

Remotes keep tab on heart devices

Wireless tracking offers piece of mind

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Because of an inherited condition, MariAnne LaFleur's heart could stop beating at any time. Her life depends upon an implanted device designed to restore her heart's normal rhythm.

"If it failed, I'd die," said the Wheaton schoolteacher.

Once a day, the defibrillator in LaFleur's body wirelessly communicates information about her health--and its own--to her physician. Any indication of a short circuit or failing battery would cause LaFleur's caregivers to replace the defibrillator.

Facing a nightmare of recalls for defective defibrillators, pacemakers and other implantable monitors, the medical device industry is adding wireless capabilities to keep tabs on their products. The new technology provides piece of mind to patients and may reduce doctor visits and hospitalizations. Doctors expect before long, most implantable devices will come with wireless monitoring.

Indeed, networking medical information generally is a trend many believe will improve quality of care and raise efficiencies as an aging population makes increased demands on the health-care system.

Dr. Niraj Varma, who implanted LaFleur's defibrillator, said that news of possible defects in pacemakers or defibrillators can be unsettling.

"If you have 50,000 devices affected by a defect notification, that would mean that far fewer than 500 would actually fail, but you have 50,000 patients who are very concerned," said Varma, director of the electrophysiology lab at Loyola University Health System in Maywood.

"This gives us a mechanism to monitor the entire population," he said. "If a problem creeps up, we're alerted within 24 hours."

While a few devicemakers have added wireless monitoring to their top models, Varma said customer demand will likely cause the technology to spread to most implanted devices.

"It's definitely the wave of the future," said Fred Koury, spokesman for Biotronik Inc., the Oregon firm that produced the defibrillator implanted in LaFleur.

Dr. Kouski Krishnan, a cardiac electrophysiologist at Chicago's Rush University Medical Center, has implanted advanced defibrillators from Indianapolis-based Guidant Corp. that include remote monitoring.

"It's very easy for the patient," Krishnan said. "They have a little box near their bed plugged into a

phone line. Every morning at 2 a.m. while they sleep, the device downloads its information to the box and it sends the information we request. The patient doesn't have to do a thing."

Besides keeping track of the equipment, the system provides information about the patient's heart. Doctors also like to learn other things, such as any subtle weight gain that suggest a patient is retaining fluid, which is troubling for people with congestive heart failure.

While patients still come in for regular visits, Krishnan expects the monitoring may help them avoid 75 percent of the exams they'd otherwise have.

The expectation is the added costs of remote monitoring will be justified by money saved in avoiding unneeded doctor visits and hospitalizations, said Dave Knutson, a Guidant spokesman.

Networking medical information is growing quickly with many applications, said Steve Pazol, chief executive of nPhase LLC, a Chicago firm that specializes in machine-to-machine communications.

"We're doing a pilot project right now in the Netherlands for rehabilitation patients," said Pazol. "They wear a vest that monitors their movements. If they do things they shouldn't, it sends off that information."

Insurance companies looking to reduce costs are driving the trend, Pazol said.

"They want to reduce hospital stays and increase home care," he said. "If you can have one person monitoring 100 pieces of equipment spread all over instead of 10 in a concentrated area, you get a huge cost savings."

An example of such networking is under way in Joliet where Provena Health has specialists--called intensivists--who monitor patients in the intensive-care units of six Provena hospitals in Illinois.

Digital cameras and microphones enable these specialists to see and hear the patients as well as gain access to the equipment that monitors their heart rates, blood pressure and so on.

Intensive-care nurses are still on the scene to assist the patients, and the technology doesn't replace any personnel, said Dr. Jay Cowen, medical director for Provena's enhanced intensive-care unit.

"We have one physician and three nurses looking at 120 patients," Cowen said. "The technology helps us know when to intervene. We look for abnormalities and the technology pushes abnormalities to us. Studies have shown that if you have an intensivist monitoring an ICU, you can reduce mortality by 20 percent, and efficiency is improved.

"But there aren't enough doctors trained as intensivists. So this technology helps us meet that need."

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