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Health care 911: What you need to know about emergency preparedness

Emergency planning requires flexibility, knowledge of community

Threats to continuity of care can come in many forms, and those with the responsibility of ensuring that continuity face new challenges every day.

For example, how many health care executives were worried about bioterrorism 10 years ago? Was "going postal" as much a threat in the 1970s as it is at the dawn of the 21st century?

Because of these constantly changing realities, experts say, plans outlining a facility's response to crises must be living documents, continually updated and tested. Many even have changed the names they give these plans, to reflect the evolution of their environment and the planning process.

"Instead of calling it 'disaster planning,' it's referred to more often now as 'emergency planning,' and it's much more broad," points out **Debbie Zuege**, RN, MS, operations director for medical specialty care with Kaiser Permanente in Denver.

"There are a lot of different things you should be prepared for," she continues. "It's not only the tornado that rips buildings apart; it could be a water main break or anything that disrupts your service. We've really seen an evolution of this process over the years."

"Preparedness starts with a risk assessment within your specific

Key Points

- "Disaster planning" has given way to "emergency planning," reflecting a wide range of potential events.
- The range of occurrences for which you must prepare will be dictated by your environment.
- Maintaining continuity of care remains a top priority for any emergency plan.

environment — areas in which your specific facility is potentially at risk," says **Denny Thomas,** CPHRM, director of risk management at St. Joseph's Hospital / Ministry Healthcare in Marshfield, WI. "It can be anything from employees with issues to infant abduction.

"Here, we have trains that go through our area that carry toxic agents," adds Thomas, who is also a board member of the American Society for Healthcare Risk Management in Chicago.

"If we have a derailment and toxic gas is being spread, we must be concerned with shutting down our air-handling system while still meeting patients' needs," he adds. "So the type of preparedness required will be dictated by your environment. For example, we are in a dry area, so we're not especially worried about floods or hurricanes — but tornados are a very real [threat]. Also, we are subject to severe winter storms, so we have to be concerned with maintain staffing levels."

David L. Tibbals, president of D.L. Tibbals Risk Management Consulting Inc. in Atlanta, advises organizations to do some investigation.

"The first step is to really determine the array of potential risks that the hospital or health care provider could be exposed to," he says. "Take a long look at what that array is, and what the potential impact of each situation is. Then, determine what needs to be done and who will perform the functions necessary to mitigate the potential impact."

Continuing care in a crisis

Observers agree that maintaining care during a crisis must be of paramount importance. "How you do that is dependent on the type of scenario you face," says Thomas. "For example, you may have a rapid influx of patients with an emergency. One facility I worked at had 100 patients arrive all at once due to carbon monoxide exposure; they were brought in by bus in respiratory distress. We needed to meet those unique needs; however, your [emergency department] must continue to operate as well. You need to ensure that staff levels are adequate, so alternative plans must be in place to meet the immediate needs of the disaster and still not place the other patients at risk."

Kaiser Permanente plans for emergencies in a number of broad categories, such as fire, tornados, bomb threats, power outages, earthquakes, flood and water main breaks, snow and ice, and hazardous materials, says Zuege. She notes that her committee must plan for an outpatient hospital, 16 medical offices, and 22 buildings.

Patients and employees come first

"We always look at the safety of patients and employees first," she says. "We don't want to put them in any kind of jeopardy. For example, we have a 12-story building, and if we can't use the elevators, we have designated certain areas to which we have to stage. If you have to evacuate the building, you would do it by the stairs. There are certain procedures on emergency patient transport you learn as a health care provider. And, of course, most facilities have backup generators. In the [intensive care units], ventilators may not be working, so you have to be prepared to do it manually; you need to have more people for workarounds."

While emergencies may be unique situations, on one level they call for going back to the basics of nursing and health care delivery, Zuege points out.

"We have all of this great equipment, and that's awesome, but if you have a power outage over a long period of time you may have to end up closing your facility, or canceling every nonemergent procedure," she explains. "You have to start prioritizing. We have a six-bed ambulatory surgery department, and once when we had a six-hour power outage, we began canceling patients. We had one on the table, and we got [that patient] off as quickly as we could."

