



Facilitating Cardiology Decision-making at the Point-of-care

As the prevalence of cardiovascular disease (CVD) continues to grow, Rhys Tassell, Point of Care Testing Team Lead at Cambridge University Hospitals NHS Foundation Trust, explains how Addenbrooke's Hospital's Emergency Department is ensuring a swift diagnosis at the point-of-care.

Cardiovascular disease is the leading cause of death in the UK, with over 100,000 individuals suffering heart attacks each year, and the number continues to grow*. For patients with CVD, it's critical that diagnosis is timely so a treatment plan can be put in place swiftly, safely and effectively.

Addenbrooke's Hospital's Emergency Department (ED), part of Cambridge University Hospitals NHS Foundation Trust, serves the local population of South Cambridgeshire as well as adjoining parts of Essex, Hertfordshire and Bedfordshire. The hospital witnessed a steady increase in emergency admissions, with chest pain one of the most common presentations, and sought to open a 24/7 laboratory housed within the Emergency Department to ensure rapid turnaround times for diagnostic tests at the point-of-care. This has since included a refresh of solutions in place to aid in the testing of CVD.

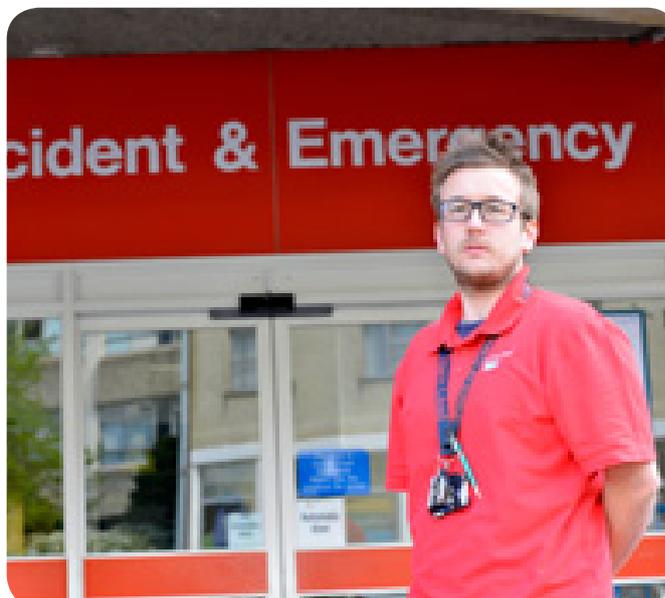
Rapid Results for an Enhanced Patient Experience

The ED Laboratory is the first in the UK to install two Stratus® CS 200 Acute Care Diagnostic System cardiac analysers from Siemens Healthcare Diagnostics, enabling a rapid diagnosis of CVD to quickly determine an appropriate treatment plan. Prior to the ED Laboratory being in place, samples would be sent to the Central Laboratory to be processed.

Rhys Tassell, Point of Care Testing Team Lead at Cambridge University Hospitals NHS Foundation Trust, explains, "The prevalence of cardiovascular disease means we sought to make it quicker and easier to gain diagnostic results [of patients] attending ED who may require admission. Through the decentralisation of CVD tests from the Central Laboratory into the core of the healthcare setting, clinicians are able to quickly formulate a decision as to whether a patient should be discharged or will need a bed. Furthermore, from the patient's perspective, it significantly reduces anxiety. Faster results lead to less time spent in hospital and a reduction in the stress of waiting for a diagnosis, ultimately improving the patient experience."

Meeting A&E Guidelines and Targets

Complying with the NHS maximum four-hour wait A&E guidelines is a key commitment at Addenbrooke's Hospital and a standard contractual requirement for all



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NHS hospitals. Previously, when samples were sent to the Central Laboratory, it could take up to three hours from test to reporting results.

"If the four-hour NHS waiting times target is breached, there is the potential for the hospital to be issued with a fine. With the Stratus CS 200 system, we can rapidly gain results in around 14 minutes and with testing taking place in the Emergency Department, it can take just 35 minutes for the whole cycle from testing to delivery of results. Previously, when sending tests to the Central Laboratory, the process was significantly slower so the Stratus CS 200 system is aiding us greatly to stay within A&E waiting time requirements," states Rhys Tassell.

Streamlining Procedures in Line with Industry Best Practice

The Stratus CS200 features a touchscreen interface, enabling easy navigation of menus as well as a barcode reader to eliminate the need for manual entry. The system also allows results to be reported in dual units, for easy interpretation by clinicians. It delivers a robust cardiac assay menu, including guideline acceptable sensitive Troponin I, meeting European Society of Cardiology and American College of Cardiology Joint Committee recommendations of $\leq 10\%$ CV at the 99th percentile of normal population. Increased sensitivity of troponin tests can capture damage from very small or evolving infarcts



Addenbrooke's Hospital's Emergency Department is tackling a rise in CVD admissions with a swift diagnosis at the point of care.

and also allows a reduction in the window of serial testing.

Rhys Tassell continues, "Previously, we were capable of handling approximately 650 Troponin I samples per month, while this now typically averages at around 900. Furthermore, turnaround times for these results has improved from taking over 45 minutes to between 17 and 25 minutes. The ability to automatically scan barcodes without manual input has had a great impact on staff in terms of ease-of-use and time saved; it also drastically reduces potential for human error. We recently enrolled with WEQAS to further bolster our service quality and assess comparability to other methods in the scheme."

The hospital is also benefitting from system password protection to ensure only selected staff groups with experience in calibrating the system can make changes to established settings. Previously, access was available to all who used the system, risking settings being accidentally changed which could affect results and have a negative impact on patient diagnosis.

Benefitting from the Latest Technology Now and Into the Future

Rhys Tassell concludes, "Addenbrooke's Hospital prides itself in staying up-to-date with the latest technology and we are always open to piloting new systems that can help to advance our offering. By working closely with partners

such as Siemens who actively respond to our feedback, we can ensure this technology best meets our needs, in turn improving patient pathways and outcomes. We now send very few samples to the Central Laboratory and in the future we are hoping to increase our testing repertoire even further within the ED, emulating the success we have experienced in the diagnosis of CVD patients."

Stratus CS200: Streamlining Workflow at Addenbrooke's Hospital

- Improved patient experience and movement through the ED
- Reduced workload in the Central Laboratory
- Fast analysis of low-risk chest pain and earlier exclusion of myocardial infarction
- Ability to scan sample barcode, minimising risk of manual error
- Dual unit measurement for easy results interpretation for staff
- Password protection to ensure only registered users can amend settingsⁿNHS Choices; April'15; <http://www.nhs.uk/Conditions/Coronary-heart-disease/Pages/Introduction.aspx>