



## Slingeland Hospital

# Co-creating a real-time monitoring solution Ensuring better care and more informed medical decisions

In the Sensing Clinic program, Fujitsu and Slingeland Hospital co-created an innovative sensor solution to capture the health status of patients 24/7. It allows nurses and doctors to remotely monitor conditions, reducing the need for bedside visits, allowing patients' treatment to be tailored to their needs, and thus improving the patient experience.

“With the Sensing Clinic program, we can monitor our patients 24/7, intervene sooner and use our bed capacity and personnel better. That is good news for the patients and for the hospital.”

*Chrit van Ewijk,  
CEO,  
Slingeland Hospital*

### A New Sensing Clinic Study- an innovative approach to achieve a higher quality of care

In 2016 a new 'Sensing Clinic' study started at Slingeland Hospital, based in Doetinchem, the Netherlands. "When it comes to innovation, we discovered that we often notice too late that the patient's condition is worsening so we are looking for providers who can bring innovation and offer something extra in that domain," explains Chrit van Ewijk, CEO, Slingeland Hospital. The hospital wanted to understand how best to adopt sensing technology to support its medical staff with real-time information on patients' vital signs. The technology should provide medical staff with information about patients' performance, supporting

informed medical decisions and targeting a higher quality of care.

The Sensing Clinic study is the first trial of research outcomes from Fujitsu's healthcare research project KIDUKU, a three-year collaboration between Fujitsu Laboratories and Fujitsu Ireland to understand how best to integrate sensing solutions into clinical and community based settings.

"As a hospital, we don't have specific knowledge on sensors, but Fujitsu has. We set up the requirements and Fujitsu provided us with the resources to measure what we need," says Chrit van Ewijk.

### Co-creation of an innovative technological solution to improve patient's care

Starting in September 2016, Phase 1 of the Sensing Clinic initiative deployed innovative sensor technology, co-created between Slingeland Hospital and Fujitsu. The sensors capture patient data in real time, allowing nurses to remotely monitor conditions and reducing the need for bedside visits, thus improving the patient experience. This phase ran until April 2017 with plans to make the sensors available to further departments within Slingeland Hospital thereafter. Phase 2 commenced in July 2017 focusing on monitoring vital signs of further patient groups within other departments, as well as the use of motion sensors to monitor and inform care plans for stroke patients.

"What we are doing is new. We used to take observations from the patient a number of times a day and, in between, we had to use our clinical judgement. We would make rounds to see how the patient was," says Chrit van Ewijk.

A rich set of sensors now provides medical staff with real-time information on patients' vital signs using a combination of ambient and wearable sensors. Chrit van Ewijk explains how the sensors are easy to put in place, "We stick a plaster, a so-called Health Patch, on the chest. We attach a wireless blood pressure monitor to the patient's arm and we place a sensor under the bed as well.

The patient has more freedom of movement than before. We receive continuous data from patients which is stored anonymously online and can be retrieved immediately. Now we can monitor the patient wherever he or she is. Thanks to Fujitsu's Smart Sensing technology, we can now continuously monitor certain parameters to keep an eye on the patient. If they worsen, we can intervene a lot sooner and prevent their condition from getting worse."

To present information back to clinicians Fujitsu collaborates with VitalinQ, a Dutch company which specializes in health and wellbeing solutions. All data collected is fed back to the medical staff through VitalinQ's Lifestyle Guidance application. In the same way, the data collected can be exchanged with Slingeland Hospital's electrochromic display (ECD) and Hospital Information Systems (HIS) in the near future.

"We don't try to change protocols, but we want to help nursing staff to perform their tasks in the knowledge that they are sometimes understaffed," adds Chrit van Ewijk.

### More data leads to shift towards prevention deterioration and shortened treatment

The Sensing Clinic program will be a huge improvement for Slingeland Hospital. Not only will medical staff members be able to continuously monitor patients' vital signs such as ECG, blood pressure, heart and respiratory rates and sleep patterns, but also the program saves time that would otherwise be needed to perform manual measurements. This leaves more time to spend on patient care.

The real-time availability of patients' statuses on mobile devices like smartphones and tablets will make it possible for healthcare professionals to make informed decisions on treatment. Finally, perhaps the most important benefit of the program is the early detection of deterioration, preventing further damage, which translates to a better quality of care.

Chrit van Ewijk concludes, "We receive a lot more data about the patient much earlier so medical interventions can shift more towards preventing deterioration and towards accelerating and shortening the treatment. Looking at what this program does for our hospital, we will be able to raise nursing staff satisfaction. After all, what they really want is to focus more on their care for patients. Sensor technology enables them to take a step back and focus on



the data to make the best decisions for the patients."

#### Customer Profile

### Slingeland Hospital

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