Do patients appreciate such a high level of preparedness? You'll never see it reflected in a satisfaction survey, says Zuege. "I really don't think they have any idea," she observes. "There are a lot of situations they are totally blind to; they don't even know something's going on. We do patient satisfaction surveys quarterly, and I've never seen dips or raises after an emergency."

Keep your plans fluid

It's critically important that your facility's emergency preparedness plan stay fluid, as well as current, says Thomas. "I've had the opportunity to engage in various disasters in Wisconsin, and when a plan was very descriptive but without latitude, it backed you into a corner.

"A good plan interfaces with the community; you need to know its capabilities," he continues. "One hospital I worked with had a very prescriptive plan on how to evacuate the building, including contacting the fire department, which, they asserted, had 'all the equipment.' When I checked, the fire department had only *one* piece of apparatus to help move patients."

Your plan also must be kept current, Thomas advises. "Our facility even has a subcommittee that reports to the safety committee, to include another set of eyes and to keep the plan reality-based," he says. "And even though some people don't care for outside agencies like the Joint Commission [on Accreditation of Healthcare Organizations], they are an excellent resource. They help keep your place up to date. To me, the survey process is a good risk-assessment tool. I'd much rather have them identify a potential gap and take corrective action than to place my facility at risk and have a potential disaster on my hands." **(The Joint Commission also is continually updating its emergency preparedness standards. See article, p. 100.)**

Don't assume that your community will remain unchanged from year to year, either, Thomas warns. "Some trends that historically were characteristic of large cities are now in suburban and rural areas, such as widespread violence or babies being abducted.

"You've got to look at which of these factors may affect you now, and where you may be potentially at risk," he observes. "Your staff need to be trained in early recognition; we've had a multidiscipline team put together a patient-assessment gradient. Now, upon admission, we can conduct an anger assessment, note any history of being arrested or convicted for violent crimes, and check for a history of domestic abuse."

Keeping your plan up to date requires constant vigilance, says Zuege. "Our committee meets every other month, and that's where new issues get raised," she says. "We currently redo our policies and procedures every couple of years. They get dusted off on a fairly routine basis."

Kaiser Permanente holds drills about twice a year, says Zuege. "Our committee decides what kind of drill it will be. This year, we will work with our central operators regarding how call-down works if we have to open our ECC [emergency command center]."

Put your plans to the test

The drills have been very helpful, she says. "Every time we have one we find something out," she explains. "For example, the ECC used to be located on the first floor of this building, but through a drill we found that we had to move it."

"You've got to test the plan to make sure that it is really effective," Tibbals adds. "For example, will these people really be able to respond? Periodically, you also have to take a look at whether any new risks have emerged, either as a result of changes in internal operations, or perhaps external changes that have occurred in the surrounding environment."

A good way to do that is through a risk-management audit, says Tibbals. "An audit is essential and should be done, depending on your growth, certainly no less than on an

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annual basis, and perhaps every six months. It can either be done internally or with the periodic involvement of various outside sources, such as the fire department. And of course, it is routinely done within the mandates of the Joint Commission."

Finally, Zuege notes, there's an added incentive for properly creating an emergency preparedness plan and updating it on a regular basis: chances are you'll have to use it.

"There have been a couple of times when we had to open our [ECC]," she recalls. "The most significant challenge was in March 2000; we are a unionized organization, and our professionals went on strike.

"[Opening the ECC] is a judgment call that is made by our vice president of operations, and it's based on how significant and widespread the problem is. If somebody loses power in midsummer for an hour, you probably won't bring it up, but if a building is hit by a tornado, then for sure it will swing into action," Zuege adds. ■

JCAHO standards add community emphasis

Document evolves to reflect new realities

Just as the litany of potential health care emergencies can change and grow from year to year, so do the standards produced by the Oakbrook Terrace, IL-based Joint Commission on Accreditation of Healthcare Organizations (JCAHO).

This year's standards are rife with new language. (The new standards can be found on JCAHO's web site: www.jcaho.org/standards_frm.html.)

