

Mental health trust cuts falls and saves time with patient monitoring technology

A clinical study by Coventry and Warwickshire Partnership NHS Trust and Oxehealth has significantly reduced falls and saved time following Manor Hospital's introduction of the Digital Care Assistant, with benefits for patients, nurses and the organisation.

Coventry and Warwickshire Partnership NHS Trust saw falls at night drop by a third on two wards that introduced the Oxehealth Digital Care Assistant technology, a clinical study has shown.

Manor Hospital's Pembleton and Stanley wards, which care for inpatients with dementia, installed the Digital Care Assistant in half of their bedrooms, and measured the impact over eight months.

The Digital Care Assistant uses software to enable an optical sensor to detect activity and measure the vital signs of patients in bedrooms. During the clinical study that ran from March to October last year, there were 33% fewer falls at night than in the same period of 2017.

A just published report also shows that there was a 71% reduction in time spent by nurses on enhanced observations; a time saving of 7,800 hours per year for the hospital. Staff reported increased confidence and family members felt they had more peace of mind that patients were well looked after.

The falls that did take place were less severe: more than half did not result in harm to the patient. This not only supported better care but resulted in a 56% reduction in demand for A&E services.

Tracey Wrench, trust chief nurse and chief operating officer, said: "This initial data is very promising. The one third reduction in falls is very encouraging, and the remaining falls have been less serious. The data really does suggest that patients are safer.

"Also, nursing staff have really enjoyed using the technology and working with Oxehealth on embedding this innovation into nursing practice. It has also been supported by the whole multidisciplinary team. The study collected a lot of positive feedback, in terms of staff being able to anticipate falls and respond faster to falls and as a result has improved staff experience.

"Carers have also been positive, because the technology helps to give them peace of mind, and reduces disturbance at night, which is a serious issue and one that the trust will be very mindful of, as we move into business as usual."

Manor Hospital near Coventry cares for people with a primary diagnosis of dementia from two, 12-bedroom wards: Pembleton for women and Stanley for men.

Patients stay in individual rooms off a main corridor for privacy and dignity, but they are at high risk of falls, so staff typically check on them every 15 minutes.

This is time consuming for nurses and disruptive for patients, particularly at night; and if an 'unwitnessed' fall takes place, even more intrusive observations are required, to make sure the patient didn't suffer a head injury.

To address this, the trust instigated a research project and installed the Oxehealth Digital Care Assistant in six bedrooms on each ward. This sends an alert to a central monitor when a patient is on the edge of their bed or getting out of bed, which enables staff to react quickly and take preventative action.

If there is a fall, staff can also use the Digital Care Assistant to replay a short video of the incident, turning an unwitnessed fall into a witnessed one, and avoiding the need for invasive observations if no head injury occurred.

To establish the impact of the installation, the trust ran a clinical study with staff on the night shift (7.30pm to 7.30am), when 70% of falls in bedrooms take place.

The study compared incident data from January 2017-February 2018 with March-October 2018, ran surveys and interviews with staff, and conducted detailed interviews with carers. Its key findings were:

- * Falls at night were reduced by 33% and the severity of falls was reduced substantially; 'moderate' falls that may result in additional treatment, A&E visits or surgery, fell from 8% to 2%, while 'no harm' falls increased from 31% to 55%. As a result, demand for A&E services dropped 56%.

- * Time spent on 'enhanced' observations has reduced by 71%, saving 7,800 clinical hours per year for the hospital.

- * Staff reported greater confidence in managing patients and were positive on the impact of the technology: in October 2018, 92% said the system helps them to provide better care during the night and improves patient safety on the ward.

Stanley ward manager, Linda Fitzpatrick, told the study: "The severity of falls and associated injuries have reduced massively at night: I think it's because we can intervene earlier. For example, we can attend to patients within seconds if they are disorientated or confused so they don't slip and fall."

- * All carers felt the system keeps patients safer. Five of the six carers interviewed felt the system improved care for patients on the ward, and four felt it offered greater privacy and less disruption than the trust's current protocols.

One family member told the research team he liked the system because: "It gives me peace of mind that my mum is being well looked after."

Coventry and Warwickshire Partnership NHS Trust is now in a transition phase and is progressing towards embedding the Digital Care Assistant into 'business as usual' in this care setting. It has already extended its research project in the use of the system to adult acute wards at its Caludon Centre following full support of the senior clinical leadership team. It is working with other trusts using the Oxehealth technology to support continued developments of the technology and therefore its potential wider roll-out.

Tracey Wrench said: "The trust has taken an active approach to introducing innovation, and we want to encourage other organisations to become fast followers. We are collaborating with other trusts so we can learn from them and they can learn from us. This research has given us robust evidence that we can all build on."

Hugh Lloyd-Jukes, chief executive of Oxehealth, said: "This is a wonderful application of the Digital Care Assistant. We invented the system to save nurses time and improve patient outcomes: at CWPT, it has reduced falls by a third and saved staff observation time. The CWPT team thoroughly tested the system then placed it at the heart of their ways of working; we'll be sharing the best practices they've developed with our other customers."

Ends

Notes

Coventry and Warwickshire clinical study: [Safer dementia care in mental health hospitals](#)

About Coventry and Warwickshire Partnership NHS Trust

Coventry and Warwickshire Partnership NHS Trust provides mental health, learning disability and community health services to the people of Coventry. The trust also provides mental health and learning disability services in Warwickshire and Solihull, in addition to providing a range of specialist health services to people across the UK. In a typical day, the trust sees nearly 5,000 patients from an overall catchment area with a population of more than one million people.

About Oxehealth

Oxehealth was founded by the head of engineering at Oxford University, Professor Lionel Tarassenko in 2012. Since then, it has become a UK tech success story, with financial backing from IP Group Plc and Ora Capital, two major investment trusts committed to supporting UK science for the long-term.

Oxehealth's Digital Care Assistant products are already used by seven mental health trusts (12% of all the mental health trusts in England), three care home chains in the UK and Sweden and two police forces.

Oxehealth's software solutions act as an assistant for staff when they cannot be present in a room, or do not want to disturb an individual. They enable optical sensors to alert clinicians, carers and custodians to high-risk activity, take spot vital sign measurements and review activity reports. This helps staff to improve the care of the elderly and vulnerable by reducing injuries and enabling staff to spend more time on hands-on care.

A case study has been published about Oxehealth's work at Manor Hospital, part of Coventry and Warwickshire Partnership NHS Foundation Trust, where falls are a major risk. Staff report that the Digital Care Assistant has "become the sixth member of our team on the night shift."

About Oxehealth's vital signs measurement software

Oxehealth uses proprietary signal processing and computer vision to process normal digital video camera data to measure pulse rate and breathing rate and is intended for the non-invasive spot measurement of these vital signs.

It is a fixed-installation device for use within single occupancy rooms covered by a framework that mandates periodic checks by a trained professional to ensure subject safety. See device Instructions for Use for intended use, contraindications, warnings, cautions, usage directions and maintenance.

For further information visit:

<https://www.oxehealth.com/>

<https://twitter.com/Oxehealth>

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