PHILIPS

capsule

Case study

Foundation Trust expands medical device integration program to improve care quality, reduce clinician burden and lower costs

COVID-19 prompts expansion of medical device integration

The United Kingdom was one of the earliest and hardest-hit nations in the COVID-19 pandemic. By May 5, 2020, the UK recorded the second-highest number of coronavirus-related deaths in Europe.[1] Due to the outbreak, several Foundation Trust hospitals expanded their intensive care units (ICUs) to accommodate the influx of patients with COVID-19 infections. At the same time, Trust leaders needed to ensure that healthcare providers minimized exposure to patients with the virus while still delivering high-quality care.

One such Foundation Trust in a large metropolitan area of the UK faced these same challenges and turned to longtime partner Capsule Technologies to help expand its medical device integration (MDI) effort that would promote better outcomes while protecting clinicians. Using Capsule's Axon clinical computing hubs in its ICUs, surgical theatres and recovery areas, the Trust remotely captures and analyses data from as many as nine medical devices per hub, including monitors that track key respiratory and blood oxygenation parameters, which are crucial for managing patients with COVID-19.

Broader integration yields benefits

Based on their experience, the Trust decided to expand the number of beds utilising Capsule technology from 100 to more than 200 in ICUs. With elective surgeries postponed due to COVID-19, 100 of those new ICU beds were installed in converted surgical theaters with anesthesiology machines used to ventilate COVID-19 patients. The expansion of Capsule technology alleviates nurses from manual entry and enables them to use a computer at the patient's bedside to view and act on data collected from various devices. The new streamlined workflow gives nurses the confidence to manage the larger nurse-patient ratios. More efficient, real-time clinical surveillance using Capsule is also helping to accelerate ICU turnover for the Trust and maximize its capacity.

Outcomes

- Enabled expanded nursing oversight of additional COVID-19 ICU patients
- Moved to continuous monitoring without clinician workload or labour costs
- Supports device utilisation to identify cost savings

"Part of the reluctance to release from the ICU to lower-acuity areas are clinicians' concerns about monitoring because there are more patients per clinician in those areas," said the Trust's senior IT executive. "By extending the use of the Capsule system, we may be able to safely release more of those patients sooner with greater confidence."

Client

A Foundation Trust that includes acute and specialist services delivered to multiple hospitals in a large metropolitan area of the United Kingdom.

Areas implemented

Intensive Care Unit, surgical theatres and recovery areas

Devices integrated

General Electric and Philips monitors tracking cardiac activity, SpO_2, CO_2 and numerous other physiological measurements

Integration to

Electronic patient record and analytics applications

> "Taking patient care readings is labor-intensive, but also requires a lot of close proximity, which raises the risk of transmission. By expanding our medical device integration program, we can automatically capture more device data, so we're delivering high-quality care, but also limiting unnecessary contact."
>
> **—Senior IT executive at the Trust**

Evolution to a paperless environment

The Trust's partnership with Capsule began in 2010 when it began integrating its medical devices in its ICU through a clinical information system. More recently, the Trust implemented an electronic patient record (EPR) system and is on track to achieve the NHS's latest long-term goals for all secondary-care providers to be fully digitised by 2024.[2]

While most Trusts are still at work digitising their records, others are much further ahead, pursuing MDI programs that incorporate their EPRs to reduce paper consumption. More importantly, a Trust-wide technological integration helps providers develop a centralised, comprehensive view of their patients based on the EPR, vital signs and other physiological measurements captured from devices.

This information is also used to inform the National Early Warning Score (NEWS), which is a standardised tool embraced by Trusts and developed by the Royal College of Physicians to improve the detection and response to clinical deterioration in patients. The NEWS (now in its second iteration) is based on respiration rate, oxygen saturation (SpO_2), systolic blood pressure, pulse rate, temperature and level of consciousness or new confusion. Data for these objective parameters can be gathered from devices.

Since its Capsule partnership began, the Trust has effectively captured and acted on these measurements and many others, which prepared it for the surge of COVID-19 cases by more efficiently detecting signs of decompensation. In short, the solutions are helping the Trust move from episodic monitoring to continuous integrated surveillance without adding to clinician burden or increasing labor costs.

Improved asset management

Another benefit of integrating devices through Capsule is device location transparency. With mobile monitoring devices spread out over large facilities, it can be challenging to locate equipment when needed, contributing to care delays. Connecting mobile devices through Capsule MDI solutions offers greater visibility over device location and status, enabling clinicians to procure needed equipment and offering the Trust insight into utilisation.

"We have close to 600 mobile devices, but maybe we don't need that many," said the senior IT executive. "It's something we've never been able to efficiently or effectively study, but Capsule will give us that opportunity to identify utilisation patterns and perhaps lower some of those costs."

Beyond COVID-19

The streamlined data capture, more efficient workflows, and most importantly, a more reliable, holistic and predictive view of its monitored patients have offered significant advantages to this Trust during the pandemic. Thanks to its MDI program and Capsule partnership, however, these benefits will continue long after COVID-19 is under control.

"We've had a great relationship with Capsule over the years and rely on its guidance with our MDI program," said the Trust's senior IT executive. "They always make my job easier and easier for our team as well."

1. Browne, Sam Meredith, Ryan (5 May 2020). "UK coronavirus death toll surpasses Italy to become the highest in Europe," CNBC. https://www.cnbc.com/2020/05/05/coronavirus-uk-death-toll-becomes-the-highest-in-europe.html. Accessed November 10, 2020.
2. The King's Fund. "The NHS long-term plan explained." 23 January 2019. https://www.kingsfund.org.uk/publications/nhs-long-term-plan-explained. Accessed November 10, 2020.

For more information, contact us

North America
+1 800-260-9537
support@capsuletech.com

International Offices
+33 1 84 17 12 50
international@capsuletech.com

CapsuleTech.com

MKT0381, DCN 2021-036 Rev 0.0 Published 2021-Feb