The Colorado Health Foundation™



Remote & Control

Using Tech to Give Patients a Bigger Role in Health

A funny thing happened on the way to expanding telehealth in northern Colorado.

Seems that one of the patients being monitored at home after congestive heart failure suddenly showed up in the statistics as 8 pounds heavier in one day. This puzzled and alarmed nurses at the Rehabilitation & Visiting Nurse Association for Weld and Larimer counties.

After a heart failure, rapid weight gain could mean malfunctioning kidneys that aren't clearing fluids properly. So a nurse called. The patient's response surprised the nurse – the patient hadn't yet weighed in on the remotely monitored scale that day.

They chatted some more and then realized that the patient's sister had stepped on the scale during a visit and also tried the blood pressure cuff. Mystery solved, marking another successful day in the promise of telehealth to help patients stay healthier and happier in their homes.

"It's good to know you're really watching. Thanks a million," the patient told the nurse.

More importantly for the future of the trend, the northern Colorado nurses' group noticed remarkable results across a broad range of patients using their remote monitoring equipment, purchased in a 2013 grant from the Colorado Health Foundation. Of 28 patients enrolled in the home-monitoring program with congestive heart failure, hypertension, diabetes, chronic obstructive pulmonary disease and other chronic illnesses, none was admitted to the hospital during the next year for their monitored condition.

Though comorbidities vary across home-nursing populations, national averages show that about 29 percent of home health agency clients are admitted to the hospital in a given year. The difference made by the patient-centered aims of home monitoring is clear to Lori Follett, executive director of the northern nurses that have since merged with the Colorado Visiting Nurse Association. Follett hopes to update the telehealth equipment and expand the program.

“It truly does help prevent readmissions. Our patients were really positive about it. They felt they were getting more attention to their health and had high satisfaction. That gave them peace of mind,” Follett said.

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> Lori Follett, executive director, Rehabilitation and Visiting Nurse Association for Weld and Larimer Counties

Carla Cherry, 64, of Greeley, credits her home monitor with helping to save her life. She was living at home with congestive heart failure, COPD and asthma. The daily weight checks told her nurse one day she was massively retaining fluids, a sign her heart was not pumping well, and she wound up first in the emergency room and then the ICU. She ended up shedding 20 pounds of extra fluids.

She’s no longer using the same device, but has a machine checking in with a United Healthcare nurse for daily weight monitoring. She also answers a few routine questions, and if something’s wrong, the nurse calls. “It’s my

independence," Cherry says of the monitoring devices. "And if I can get the extra help, then I get to stay home. It's where I belong."

In a year where video medical appointments from a smartphone are quickly becoming commonplace in the consumer health world, northern Colorado's telehealth concept was modest. But it was targeted carefully at a group of patients whose quality of life and costs could be greatly impacted by some simple technology.

The nursing association provides home care services that range from skilled nursing care to rehabilitation after injury or illness, to nonmedical essential services, such as grocery shopping, errands, housekeeping or assistance to shower. "Keeping people in the least restrictive environment possible," as Follett put it.

In 2013, they had about 90 employees and a daily census of 300 skilled nursing patients and 300 more nonmedical clients. "We really wanted to focus on reducing readmissions to hospitals and unnecessary ER visits," Follett said, in patients that had been seriously ill. "There are times as an agency we are, and if we can visit people twice a week but do telehealth the other days of the week, that gives us a much better picture of that person."

The grant was for boxy telehealth units and communications software that link to a regular phone line. (Newer versions link through cell technology as more homeowners give up their land lines.) The box is linked to a blood pressure cuff, a pulse-oxygen sensor, a weight scale and in some cases, a thermometer to track fevers that might be linked to infection. The unit could also be programmed to ask hundreds of questions, but the nurses kept questions to a simple few: Do you have shortness of breath? Can you rate your pain on a scale? Are your ankles swollen?



Monitoring equipment like this pulse oximeter can help keep patients in their homes longer.

A screen could also be programmed with modules adapted to the patient's needs, such as diet education and advice for diabetic or heart patients, or wound care self-checks for open heart surgery patients.

The box could be programmed to give a voice prompt at a preset time every day, reminding the patient to connect and measure each item. All the information was transmitted to the nursing association offices for the case worker to monitor. If there were any troubling signs before the next in-person visit, the nurse could contact the patient and the patient's primary care provider.

Providing the bridge between the primary care provider and the patient was one benefit of the technology, Follett said. But it also became an unforeseen motivator of the patients themselves. "Times are changing," Follett said. "It used to be that whatever the doctor said should happen would happen. Now we see patients doing their own research, wanting to be more proactive. This is a way for them to be more proactive. Telehealth makes them feel there's something they can do."

During the year the grant ran, though there were no readmissions for the original conditions, monitoring did lead to 49 interventions with patients. Sometimes that just meant a high blood pressure reading and a call to the physician to check in.

Without the monitors, a patient with high blood pressure from mere anxiety might go to the ER for fear of a heart problem, Follett said. “The 49 interventions avoided much more potentially serious situations,” she said.

In its next telehealth effort, the northern Colorado nursing group will link with a local safety net clinic’s patients for home monitoring and interaction via sleek tablet technology.

“Home care is a perfect marriage for that,” Follett said.

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