

Isansys Lifecare Limited

INNOVATION

The Patient Status Engine (PSE)
Wireless Patient Monitoring Technology

COMPETITION

Patient Safety and Patient Monitoring

T E M T
e www.isansys.com
Te 44 ()1235 436225 Email info@isansys.com



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.



TheAHSNNetwork



PATIENT PERSPECTIVE

Older people need practical support to effectively manage their stomas. Even people who have had a stoma for many years and managed it effectively may encounter problems as they grow older as a result of physical and/or cognitive impairment (and dementia in particular).

Becoming an ostomy patient is an incredibly tough state to adjust to. The number of patients having either permanent or temporary stomas is rising at 10% per annum.

The stoma bags that collect liquid digestive waste are made from hypoallergenic material to reduce the chances of skin irritation and they have filters to stop the release of unpleasant odors.

They are drained through an opening in the bottom and can be concealed under everyday clothes. Currently patients with stoma bags have no warning when their bags are filling. This results in overflows and spills, particularly at night. The incidents are distressing, embarrassing and reduce their quality of life and lead to additional health conditions including infections.

The ostom-I Alert Sensor helps to improve the quality of life for patients who need to use stoma bags, by helping them to take control of their care, alerting them to when their ostomy pouch needs to be emptied.

COMPANY OVERVIEW

The founder of 11 Health and Technologies, Michael Seres, understands from personal experience the difficulties patients with stoma bags face on a daily basis.

He was diagnosed with the incurable bowel condition Crohn's Disease aged 12 and, after more than 20 operations and intestinal failure, he became the 11th person in the UK to undergo a small bowel transplant: ***"I had a stoma bag fitted and soon realised how easily it could leak and spill and how doctors needed information on how the bag was being filled and when,"*** Seres explains.

"During my initial research I spoke to lots of people around the world who told me there was no solution available and that they just had to get used to wearing the bag."

Undeterred, he bought a sensor hacker, taped it to his own bag and programmed it to make a sound when the bag was full.

From this idea Seres generated some seed funding for a new business and in 2016 received his phase 1 award from SBRI Healthcare. In total SBRI Healthcare has backed the innovation with £894,500 worth of funding.

11 Health and Technologies is now actively engaged in phase two of its sensor development, with clinical trials taking place at a number of UK hospitals. The device is also available for sale in the US, where around 1,000 patients have already benefitted from this practical, simple and patient-centered solution.

NHS IMPACT

Leakage from stoma bags is a particularly expensive and common problem for stomates, with 85% of patients reporting leakage at some point. Consequently, management of stomas results in a considerable healthcare cost burden. In 2014-15, expenditure of the supply of colostomy bags and associated accessories amounted to a total of £283 million; including dispensing fees of around 18%, the total cost annually is estimated at over £3,000 per patient.

Beyond leakage, stomas can also result in wider health problems including infection, dehydration and renal failure – which makes monitoring the nature and quantity of output vital. A US-based study revealed around one in five (17%) of patients were readmitted to hospital due to dehydration or renal failure within 30 days of an ileostomy being created. Patients over the age of 55 were at the highest risk of renal failure, with the costs of these readmissions impacting the healthcare burden.

In a pilot study, the impact upon resource utilisation, with and without the ostom-I Alert Sensor was assessed in 80 experienced stoma patients (> 1 year post surgery). With the device, the number of prescription items, such as stoma bags and loperamide dispensed decreased. Patients also made fewer health care professional contacts such as telephone and face-to-face contacts, counselling and hospital admissions. This generated savings of around £500 per patient per year. As a result, the ostom-I Alert has potential to lead to cost savings of up to £60 million a year, through a reduction in further health care contacts and ostomy bags.