

SBRI HEALTHCARE CASE STUDY

Isansys Lifecare Limited



INNOVATION

The Patient Status Engine (PSE)
Wireless Patient Monitoring Technology

COMPETITION

Patient Safety and Patient Monitoring

FURTHER INFORMATION

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CLINICAL NEED

Vital signs observation is a very complex area and a key part of the 'chain of prevention' to avoid deterioration, cardiac arrest and death. Except for those staying in intensive care wards however, not all patients are adequately monitored.

Even high dependency patients may fail to receive the necessary intensive monitoring due to a range of factors including lack of suitable beds and nursing resource. Patients in general wards are monitored at long (up to 8 hourly) intervals during which time the patient's status could change significantly. Such infrequent monitoring makes it difficult to identify trends which act as early indicators of a potential decline in the patient's condition.

SUMMARY OF INNOVATION

Isansys Lifecare has developed an innovative, low cost and wireless patient monitoring system. The Patient Status Engine (PSE) integrates a range of advanced medically certified and wearable vital sign sensors, with secure networking technologies and predictive analytics. Any (and every) patient can now be monitored continuously in hospital or at home.

The Patient Status Engine integrates clinical wearable sensors and predictive analytics into a new kind of product that is unique in being at once a certified medical device and a complete end-to-end wireless platform. Automatically collecting and analysing patients' vital sign data in real time, the technology is impacting healthcare globally by enabling doctors and nurses to see, at a glance, if a person's health is deteriorating. This means healthcare teams can effectively see into the future, hours or even days before an event occurs, allowing them to take early preventative action and nudge the patient back onto the road to recovery.

The PSE addresses critical patient safety issues – reducing the number of avoidable deaths and adverse events in hospital, reducing length of stay and enabling new pathways to keep patients out of hospital in the first place. New applications and care pathways are also being created through data-driven physiological biomarkers, for example, the early detection of sepsis in chemotherapy patients at home.

PATIENT PERSPECTIVE

The PSE provides the means for automatic vital sign data capture and delivers real time Early Warning Scores (EWS) for any, or all, patients cost effectively and at large scale. This means clinicians are able to spot signs of deterioration (or improvement) more quickly and are able to use this information to support intervention before patients suffer adverse events.

“We’re using wearable wireless technology to identify and predict deterioration in children earlier, so that we can avoid life-threatening events. The ability to track and identify deterioration towards a cardiac arrest will give doctors the chance to save the patient’s life.”

Dr Heather Duncan, lead for the RAPID project at the Birmingham Children’s Hospital, where the PSE has been installed.

“The PSE has allowed me to cuddle her, lift her and care for her in the way I want to. It’s given me peace of mind and a sense of normality.”

Mother of newborn daughter being monitored with the PSE at Birmingham Children’s Hospital.

COMPANY OVERVIEW

Isansys Lifecare is a leading digital healthcare company which has developed an innovative patient monitoring platform, enabling early detection of deterioration in patients. The business is focused on driving disruptive technologies into hospitals and healthcare organisations globally, providing health professionals with the vital tools required to improve patient care and increase clinical performance, ensuring economic value and enhancing patient safety.

Isansys founder Keith Errey, who describes himself as a digital health evangelist, launched the business in 2010 with clinical trial specialist Rebecca Weir. The company was awarded £1.2 million from SBRI Healthcare to further develop the product and is now working with leading clinicians and hospitals whose ground-breaking work will bring enormous benefits to millions of patients and their care teams while addressing the spiralling costs of care.

“The SBRI Healthcare funding has enabled us to rapidly re-engineer the PSE for scalability, lower cost manufacturing and expanded functionality. With the support we have received for early stage clinical deployments, we now have a proven world-leading medical product that is being used in hospitals in Norway, India, Germany, the USA, as well as the NHS, placing Isansys in a leading position in a rapidly developing multi-billion dollar global market.”

Keith Errey, Isansys CEO

NHS IMPACT

The Isansys technology platform addresses critical patient safety issues that cost the NHS an estimated £2.5 billion annually. By significantly improving patient monitoring and providing more robust and timely early warning indicators, the PSE enables healthcare providers to reduce the number of in-hospital avoidable deaths and adverse events, and to discharge patients earlier and with greater confidence. By enabling critical care to be extended out of the hospital into the home, the PSE also supports new pathways to keep patients at home.

Based on two deployments with 1800 patients at Birmingham Children’s Hospital and in Oxford – Hospital at Home, cost-savings are estimated due to a reduction in the average length of stay, prevention of adverse events and a reduction in the time taken to monitor a patient’s vital signs.

Economic analysis estimates that at a cost of £25 per patient for the technology, a reduction in the length of stay of patients leads to cost-savings of £155. The reduction in the number of nurse minutes saved is estimated to reduce costs by £63.70. A total saving of £218.70 per patient. Consequently, the overall economic impact of Isansys as a platform for an average CCG population of 200,000 could lead to savings of up to £43 million.

(*PA Consulting 2018 Report ‘A review of the benefits of the SBRI Healthcare programme’)

