

The mobile care team loading the equipment for a visit to a patient.



Point-of-Care Analyzer Makes Home-based Care Possible

Home is where the heart is. Now, previous frequent visitors to the emergency department can have medical care at home, assisted by a professional team. This mobile care team brings benefits to patients, relatives, and physicians, as well as to hospitals, in the Swedish county of Ängelholm.

Text: Per Simonsson

The mobile care team unloads their kit outside the home of an elderly patient, deep in the Swedish countryside. I help them with one of four bags, the one with the laboratory equipment. We're about to make one of many regular visits to this particular patient, an older lady. She smiles and invites us into her living room. After discussing her recent symptoms with the doctor, the nurse takes a blood sample and runs it through the point-of-care analyzer. We sit around the coffee table, waiting for the results. The patient takes several drugs for heart problems, and she's had ongoing issues with her electrolytes. It's time to check whether the latest changes in her medication have had a positive effect. Soon, the printer produces a slip of paper. The doctor examines the printout of her electrolytes and creatinine levels. He nods. "Yes, the results look good," he tells the patient. They both nod and smile. This lady is one of 36 patients who receive regular care

from the local home care team in Ängelholm, Sweden. She used to be a frequent visitor to the hospital. Now, she can stay at home, thanks to the advanced medical care provided by the professional team. She hasn't had to go to the hospital by ambulance in the middle of the night for a long time. And so the patient is happy – as is the team and staff at the emergency department.

A few years ago, the patient often had to call an ambulance and spend days in hospital. She was frequently readmitted. Her treatment was not structured. Acute symptoms were taken care of but not her general medical situation. One day, her primary care physician referred her to the mobile care team. She was a patient in need of their advanced, yet home-based treatment. A plan for her care was established – with the patient's involvement – and different possible actions were defined. What should happen in various situations? Who should be called, and when? This approach gave the patient and her medical team – both general and specialized – a new tool, customized to the patient's needs and based on solutions available to today's healthcare providers.

Point-of-care analyzer – a key tool for mobile care

"It's indispensable," emphasizes Marie Bladh as we discuss point-of-care in advanced home care. "This is highly professional care of patients normally treated at the hospital. And so our doctors need the right tools to make the correct decisions. On the spot, in the patient's home. There's no room for guesswork."

Marie Bladh is head of the home care team in Ängelholm, Sweden. She sits at the hub of a complex web of healthcare providers: specialist hospital care, general practice, and community care. Creating a patient-centered program in this



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Marie Bladh, head of the home care team in the Ängelholm Hospital, Sweden

vast network calls for new ideas and novel ways of working. Rejecting siloed thinking has been essential for the implementation and success of the program. “We have to work in a coordinated manner. And communicate with all players,” says Marie Bladh. Today, the project is an established component in the care of chronically ill patients, those for whom there is no cure and those who require regular interventions to keep quality of life as high as possible. Life should be lived in comfort, at home, where the patient wants to

be. “We provide care to two main groups: older patients with acute conditions and those who need regular advanced medical treatment. Now, this can happen at the patient’s home, away from over-crowded emergency departments,” says Bladh. In the few cases when hospital care is essential, patients can be admitted directly to the ward without going through the emergency department. “The results are appreciated by patients, relatives, and doctors, as well as benefitting hospitals. This is something new. And you have to remember that these are our very seriously ill patients, many of them in their last year of life. A year that they now can spend at home, not in hospital,” says Bladh.

Daily 6–7 patient visits

Two mobile teams with one nurse and one doctor each visit 6–7 patients every day. In the beginning, visits may be weekly, but as the care plan is implemented the visits become less frequent. By then, both the patients and the doctors know what to do. The treatment plan has been optimized.

Each team is equipped with a multitude of tools for diagnosis and treatment in just four bags. Apart from the blood gas analyzer and a C-reactive protein (CRP) testing instrument, they carry a bladder scanner to monitor urine retention. They can also administer blood transfusions and intravenous antibiotics.

Future perspectives

When asked about the future, Bladh’s response is emphatic: “It’s all about IT. We want all results and all documentation from all sources to come together in one IT system. Now, the results have to be manually transferred. And more importantly, we have three different IT systems: one for the hospital, one for general practice, and one for community care. And they don’t communicate with each other.” Given the clinical success of the project, it’s obvious that the challenge is in aligning computer systems. The multidisciplinary team is in place with the high-end tools required for advanced care, but the IT tools are still lagging behind. They must be seamlessly interconnected to live up to the needs of a new way of providing healthcare.

Inspiring colleagues

The Ängelholm team is also inspiring others. A similar system is to be implemented throughout the whole of southern Sweden. Other regions are moving in the same direction. Internationally, this is a hot topic. There’s no turning back: Home care is essential. “Otherwise, we’ll have to build more hospitals,” says Bladh, adding with a smile: “Or install bunk beds, with one patient on top of the other!” As my time with Marie Bladh comes to an end, the door opens. A team dressed in red jackets is just returning from their mission. The cold winter air fills the corridor as they unload their bags. I ask Johan Anderberg, MD, for a brief interview. He declines politely – there’s a lot of work to be done. But he does hold up a mobile handset that has just done its duty out in the field.¹ I think back to my own visit to the elderly patient, how we sat relaxed together in her living room, agreeing that her life ought to be as good as possible. Now, I saw much more than just a handheld medical device; I saw the future of laboratory medicine. A lab test right there, on a coffee table.

Pioneers in home-based healthcare

The mobile care team in Ängelholm are pioneers in this new field of medicine. This is not just a matter of traditional home visits. This is a multi-professional and structured approach to treating some of the most sick and frail patients, the elderly and those with multiple serious conditions, with a multitude of pharmacological treatments. You need to have at least four serious conditions and six drugs to be admitted to their care. The clinical outcomes are excellent. The emergency admission rate for the patients under the team’s care has gone down by more than 90 percent. ●



Bridge to the Ängelholm Hospital in Sweden.



Johan Anderberg holds up a mobile handset.¹

Reference

Read a recent expert discussion on this topic that explores the potential and the pitfalls in the journal Clinical Chemistry (Parker ML et al. There’s no place like home: Exploring home-based, acute-level healthcare. Clin Chem 2018;64: 1136-1142.)

¹Product availability may vary from country to country and is subject to varying regulatory requirements.

The statements by Siemens Healthineers customers described herein are based on results that were achieved in the customer’s unique setting. Since there is no “typical” hospital and many variables exist (e.g., hospital size, case mix, level of IT adoption) there can be no guarantee that other customers will achieve the same results.