"We have tried to write the standards in such a way that hospitals would be able to identify what might be unique to their situation, as conditions vary in different parts of the country and in different types of hospitals," notes **Paul Schyve,** MD, senior vice president.

Things can happen to effect changes in the standards, says Schyve: For example, there could be changes in the community environment.

"For instance, bioterrorism has now become evident, and the health care system needs to develop preparedness for it, yet a few years ago essentially no one would have been thinking about it," he explains. "At the same time, we are constantly developing new ideas and knowledge about how to do our jobs more effectively."

"The changes that stand out most this year talk about coordinating more with the community," adds **John Fishbeck,** assistant director of the division of research, standards, and development at JCAHO.

"In the past, expectations were that plans be in place, but we did not address how to integrate those plans with the community at large — other hospitals, law enforcement, the Red Cross. That's where the weakness was," he adds.

"As people started to look at the potential risk of bioterrorism, for example, they realized that it is not just the health care organization that can make changes to be prepared for it," Schyve says.

"It doesn't help the hospital to have special procedures to use when suddenly it has an influx of people with exposure to a bio element, and, in fact, no one has communicated to them that something just happened at a nearby stadium and people were exposed. Another example was the recent flooding in Houston; while individual hospitals may have had plans in place, in this situation, we had a number of hospitals that had to be closed for a period of time," he points out.

"This was something people had not focused on before; what if a whole bunch of hospitals closed down all at once?" Schyve asks. "We don't expect that to happen, but it leads people to see that we need to think a little differently. Individual hospitals can no longer afford to think only within their own 'silo.'"

Being prepared

In order to adequately respond to the larger challenges, organizations must be well-prepared far in advance of the potential event, Fishbeck notes.

"Meetings need to be going on so everyone knows each others' strengths, and what they can bring to the table," he says. "In Salt Lake City, for example, people are already prepared for the upcoming Olympics. They have gotten together, conducted drills, worked with communications, transfer agreements, and so forth.

"It's true there are risks you realize ahead of time may occur, like a tornado, so your organizations can work together on how they would deal with that," Schyve explains. "But there are also the risks you can't predict, when something

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unexpected or more general occurs. It almost requires you to make a community plan for the unpredicted. But then, that's the idea of emergency management: Find the key people and get them together. Then, if you know who these people are, you have to have your emergency management system in place."

That includes communication, Fishbeck says. "You must have a communication system designed that's consistent with your community — an incident command system, if you will."

Involving community agencies

That system should involve public health officials, the Red Cross, the fire department, police, the coroner's office, and agencies that provide food, supplies, and utilities. "In short, everything that the hospital needs," he says.

Once everything is in place, says Fishbeck, make sure the plan is kept current. "Things change, personnel change, the location of the door to the emergency room could change."

"You should regularly review the plan with relevant parties, even if no changes are needed," he insists. "That's one way to make sure this does not simply become a dusty book on a shelf. Second, make sure that whatever you have put in there is still applicable. And always incorporate new information — new knowledge, new equipment, whatever."

"In our standards, we talk about reviewing a plan at least annually — not only internally, but externally," Schyve says.

"Make sure telephone numbers are up-to-date, that your contacts are still the same people. Also, two drills a year have to occur, and you should critique and learn from them," he adds. ■

Docs design web-viewing system for data access

Real-time test results, images are available

If a physician at Cedars-Sinai Medical Center in Los Angeles wants to check a patient's lab or surgery results, those results are only a mouse-click away, thanks to the development of Web/VS (web-viewing system) — designed by some of the facility's own physicians. Recently, their access to information was even further enhanced as the system was adapted to accept Palm Pilot communication.

"But Palm Pilot usage is really the icing on the cake; the hard part was setting up and implementing the system," notes **Michael Shabot,** MD, director of surgical intensive care and medical director of the Cedars-Sinai Enterprise Information Services.

"We now have a total of four physicians working either full- or part-time in IS [information services], which is very unusual," he says.

