

Pilot project aims to help heart-failure patients self-manage

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Earl Shook enrolled in a Stanford Health Care pilot project that monitors heart-failure patients at home. Credit: Norbert von der Groeben

Earl Shook knew he was in trouble. He couldn't walk five feet without losing his breath and stopping to rest. He couldn't carry his dog's 35-pound bag of food without dropping it to the floor. And he couldn't cook for the Fifty Plus Club at the Menlo Park Presbyterian Church, where he worked.

For weeks, Shook, 74, had been experiencing shortness of breath, which his physician treated as pneumonia. As his condition worsened, he returned to the doctor, but needed a wheelchair to get from his car to her office. She knew immediately there was something else going on, and sent him to a [cardiologist](#) for a consultation. Shook was diagnosed with congestive [heart failure](#) with [atrial fibrillation](#), and was told that he should be hospitalized. Shook resisted, convincing his doctor to let him cook for the Fifty Plus Club that Friday night. But when he could barely stand without holding onto a table, he and everyone around him knew he needed help.

He was transported via ambulance to Stanford Hospital from his cardiologist's office the following Monday, and spent a week in the hospital.

At discharge, Shook became one of the first people to enroll in a pilot project that monitors heart-failure patients at home. Launched earlier this year, the project is a joint effort of Stanford Health Care's heart failure team and Aging Adult Services Program. Nursing & Rehab at Home, an SHC community partner, and Philips Healthcare, a corporate partner, are collaborating on the project. The goal is to teach these at-risk patients self-management of their chronic condition, and keep them from being admitted to the hospital.

"There is abundant evidence in the literature that suggests home monitoring can improve patient outcomes," said Rita Ghatak, PhD, director of Aging Adult Services. "It can improve survival, days out of

the hospital, quality of life, and it provides an extra measure of psychosocial support."

According to project leader Dipanjan Banerjee, MD, clinical assistant professor of cardiovascular medicine, Stanford has employed a number of interventions to reduce heart-failure readmissions over the past three years, but they have all been inpatient, hospital-based interventions, such as scheduling follow-up appointments prior to discharge, making discharge phone calls, educating patients about managing their condition at home, and reconciling medications before discharge.

"All of these are great interventions, but they don't speak to what happens to the patient at home," said Banerjee, who is also director of SHC's Mechanical Circulatory Support Program. "There's a big opportunity to use home monitoring or home-based approaches to improve patient care."

Bringing care home

A day after arriving home, Shook received a digital scale, a blood pressure cuff, a pulse oximeter and a hub station and was trained on using the devices by the Nursing & Rehab at Home staff. For 30 days, Shook weighed himself daily and took his blood pressure and oxygen saturation. His readings were automatically transmitted to a central monitoring portal. If he skipped a day, the home health agency would call to remind him. If his vital signs were out of the normal range, the agency would contact the Stanford nurses to intervene.

"A key focus in heart failure management is prompt symptom recognition and knowing what action to take when early signs of decompensation emerge," said Christine Thompson, RN, clinical nurse specialist for the heart failure team, who helped develop the pilot project. "Daily monitoring of vital signs, in addition to assessment of

subjective symptoms, is a tool that may particularly benefit some of our high-risk patients."

As part of the project, patients also receive a home visit by one of four Aging Adult Services nurses—Pauline Marchon, RN; Terese McManis, RN; Candace Mindigo, RN; or Lourina Co, RN. In addition to ensuring that patients are using the monitoring equipment correctly, the home visit allows the nurses to reinforce messages about diet, exercise and medications. On more than one occasion, these visits uncovered a potential health problem that could be addressed immediately.

When McManis conducted a home visit with Shook, she noticed something was awry. His blood pressure readings were abnormal, she said, and his diastolic number, at 110, was very high. The nurse was concerned enough to call Thompson. "We got him in to see his cardiologist the next day," said McManis. His medications were adjusted immediately, bringing his blood pressure back into a normal range within two days.

Heart failure is a complex syndrome requiring lifelong adherence to medications and certain dietary criteria, as well as daily self-assessment of symptoms, Ghatak said.

"Heart failure doesn't end when patients leave the hospital," said Angela Bingham, RN, nurse coordinator for the heart failure team. "A big part of managing heart failure is teaching self-management for patients with chronic disease. The home monitoring pilot really supports patients doing that."

Providing peace of mind

The [pilot project](#) plans to enroll 30 patients with heart failure from the inpatient and clinic settings, and provide them with home monitoring

equipment for 30 days free of charge. To date, it has enrolled 22 patients. Not every heart failure patient is a candidate, Bingham said. Patients must live within Santa Clara and San Mateo counties, and be well enough to conduct the self-monitoring or have someone in the home available to help them. At this time, patients must also speak English or have someone who can interpret for them in their home. At the end of the 30-day monitoring period, a nurse conducts a phone survey to evaluate the program's impact on the patient's health and quality of life.

For Shook, being sent home after a week in the hospital was unnerving. "When you're cared for at the hospital by good nurses and doctors, and you're sent out from the hospital, there's a void," he said. The home monitoring was reassuring, he added. "It let me know there was somebody there still caring for me."

Shook has completed the 30 days of being monitored, but still chooses to monitor himself daily with equipment he acquired on his own. A lifelong chef who cooked for the airlines at San Francisco International Airport for much of his career, Shook has had to learn a "whole new way to cook," he said, cutting back dramatically on salt to help manage his high [blood pressure](#), and using herbs, lemon and mustard to season his food.

"Seeing those numbers every day helped me change my diet, and I do a little more walking with my dog," he said. "It gave me a sense of discipline. Now I make sure to take all my pills. Before I would skip them sometimes."

Provided by Stanford University Medical Center

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