to spare, Hawley said, he made it a point to check up on patients he had X-rayed and to visit with evacuees to see how they were doing. He said the general feeling among the evacuees was one of gratitude.

"The people just feel fortunate," he said. "The one thing they are really grateful for is the opportunity to take a shower—oh, it's amazing."

Jenny Song is an assistant editor at ADVANCE. She can be reached at jsong@merion.com.

Imaging Through a Disaster

Ochsner Clinic in New Orleans never stopped working I BY JOYCE WARD, CNMT, RT(N)

hile more than a dozen New Orleans health care facilities were wiped out by Hurricane Katrina, a combination of planning, geography, luck, perseverance and dedication enabled the Ochsner Clinic to remain operational.

That's the word from Dana Smetherman, MD, radiologist and section head of breast imaging at Ochsner, located in the heart of the city devastated by floodwaters from Lake Pontchartrain that engulfed the city after the levees separating New Orleans gave way a day after the storm passed by.

Dr. Smetherman painted a picture of a facility that struggled with, and yet overcame, a host of challenges brought on by the storm and ensuing floodwaters.

"Our plan had much of our equipment on emergency power, so we were able to have ultrasound and portable ultrasound," said Dr. Smetherman, who spoke with *ADVANCE* on Sept. 8. "The elevators went out at various times, so we stationed portable X-ray units on as many floors as we could for regular radiographs."

Dr. Smetherman credited the hospital's placement on high ground, along with a well-tested emergency plan and skilled staffing, with allowing the hospital to continue operating. Because the hospital was situated some 8 feet above sea level, trucks were able to get in to bring supplies, transport patients as needed, and supply fuel for its generators.

One of the biggest challenges was communication, so technologists remained near phones to receive orders for scans and some orders were hand-delivered. Technologists also printed the films in the early stages, so they had to start a makeshift film storage area. Later, the department was able to transfer images to one computer station, she said. The transcription system was down, so staff had to handwrite diagnoses for referring clinicians.

The hospital also was able to use one CT machine in the emergency department that was connected to the generator.

"You should have heard the relief in peoples' voices when we said we could do things like CT pulmonary angiograms," Dr. Smetherman said.

"We had some challenges when the equipment became too heated at times," she said. "We did things like switch out some equipment from the machines upstairs that were a little cooler."

Another problem arose at about 7 a.m. on Monday, when hurricane winds blew off parts of the roof.

"The water started coming down the wall, so we covered the equipment with Visqueen [polyethylene film] and all the computer terminals with trash bags," she said, noting that the radiology staff was able to save all of the equipment.

Unfortunately, the hospital's three MR machines did not fare as well as the rest of the hospital's radiology equipment. With rising temperatures, the hospital staff has to go in and do an emergency quench of the magnets, Dr. Smetherman said, noting that the staff feared the possibility of a "black quench," where the magnets could explode if the

temperature got too high or if water entered the system.

"One of our radiology supervisors, Susan Young, who is one of the bravest people I have ever known, insisted on quenching them herself," Dr. Smetherman said. "That is a potentially dangerous situation because all the oxygen can be sucked out of the room."

Indeed, after breaking the windows of the rooms to reduce the vacuum effect, propping open the doors and stationing radiology staff outside the rooms, Young quenched all three magnets.

Dr. Smetherman speculated that the magnets may be beyond repair. Meanwhile, the hospital has ordered mobile magnets so it can continue to provide imaging services to patients in Jefferson Parrish and surrounding communities.

• For more on the aftermath of Katrina, go to page 33.

Joyce Ward is the senior technical editor at ADVANCE. She can be reached at jward@merion.com.