The system was developed in 1998, born of the recognition that "physicians' expertise is in medicine and not in computers, nor is it ever going to be in computers," Shabot notes. "When we took over information services in 1997, we saw that physicians had learned to use the web and were pretty good at that. We had a lot of data that could be made available on a web-viewing system, but there was not — and still is not — a program that does that, so we wound up writing it for ourselves."

A clinical data repository

Shabot and his group created what he calls a "clinical data repository," which holds some, but not all, of the facility's lab results, admission and discharge information, and dictation notes. "To write such a program for noncomputer-literate

Key Points

- Instant access shortens time needed to see results and change treatment.
- The system is so easy to use that no classes were required.
- Recent addition of Palm Pilot capability is "icing on the cake."

docs, you need some docs who are computer literate," he says, "But the system has to be logical and easy for docs to use."

And this system is very easy; in fact, there were never any classes held on how to use it. "The doctors wouldn't have gone anyway," Shabot comments. "[America Online] taught docs two things: how to log on and how to use the web — how to click."

And that's all the expertise that's needed for this system. When on-campus, physicians just go to the site and use their log-on ID and password. When off-campus, the physician needs a digital certificate or a secure-ID card, created with sufficiently strong encryption to meet government standards.

"As soon as they get in, it shows them their list of patients in the hospital," Shabot explains. "If they are consulting, they can just click on a patient's name or ID number and go off to the data. Everything is there, including X-ray images, which appear in high resolution."

Other Cedars-Sinai systems hold specific data and serve up those data on request, Shabot explains. "For example, EKGs are stored on the EKG server," he says. "But when a doctor needs an EKG and doesn't know where it is, he just views a list by dates and clicks on that date, and it comes up in a window."

'Instant access'

The ability to access patient information, compared with that process before Web/VS, is "like night and day," says Shabot. "Before Web/VS, doctors waited for paper reports to be faxed or mailed to them. Now, most of that is eliminated; they can see results literally as soon as they leave the instrument in the lab."

The new system shortens the amount of time patients have to wait for results, but even more important, says Shabot, it shortens the time needed for physicians to see the results and make a change in treatment, such as different medications or dosages.

"Patients are treated sooner and are able to leave the hospital sooner," he notes. "The whole point is getting the patient well quicker, and this is the way to do it. In the old days, you'd have to wait for CAT scan films to come out, then find the radiologist, read the films with him or her, and so on. Now, as soon as the images are done, they immediately go in the web server. I can literally see the results before the patient gets back to the room."

Most of the time, the physician doesn't even need to go to radiology to consult about the results. "We can do it on the phone, since we're both looking at the same image," Shabot explains.

More than 25,000 'hits'

With 1.9 million square feet under one roof, and a quarter mile to walk from one end of a ward to another, Cedars-Sinai was a particularly appropriate venue for a system like Web/VS, and the usage seems to bear this out. "We hit an all-time record high this Monday with 25,500 page hits — and that's only our internal web server," says Shabot.

He notes that Cedars-Sinai has about 800 inpatients on any given day and also serves thousands of outpatients a day. "We have about 1,000 physicians who have log-on IDs," he says.

The new Palm Pilot features required only a slight adjustment to the system, since all of the data were already Web-viewable, explains Shabot. "The Palm VII has Applets, so all we had to do was reduce the amount of data per screen to four or five columns vs. 10," he says. "Now, wherever a doctor is, in the car — hopefully at a stoplight — away from the office or at the airport, he can get the results he's waiting for wirelessly. Now, you don't even need a computer; I can call and get my ICU results from any metro area around the country."

The Palm manufacturer told Shabot that Cedars-Sinai may be the first institution to make information available in this fashion, but it seemed like a logical step to him. "They include a free software development kit on their web site," he says.

"I had it shipped in from a computer store, got our technical people to download it, and within three days we had a working application I was able to use from home."

Will the Web/VS ever be made available to other medical facilities? "We're looking to see if perhaps it could be made available through a third party," Shabot says. ■

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Balanced approach yields huge quality turnaround

'Burning focus' of board, management key factor

Key Points

- Interdepartmental quality meetings facilitate sharing of workable ideas.
- "Golden rules" of hospitality help boost patient satisfaction numbers.
- If clinical quality and service quality improve, fiscal benefits are sure to follow.

