

Thinking outside THE BOX

Care homes have been trialling a new kit called the Blue Box to help assess patients and monitor deterioration – with some very positive results

A digital kit that can help monitor signs of deterioration in patients has delivered promising results after a pilot project carried out across care homes.

The Blue Box contains all the equipment needed to measure the six features which make up the National Early Warning Score (NEWS2) assessment, which is used by almost all acute care and ambulance trusts.

Tara Marshall and Amy Dolben explain the aim of the Blue Box project and the benefits it brought during the trial scheme.

NEWS2 was published by the Royal College of Physicians in 2017 and measures six physiological parameters: respiration rate, oxygen saturation, systolic blood pressure, pulse rate, level of consciousness or new confusion, and temperature. Used in 99 per cent of acute care trusts and all ambulance trusts, it's the only validated system across the UK.

There has been a longstanding ambition to spread NEWS2 to other health and social care sectors, such as care homes. The assessment has traditionally been completed on paper but has

now been adopted into several digital systems, enabling safer transference of data.

There are more than 1,100 care homes across the Eastern Academic Health Science Network (AHSN) region. A significant number of residents in these homes live with frailty, meaning they are at risk of becoming unwell very quickly and developing serious illness. Covid-19 infection control measures meant less footfall through care homes, which led to diminished in-person primary care support for care home staff and residents.

Consequently, it became important to support care home staff to understand how to prevent, identify, escalate and respond to deterioration, and connect with external support, including GPs, district nurses and other members of multidisciplinary teams (MDTs).

Prior to the Covid-19 pandemic, care home staff typically received face-to-face training, but due to infection control measures, it was not possible to deliver in-person training. Seeking a solution to this challenge, Eastern Patient Safety

Collaborative (PSC) took part in a pilot project with the aim of supporting care homes in using a digital solution, known as the Blue Box, to manage deterioration.

The Blue Box contains all the equipment needed to take a NEWS2 score. Readings are transferred via Bluetooth from the equipment to a tablet and into a virtual personal profile. Accessible through secure cloud software, the data informs the MDT about residents' wellbeing. In addition to NEWS2, the Blue Box supports soft signs

The Blue Box has received a largely positive response from care homes



tools, Situation, Background, Assessment, Recommendation, Decision and other physical health assessments commonly used in care homes.

During the pilot programme, 35 homes were recruited from seven clinical commissioning groups (CCGs). All training was designed to suit a virtual platform and delivered through Microsoft Teams. Care homes were encouraged to continue to use Teams as a peer support tool.

Eastern AHSN measured the impact of early intervention on healthcare services, such as 999 ambulance conveyances. Using business intelligence software, data was collated from several sources to provide a system-wide picture of the impact on these services.

The data demonstrated that early intervention provides support for business planning and equipment provision. Eastern PSC demonstrated a positive impact on community and acute services using the Blue Box to support those with long-term conditions or to facilitate annual health checks as part of virtual wards.

As the pilot progressed, Eastern PSC supported the scale-up of the Blue Box across the region, using a train-the-trainer approach. As per the national programme ambitions, all homes across north east Essex and West Suffolk CCGs have a Blue Box in place and several other CCGs are in the process of procuring additional boxes or applying for funding.

The best endorsement for any tool comes from those who use it. Care homes across the east of England have reported significant benefits in using the Blue Box to prevent and monitor deterioration in residents. For example, a care home in Essex noticed that the digital device facilitated better communication with the MDT who could access resident data remotely, leading to improvements in shared decision-making. Similar to the emerging virtual ward model, the Community Matron was able



to remotely monitor residents' oxygen levels during the height of the Covid-19 pandemic when care home visitation was very limited.

The continuous monitoring of residents' oxygen levels has also prevented unnecessary hospital admission as the care home was able to provide evidence of baselines to emergency responders. Across the region, other care homes in the pilot have witnessed improved resident outcomes as a result of taking NEWS2 scores with the Blue Box. Early signs of deterioration were more easily identified as care homes were able to monitor residents at risk of deterioration, such as those recently discharged from hospital and those living with complex health conditions.

Care home staff also saw a positive impact on their work. Staff found the device intuitive and easy to use. Additionally, temporary agency staff were set up with Blue Box accounts.

Despite some initial resistance to digital technologies, care home staff often preferred taking observations on the device to minimise risk of human error. It also ensured all resident health data was organised in a single space which in the future will contribute to shared care records.

Eastern PSC has developed a deterioration dashboard that gathers resident observation data and ambulance activity aligned via automated data streams at a care home, primary care network or integrated care system level; providing evidence of return on

investment for commissioners.

The convergence of these benefits has led to improved clinical deterioration pathways and data-driven decision-making.

Eastern AHSN is committed to continuing to reduce health inequalities in order to ensure parity of care for all care home residents. As one care home manager said: "Every care home should have a Blue Box." ■

Tara Marshall, below left, is Clinical Improvement Lead at the Eastern Patient Safety Collaborative. An NHS nurse for 20 years, she has worked across critical care and outreach and led the implementation of digital systems and can now be found in Patient Safety, specialising in Human Factors she utilises this experience to improve the outcomes for patients and the people who look after them.

Amy Dolben is an Improvement Advisor at Eastern AHSN. She works closely with Tara to deliver the National Managing Deterioration and Medicines Safety Improvement Programmes. She previously worked in research management at the University of Cambridge School of Clinical Medicine.

