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### Remote Monitoring Yields Healthier Patients

Nursing service uses wireless devices to monitor homebound patients and get data to doctors faster, reducing hospitalizations by more than 50%.

By Marianne Kolbasuk McGee, [InformationWeek](#)

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As more healthcare providers deploy electronic medical records, they're also looking to tie them into remote monitoring systems used by homebound, chronically ill patients. Now faster access to information generated via remote monitoring devices is reducing medical complications and hospitalizations, and improving quality of care, according to one in-home nursing service that's using those devices.

Bayada, which has 140 offices in 17 states and the United Kingdom, in the last year has rolled out wireless, Internet-connected remote monitoring devices from Idea Life to about 200 U.S. housebound patients with limited mobility and conditions such as chronic obstructive pulmonary disease, hypertension, and congestive heart failure. During that time, hospitalizations of those patients have been reduced by 54%, said Brian Farber, director of telehealth at Bayada.

The remote monitoring system alerts Bayada's nurses as soon as a medical problem crops up with a patient, letting the nurses respond fast. The system also sends alerts to patients' doctors, allowing them to adjust medication quickly or otherwise intervene.

Without remote monitoring, problems can go unnoticed for several days. Homebound patients with chronic diseases often don't notice or report subtle changes in their conditions to doctors, and those changes aren't discovered until a nurse makes a scheduled visit, which could be days after a problem first develops.

Also, the education that Bayada provides to remotely monitored patients helps, too. For example, patients with congestive heart failure and high blood pressure are made aware of salt intake can worsen their conditions.

Ideal Life provides Bluetooth-enabled monitoring devices, such as wireless body weight digital scales and blood pressure cuffs that let patients take readings daily. The data is sent in real time via the Internet, phone, or cell lines to nurses in Bayada's offices who monitor a dashboard that provides alerts on readings that fall outside acceptable levels specified by patients' doctors. Nurses can also receive alerts on their smartphones or via e-mail.

If a patient with congestive heart failure shows a gain of 3 pounds or more over 24 hours that could indicate a fluid retention, a dangerous condition for someone with that illness. The system sends an alert, and the nurse receiving it might schedule a home visit or notify the patient's physician so medication can be adjusted or other treatment prescribed.

"We work closely with the doctors," Farber said. Bayada's nurses are able to monitor patients whose doctors

lack resources and time to do the monitoring themselves, he said. Data can be incorporated into the e-medical record systems that patients' physicians use.

Reducing hospitalizations avoids thousands of dollars in costs. "It costs a minimum of about \$10,000 every time someone goes into the hospital," said Farber. And if a trip to the hospital includes a stop in the emergency room, costs go even higher.

One obstacle to widespread use of remote monitoring is that insurers and other healthcare payers generally don't reimburse providers like Bayada for remote monitoring services. However, that's slowly changing, said Jason Goldberg, president and founder of Ideal Life.

Ideal Life recently announced its medical devices were part of a state-funded project in North Carolina to remotely monitor 400 rural Medicaid patients who have heart failure or cardiovascular disease. Some private healthcare companies, including CareMore, a health-maintenance organization in California, are paying for the remote monitoring of patients with chronic diseases, Goldberg said. Increasingly, there are new incentives "to reward for preventative care, rather than just reactive models," Goldberg said.

Remote monitoring is helping Bayada more efficiently schedule and manage its nurses, sending them to visit patients with the most urgent needs, Farber said. So far, the company has invested about \$100,000 in the remote monitoring gear, he said. The range of uses for personal medical technologies is broader than just monitoring the chronically ill, said Chuck Parker, executive director at Continua Health Alliance, a non-profit group focused on developing interoperability guidelines and certification programs for personal health products. Personal health devices can help elderly people stay in their own homes. Sensors send alerts if a senior fails to get out of bed or falls. Other types of devices improve strength training of healthy people.

Devices certified by Continua cover several areas of "e-care," or "connected health," the terms preferred for describing remote healthcare, versus the older term, "telehealth," which connotes doctors conferring about patients through video conferencing, said Parker. E-care and connected health are both associated with "patient-centered" technology-assisted remote medicine aided, he said.

Parker, too, notes that providers need to be reimbursed for using these devices. "Reimbursements drive behavior," he said. The U.S. House of Representatives' healthcare reform bill includes provisions for reimbursing healthcare providers that participate e-care and connected health programs, he said. "The debate has taken off," he added.

The use of personal health devices will grow as more electronic health record systems incorporate and use that data. "Interfaces can be written for anything," said Bayada's Farber, including feeding the remote monitoring data into EHR systems. However many doctors don't want one more flood of information to monitor, he said.

EHRs will need to have intelligence built in to send alerts when something is off, said Parker. Personal health devices provide data, he said, and "EHRs are still coming to grips with that." Less than half of e-health record systems have the capability to work with personal health data, he said, but many have it on their road maps. And when providers start using that next generation of EHRs, remote monitoring will take off in a much bigger way.

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