How does a hospital boost its patient satisfaction levels from the 22nd to the 87th peer percentile in just a few short years? "Hard work" is the easy answer, but according to the quality team at Memorial Medical Center in Johnstown, PA, it took a concerted effort by the entire staff, led by a focus on quality on the part of the hospital board and top management.

The result was the recent naming of Memorial as the winner of the South Bend, IN-based Press, Ganey Associates' Success Story contest, which drew more than 130 entries. The journey, say the key players, began at a very difficult time in the hospital's history.

"Two or three years ago, we had run into some significant fiscal issues. We had been losing some $2 million a month from operations," says **Steven E. Tucker**, president of Memorial. "This was part of the driving force for change. We reassessed the situation as a board and staff and adopted a balanced strategic approach of service excellence, clinical excellence, and fiscal soundness."

Problems were mounting; quality suffered

At the time, in addition to the fiscal problems and the aforementioned low patient satisfaction scores, admissions also were declining. Two years later, Memorial is averaging a positive cash flow of $400,000 per month; admissions are up 9% over last year, and patient satisfaction now is consistently in the top 11th to 12th percentile.

"Some of the biggest changes had to happen in the administration," says Tucker. "But we also honestly listened to employees, physicians, patients. We ran employee retreats by department for 50 to 60 employees, where we spent three to four hours brainstorming. Then, we implemented the suggested changes; everybody was encouraged to look at improvement."

In the face of pressing financial problems, a good deal of "cutting and slashing" had to be done immediately, says Tucker. "Then we embarked on our pursuit of service excellence, with the goal of very satisfied employees, patients and physicians," he recalls. "We committed to a cultural change and a real focus on patients — not just lip service. Not a single board meeting goes by where we don't talk about it."

The improvement process was given a major overhaul, says **Suzanne D. Ross**, MSN, director of performance improvement resources. "Every department was doing its own thing in little silos and had been measuring the same things for 20 years," she observes. "We created a council for performance improvement, where people from every department in the organization come together each month."

Departments report their activities on a rotating basis, Ross explains. "When you hear what other departments are doing, it can sometimes become a 'wow' moment when you realize that idea can work with your department, or perhaps you are facing a similar situation and can help another department. It has created a lot of interdisciplinary teams."

The process is employee-driven, Ross emphasizes. "Being a leader means getting employees motivated. Seeing what they can get done has had a huge impact on the morale of the organization."

All of the elements of excellence being emphasized at Memorial impact each other, according to **Anthony J. Campagna**, director of laboratory and patient registry. "Many of the things we work on and present deal with all of those elements," he says. "We benchmark the industry for best clinical practices; when we marry them together, we look at the fiscal impact. If we meet patients' needs and we do what we need to do clinically, there will be some fiscal benefit. All of it comes together very nicely."

The 'golden rules'

While many process improvement initiatives were implemented, one of the most significant, says Ross, was an employee hospitality initiative that was codified into a set of "golden rules." "We have expanded them recently into a set of performance standards," she says. "Employees

