



Salvatore Fischer of the North End entered data into an online device that will send the readings to his healthcare providers. (Jodi Hilton for the Boston Globe)

'Telehealth' systems slowly gaining Devices help curb visits to hospital

By Stephen Heuser, Globe Staff | July 26, 2006

For the past month, 82-year-old Salvatore Fischer has been getting a daily check-up in his North End apartment. But instead of a visiting nurse, his healthcare provider is a compact touch-screen monitor that would look right at home in the Jetsons' kitchen.

Around 7 a.m., Fischer kicks a digital scale into action, sending his weight wirelessly into the monitor propped on his counter. He clips his finger into a device that measures the amount of oxygen in his blood, and straps on a Velcro blood-pressure cuff. He mashes a thick fingertip into the word "send" on the monitor's liquid-crystal touch screen, and the information travels through his phone line to a computer readout in Rockland.

"The way I understand it, this machine takes the place of a nurse," said Fischer, who lives on his own despite congestive heart failure, obstructed lungs, and diabetes. "If I gain five pounds, say from one day to the next, I'm in trouble. I can't cheat because they know what's normal -- they'd have a nurse here within a half-hour."

For more than a decade, medical-device makers have trumpeted so-called "telehealth" hookups as a revolution in the costly American medical system. The idea is that by tracking vital signs remotely, doctors and nurses can keep patients comfortably at home while reserving their attention for the most serious cases. They can also save the expense and disruption of hospital visits by catching signs of trouble before a patient needs an ambulance.

Now an increasing number of companies have begun to compete for the home-monitor market. But hobbled by confusing technology and a Byzantine health insurance system that pays for nurses to check on patients in person but not from a distance, the idea has been slow to take off. Of the tens of millions of Americans with chronic conditions such as Fischer's, only a small fraction have a home monitor.

"Just because you have a nifty way of doing something doesn't mean that you can create a market," said Dr. Joseph Kvedar, director of telemedicine for the Partners HealthCare System in Boston.

The home-health division of Partners, which sends nurses to visit patients who need regular checkups, is among the small but growing group of agencies nationwide that have spent money to install remote-monitoring systems. After pilot programs suggested that patients with weakened hearts could benefit from home monitors, Partners Home Care recently

began buying and installing \$2,500 telehealth systems for 50 patients, including Fischer. The agency says 250 to 300 of its patients could ultimately benefit from home monitors, and hopes to have that number in place by the end of next year.

“We used to find that patients with congestive heart failure, even if we were visiting three times a week, we would miss a change in their weight, which is one of the first indicators their heart is failing,” said Judy Flynn, the agency’s chief clinical officer. “By the time we’d get there to check it out, they’d need to be admitted to the hospital.”

In perhaps the largest national rollout of such systems, the US Department of Veterans Affairs has spent \$20 million to install some 15,000 monitors across the country, and expects to have 50,000 in place by 2009.

The VA has found the systems cut patient care costs by about one-third. Each trained nurse watches daily vital signs of about 150 patients, some of whom also have video monitors for personal consultations. Abnormal results are red-flagged so a patient can receive a phone call or a personal visit.

“This may seem a little bit fanciful, but it’s a little bit like an air-traffic control system for patients,” said Dr. Adam Darkins, who runs the VA’s program.

Darkins also said patients don’t seem to mind the drop-off in face-to-face visits.

“The satisfaction levels are over 90 percent,” he said. “It’s very intuitive, and they feel they’re in regular contact.”

Encouraged by such feedback, [Honeywell International Inc.](#) in 2004 bought HomMed, a leading producer of household monitors. Earlier this year, giant [Philips Electronics](#) NV launched its own system, Motiva. Another company, Viterion TeleHealthcare LLC, is a joint venture of Panasonic and Bayer. They compete with a broad constellation of private firms.

Still, industry observers say fewer than 200,000 people -- and maybe less than half that number -- have monitors. Philips’s Motiva, which launched in May and is based in Massachusetts, has not yet sold any units. Even veteran players in the industry, such as California-based Health Hero Network Inc., have fewer than 30,000 units in people’s homes.

One reason is the unresolved question of who should pay. Remote monitors, combined with nurse coverage, are too expensive for most patients to buy out-of-pocket, so they are usually sold to home health agencies or disease-management companies paid to handle chronically ill patients. Since the equipment isn’t considered a therapeutic expenditure, and because no large-scale studies have proved cost-effectiveness, Medicare and most private insurers won’t pay for the equipment, leaving cash-strapped healthcare agencies to foot the bill.

“We see the patients; we know the monitoring would work. But if we go out and buy it and we do a great job, the benefits really go to the insurance company,” said Marcia Reissig, a nurse and chief executive of Partners Home Care.

Partners and others say buying monitors sometimes does make sense for an agency, but only in a small subset of patients. Medicare pays a flat fee to care for patients; Reissig said a typical nurse visit costs about \$78, and a monitor costs up to \$200 monthly to buy and operate. If a monitor can cut two or three monthly nurse visits, it helps keep the cost of care below what Medicare pays.

That type of analysis limits the spread of the devices, however, because it doesn’t account for savings from reduced hospitalizations, which don’t benefit the agency that buys the equipment.

“There are a number of people who we think could benefit” from monitoring, “but there isn’t that return,” said Reissig, who scrambles for grants and donations to get more monitors to patients.

Another obstacle to widespread monitoring is the complexity of the devices. Many are basic vital-sign monitors like those in Fischer’s apartment, which can be customized.

For someone with diabetes, a glucose meter can keep tabs on blood sugar levels; for someone with asthma, a device called a spirometer checks lung strength. Some machines even track whether a patient opens pill bottles at the proper times daily.

But the diversity of offerings has created its own problems. Patients who need home care are unlikely to be able to navigate a variety of systems and interfaces, and most companies sell proprietary devices that don’t communicate with competitors’ equipment. That makes caregivers hesitant to commit money to a single system, said Reissig.

When Partners decided to buy systems for patients like Fischer, she said, they winnowed it down to six vendors and tried out three. One system, based on cellphones, had screens too small for elderly patients to read. Another was so heavy that staffers couldn't lift it into their cars. Some gave flagrantly inaccurate readings after being installed.

Fischer said his monitor, made by Virginia-based ViTel Net , has been reliable, and he operates it with ease, not hesitating when the screen dotted with cheerful-looking icons flashes an obscure message like ``Sending basket to host authsmtp.juno.com."

But then, as a World War II veteran who installed electronics at the Charlestown Naval Shipyard, Fischer may not be a typical customer.

``I installed the original computers," he said, looking across a neat lineup of prescription pill bottles at the device on his counter. ``You wouldn't believe how big they were."

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