

POINT-OF-CARE

TESTING



Achieving CPA-compliant haematology analysis in the A&E setting

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With pressure on staff in accident and emergency to comply with the four-hour target, HORIBA Medical's latest point-of-care haematology solution has been hailed a great success.

Today, most hospital pathology departments have experience of, and are comfortable with, point-of-care (POC) clinical chemistry analysers placed in specialist clinics and departments. However, remote haematology analysers offering full blood counts (FBCs) are now being identified as an increasing benefit to medical staff and patients alike. These analysers save time and costs for patients, medical and laboratory staff by reducing waiting times, enabling rapid turnaround of results and reducing the workload of busy central laboratories. Consequently, POC analysers are now fundamental to achieving government-recommended targets and providing the best possible patient care.

For central hospital laboratories, the management of these remote analysers and their users is achieved through complying with the core standards and requirements for medical laboratories and POC testing facilities set out by Clinical Pathology Accreditation UK (CPA). Meeting CPA requirements is a fundamental requirement for all POC tests, as it is essential to ensure that only trained personnel who understand the correct operation of these remote analysers are able to access them. Guaranteeing the quality of results that clinicians ultimately act upon is crucial to patient safety, while achieving compliance to CPA standards demonstrates confidence and a level of trust in the pathology services provided by hospitals, clinics and POC testing (POCT) facilities.

In the accident and emergency (A&E) department at Watford General Hospital, part of West Hertfordshire Hospitals NHS Trust, POC haematology analysis has been available for the

past 10 years. Providing FBCs, the department was running an ABX Micros 60 from HORIBA Medical, which provides a three-part differential, managed by the main haematology laboratory but located in the A&E department. However, following a CPA audit it was agreed that a POC analyser able to deliver full audit trails was required to ensure complete CPA compliance.

"In order for our POC haematology analysis to be fully CPA-compliant we had to make some changes," explains Jo Nicholson, special haematology section manager at Watford General Hospital. "We needed an analyser that would provide comparable results to the

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laboratory system, including a five-part differential. We also needed a system that would link with the laboratory information management systems (LIMS) and keep a record of all results. Finally, we required password protection and user ID so that we could track and manage operators and ensure only trained personnel were using the analyser.”



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Jo Nicholson, special haematology section manager at Watford General Hospital, with the Pentra 60C+ analyser.

A CPA-compliant solution

Approaching HORIBA Medical UK, the haematology laboratory requested a suitable solution to the issue of password protection and user ID, a key requirement to achieve POCT CPA compliance. With customer care high on the agenda and using many years of expertise, HORIBA Medical's technical team was already developing a solution to address the POCT CPA requirements.

"We had been working in partnership with our customers in a variety of POC settings to trial a new solution for POCT, providing password protection, remote monitoring and full audit," explains Simon Ayles, technical support specialist at HORIBA Medical UK. "As a result of this evaluation programme we were pleased to launch the Pentra SAfe solution for HORIBA Medical CPA-compliant haematology and clinical chemistry analysis, providing remote bidirectional access with user ID, password protection and full audit trails. Our objectives were to ensure quality results and patient safety wherever our analysers were placed outside the central hospital laboratories. Together, the ABX Pentra 60C+ haematology analyser and the Pentra SAfe solution enable full POCT CPA compliance."

The ABX Pentra 60C+ is a compact bench-top haematology analyser offering a five-part differential, including atypical lymphocytes and large immature cells, comparable to that achieved in laboratory analysis. The outstanding technical capabilities of the ABX Pentra 60C+ automatically detect and count abnormal cell populations to assist with rapid diagnosis and treatment of haematological disorders.

Frequently used in satellite or smaller laboratories and clinics, as well as being used as a competent back-up system in larger laboratories, the ABX Pentra 60C+ can process up to 60 samples an hour. Offering 26

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parameters, the fully automated analyser is capable of closed-tube microsampling from whole blood, requiring sample volumes of only 30 μL for a complete blood count (CBC) and 53 μL for the five-part differential.

The ABX Pentra 60C+ is provided with a desktop computer and monitor to view results as they are processed as well as the essential audit trail for quality control, calibration, service and maintenance, reagents and patient records. In line with CPA requirements, the combined Pentra SAfe solution also provides a full audit trail for all personnel who have used the analyser and the results they have obtained. This is possible through the secure-access desktop solution that requires a username and password to access the analyser's operating system. Through the assignment of a password only to fully trained personnel, POC managers can monitor the competence of individual users in a POC location to guarantee quality results and ultimately the safety of patients.