The 'Golden Rules' of Hospitality

- ✔ **EXTEND A WELCOME:** Make eye contact, smile, say hello, introduce yourself, call people by name, and extend a few words of concern.
- ✔ **NOTICE WHEN SOMEONE LOOKS CONFUSED:** Stop and lend a hand.
- ✔ **TAKE TIME FOR COURTESY AND CONSIDERATION:** Kind words and polite gestures make people feel special.
- ✔ **KEEP PEOPLE INFORMED:** Explain what you're doing and what people can expect in terms they will understand. People are always less anxious when they know what is happening. Continually communicate.
- ✔ **ANTICIPATE NEEDS:** You'll often know what people want or need before they ask. Don't wait. Act.
- ✔ **RESPOND QUICKLY:** When patients are worried or sick, every minute seems like an hour. When customers/coworkers need information or help, they find delays frustrating.
- ✔ **MAINTAIN PRIVACY AND CONFIDENTIALITY:** Knock as you enter a room. Watch what you say and where you say it. Protect personal information.
- ✔ **HANDLE WITH CARE:** Slow down. Imagine that you're on the receiving end.
- ✔ **MAINTAIN DIGNITY:** Give choices in interactions with patients. Provide privacy. That patient/customer could be your child, your spouse, your parent, or your friend.
- ✔ **TAKE THE INITIATIVE:** Just because something is "not your job" doesn't mean you can't help or find someone who can help. Follow through — do what you say you will do. Take advantage of opportunities for improvement.
- ✔ **TREAT EVERYONE WITH RESPECT:** Be approachable. Your words, tone and nonverbal communications should reflect consideration. Address the patients/customers by name and include them in your conversation.
- ✔ **LISTEN AND ACT:** When people complain, don't blame others or make excuses. Hear them out and do all you can to respond to the problem and make things right.
- ✔ **HELP EACH OTHER:** When you help your co-workers, you help customers, too.
- ✔ **KEEP IT QUIET:** Noise annoys! It also shows lack of consideration and concern for patients.
- ✔ **APPLY TELEPHONE SKILLS:** Speak clearly, giving an appropriate greeting, name, and department when answering the telephone. Sound pleasant. Be helpful. Listen with understanding. When you're on the telephone, our reputation is on the line.
- ✔ **LOOK THE PART:** Professional dress and demeanor build people's confidence in all of us.

Source: Memorial Medical Center, Johnstown, PA.

sign a pledge that they will commit to living by them."

"This is required as a condition of employment," adds Tucker. "Those who don't sign are probably not going to be scheduled for work." **(For a copy of the golden rules, see box, above.)**

The process that led to the development of these standards began with patient responses indicating that Memorial's staff were not being very courteous or friendly, Ross says.

"This can be turned around by something as simple as seeing someone in the hallway who looks lost, and approaching them and asking if you can help, or saying 'Hello' when you pass someone in the hall," he notes.

Campagna says a recent experience showed him how deeply engrained these rules have become in the collective employee psyche.

An attitude of service

"I was on my way out into the parking garage last night and saw a guy who looked lost," he recalls.

"As I was asking if I could help, I saw another employee who said, 'Tony, I see you're going

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home; I'll help him.' That kind of thing happens all the time here," he adds.

The entire process emphasizes rewards as opposed to punitive action, says Ross. "At the director level, we send the vice presidents names of people on a weekly basis who need to be thanked. If a patient sends a positive comment, we send the staffer a gold certificate signed by Steve, which is put on display in a public place in the patient care area."

Numbers up everywhere

The initiatives at Memorial have raised rankings across the board. "Our outpatient satisfaction team has helped us move up from the 25th percentile to the 90th," Campagna says.

"Employees came up with suggestions to improve the process, such as escorting patients to testing areas; a greeter who enters patients' names into a computer and goes out to find them and bring them into a cubicle for more privacy; a free valet program, because parking had become an issue. Volume scheduling is also up 25%."

"We're absolutely convinced that attention to those issues has rewarded us with more patients," Tucker explains.

"Last year, when we went to the board, we asked them to allow our target to be lower for profitability and to invest more money in service excellence initiatives because we honestly felt it would drive more business — and that has been the case. The population in our area is declining and aging, but we are garnering significantly more market share." ■

Use of AEDs improves cardiac response time

Response times reduced from 10 minutes to two

You'd think that if you're going to suffer a sudden cardiac arrest (SCA), the best place to have it is in the hospital. And while that may be true, one hospital in Providence, RI, has discovered there's always room for improvement.

Ten years ago, the typical time from discovering the victim to initial shock at The Miriam Hospital was seven to 10 minutes; today, it's about two minutes.

The difference? Today there are 22 automated external defibrillators (AEDs) at Miriam, and every nurse on staff is trained in their use as a first responder.

Do AEDs belong in a hospital?

The idea of AEDs on airplanes and at large public events seems like good common sense, but wouldn't they be a bit redundant in a hospital setting? Not at all, insists **Sandy Sawyer-Silva**, RN, MSN, CCRN, nurse manager of the intensive care unit (ICU) at Miriam.

"An AED is, in fact, *not* redundant in a hospital — it's a first-line device for SCAs," she asserts. "It is estimated that between 85% to 90% of all sudden cardiac death is due to shockable rhythms, so the faster you can get the device to patients and shock them, the greater the likelihood of survival."

The literature seems to bear her out. Here are just a few examples:

- SCA survival rates approach 90% in coronary care units, which typically are well-equipped with manual defibrillators and highly skilled operators.[1]
- Each minute of delay between the onset of

Key Points

- Automated external defibrillator (AEDs) are most definitely not redundant in a hospital setting.
- All potential first responders are trained in use of device.
- Facility sites usage of AEDs is approximately 20 times a month.

an arrest to defibrillation decreases the chance for survival by 10%.[2]

• Defibrillation delays in hospitals can be attributed to outmoded hospital protocols that require nurses — often the first to respond to a patient in distress — to administer CPR, call for the defibrillation team, and wait.[3]

"About 15 years ago, we did a time study and looked at how long it took us to deliver the first shock," Sawyer-Silva recalls.

"We were stunned to find that even nurses and residents trained in advanced cardiac life support took seven to 10 minutes to get off the first shock — and this is a small hospital [242 beds], where you don't have to go very far," she explains.

"With AEDs we can successfully and repeatedly get three successive shocks off in less than two minutes from the time the person is found," Sawyer-Silva says.

AED is simple to use

The Miriam currently uses the Agilent Heartstream FR2, from Palo Alto, CA-based Agilent Technologies. "It's a new model we've had for the past six months," notes Sawyer-Silva. They are present throughout the hospital, on every medical surgical unit, in the clinic, and in the outpatient operating room in the building across the street.

"Every nurse knows how to use them; they're very simple to use — designed, in fact, for use by nonhealth care individuals," she says. "It does everything but walk the dog."

The device is applied to patients who meet three criteria: There is no pulse; they are not breathing; and they are otherwise completely unresponsive. "Once that's established, you push the 'on-off' button," Sawyer-Silva explains. "Then, the device will tell you to attach electrodes to the patient's bare chest; diagrams on the electrodes show you where to apply them. Literally, a 10-year-old could do it.

"Once that's done, the AED will tell you to plug the pads into the flashing yellow lights on the device. Then it will say, 'Analyzing heart rhythm; do not touch patient.' All this takes about 15 seconds. If it detects a rhythm it can't shock, it tells you to check the patient, who may now have a pulse," she continues.

"If not, you proceed with CPR. Or the machine will say 'shock advised, push orange button.' Immediately after the patient is shocked, the device reassesses, tells you to stand back, and will deliver up to three shocks," Sawyer-Silva adds.

All the shocks, she explains, are 150 jewels, rather than successively stronger. "Older devices did that, but this is more advanced technology," she observes.

All nurses who join Miriam are trained in the use of the AED as part of their orientation. In fact, all health care providers — physical and respiratory therapists, nuclear medicine technicians, and so forth, have to take health care provider CPR, which includes use of the AEDs. Anyone so trained can be a first responder.

There is no need for inservice follow-up, Sawyer-Silva says. "We did a retention study a few years ago, and nurses were able to use the device within three to six months without any additional training."

A 'real believer'

Sawyer-Silva says she is firmly convinced the AEDs have saved many lives that might otherwise have been lost.

"Each minute before arrest is recognized represents another 10% likelihood of not surviving," she notes. "So, if we're there in two minutes, that increases the likelihood of survival to 80%. I'm a real believer in this."

She estimates the AEDs are applied at The Miriam approximately 20 times a month.

The hospital's original AEDs were provided by Laerdal Company, a Swedish distributor that was later acquired by Agilent. "But we looked at all the brands that are available today — and there are many," she says.

"Our team chose the Heartstream FR2 because they thought it was the simplest to use and had features they wanted. The size was right. The directions were clear; all the features were superior. We believe that simplicity absolutely reduces time to application," Sawyer-Silva says. The less time you have to think about things, the better it is — especially in a stressful situation."

Need More Information?

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Telemedicine program focuses on Alzheimer's

Consortium links researchers with providers

A consortium that links Texas health care providers to a distinguished research facility is turning its attention to telemedicine as a means of improving access for Alzheimer's patients and making more efficient use of their physicians' time.

The James L. West Alzheimer's Center, a Fort Worth, TX, nonprofit facility that provides care to people with Alzheimer's disease and related disorders, has joined the Consortium on Alzheimer's Research and Education program at the University of North Texas (UNT) Health Science Center, also in Fort Worth.

The UNT Health Science Center comprises the Texas College of Osteopathic Medicine, the School of Public Health, and the Graduate School of Biomedical Sciences. Its six Institutes for Discovery conduct research on select health issues, including vision, aging, cancer, heart disease, physical medicine, and public health.

Their first research project involves a pilot program studying the feasibility of using telemedicine to evaluate and treat people with Alzheimer's disease. An interactive computer system has been installed between the two facilities to allow residents, staff, and physicians to talk and see one another in real time.

"There is not much of a history of telemedicine in the long-term environment," notes **Thomas Fairchild**, PhD, director of special projects on aging at UNT. "Since we are breaking new ground, we are trying to go slow."

The consortium has had a tough time getting off the ground, Fairchild notes, because of the challenges facing nursing homes.

"A couple of other facilities in the state have participated since we began about two years ago, but it's been a slow process, in part because of the struggles nursing homes are having with reimbursement and litigation. With 25% to 30% of the homes in or near bankruptcy, they're focusing more on survival than research," he explains.

Key Points

- Pilot program is designed to measure patients' response to telemedicine technology.
- Goals include improved patient access, more efficient use of physician time.
- Limited information is available on use of telemedicine in long-term care.

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In light of these challenges, UNT has been seeking to link its researchers and faculty with providers that can help them impact the evaluation, treatment, and prevention of Alzheimer's. "We're not trying to grab every facility out there, but those we think are consistent with our culture and will facilitate long-term progress," he notes.

These were some of the considerations that led UNT to James L. West, along with the proximity of the two facilities to each other. "But probably the single biggest factor that made us most comfortable was that our head of geriatrics has been their co-medical director, so we had confidence and trust built up with both patients and family members," he notes.

In the early stages

Essentially, the system is a PC-based network, Fairchild explains. "At our end, we are using a large-screen TV tied into a PC," he says. "Their end is similar, but they also have a large device with peripherals like osteoscopes and dermascopes, to conduct some of the assessments."

At James L. West, the equipment is set up in the same pod in which the residents live, in a room a little larger than a typical resident's room. It was important, Fairchild notes, that the location be one that was familiar to the patients.

After the equipment and the "T-1" line were installed, the nursing staff were trained in the use of the system. "We also needed to develop instruments to assess the technology," he adds.

"Obviously, you can't ask the patients, so we needed tools that could be used by third-party individuals, to determine if the technology is something the patients are comfortable with," he says.

The patients in the pilot program are in the midstages of Alzheimer's; they can't live independently, but they are not bed-bound. "Right now, we are only seeing two to four residents a week," says Fairchild.

"If things go well, our plan is to gradually increase the number of patients over the next 60 to 90 days to perhaps eight or 12 a week. On a quick-consult basis, that number may be much higher."

One of the major perceived advantages of this system is that the physician does not have to be in the same facility as the patient to conduct an assessment. "A big issue in our state is aggressive patient behavior," he notes.

"If we can do an assessment that's not face to face, that concern is eliminated. The nurse brings the patient into the room at their facility, and through our video and voice connection, [that patient] is assessed at our facility. This certainly can be a more effective use of the doctor's time, as well, and will hopefully increase access to care for the patients," Fairchild says.

The initial concern is how the patients relate to the technology, and so far, it has not been a problem, he reports.

"What we would love to do, if we can make it work in this environment, is try expand it to some other sites that are participating in our consortium," Fairchild concludes. ■

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