In addition to password security, which locks down access to the analyser after it has been idle for a user-defined period of time, the Pentra SAfe solution also enables fully secure remote access for POC managers to all ABX Pentra 60C+ analysers under their supervision. Remote bidirectional access means the manager can access all files and operate the analyser as if they were in front of it, except for physically loading samples. This means they are able to monitor in real time the performance of users,

patient results, reagent levels, instigate a cleaning cycle and even monitor the quality control performance of the system, as required.

Meeting turnaround targets

Following the closure of Hemel Hempstead accident and emergency department and the opening of a new 120-bed acute admissions unit at Watford, all the trust's acute services are now centred on Watford General Hospital. As a result, there is increased pressure on Watford to be able to meet all turnaround targets and provide rapid and appropriate patient care. The combined ABX Pentra 60C+ and Pentra SAfe solution has certainly helped to ensure this happens by reducing the number of samples submitted to the busy main laboratory.

"With the ABX Pentra 60C+ positioned in the A&E department, results are available within two minutes," explains Jo Nicholson. "If samples are sent to the laboratory we have a priority turnaround time of one hour, therefore it is definitely beneficial to the A&E department to have access to POC analysis with a fast turnaround time of just minutes. Furthermore, we run 600–800 FBCs a day in the main laboratory, while A&E runs 60–80 samples a day on the ABX Pentra 60C+. Having a POC haematology analyser takes considerable pressure off the main laboratory, enabling us to also reach our required two-hour turnaround time for the new acute admissions unit."

Fully audited analyser access

In addition to enabling turnaround targets to be met, with the ABX Pentra 60C+ and Pentra SAfe solution *in situ* Watford General Hospital has now achieved full CPA compliance for POC haematology analysis in its A&E department. "Nursing and medical staff are now regularly trained on use of the analyser in order to secure their own IDs and passwords. Furthermore, we can now monitor who is using the analyser, and how, by dialling in remotely through a virtual interface, and can even assist with any problems they may have, all from the laboratory.

"What I also really like about the system is the fact that if you insert a sample in the analyser and try to run it without being logged in, it will reject it to prevent misuse," explains Jo Nicholson. "This functionality has put a stop to costly breakages and damage which occurred to the previous analyser as a result of untrained staff running samples incorrectly, as well as

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crucially ensuring patient safety by the delivery of correct, fully audited haematology results.”

As is often the case, changing to a new system had its challenges when training new staff; however, its ease of use soon won over the A&E clinical staff. With thorough training, the remote monitoring and security advantages offered by the Pentra SAfe solution were quickly accepted by everyone. However, one of the major challenges at Watford General Hospital was to ensure that all staff required to use the analyser – from nursing staff to junior doctors and consultants – were able to be trained. The new security and audit processes of the ABX Pentra 60C+ with the Pentra SAfe solution meant that all staff had to be retrained in use of the analyser, in addition to how to mix samples and prevent analysis of clotted samples, resolve errors and read results.

Initially, training occurred every day after the analyser was installed, but now training is only needed for new staff, and with each rotation of junior doctors. In addition, a new eLearning tool in development at HORIBA Medical will soon offer an easy way for clinical staff to maintain their competence and their password access.

Future of POC haematology

Point-of-care haematology analysis providing FBCs in A&E is still fairly unusual. “Very few hospitals have a POC haematology analyser

offering FBCs directly in the A&E department,” explains Jo Nicholson. “The clinical staff at Watford General Hospital’s A&E department are very happy with the ABX Pentra 60C+ and Pentra SAfe solution. We even have complaints from staff if the analyser is not available, and there is noticeable added pressure to achieve the recommended four-hour targets for A&E patients.

“Where we often used to process samples twice, once using the POC analyser and then again in the laboratory, we now only reprocess abnormal samples of concern. This not only saves time but also costs. The A&E staff have total confidence in the analyser and are seeing confirmation of results they expect to see. The majority of patients are able to be admitted or discharged following POC results alone, resulting in shorter waiting time.”

Having submitted evidence of the changes that have been implemented to meet the CPA POCT requirements, remote haematology analysis at Watford General Hospital has passed with ‘flying colours’. “With the personal approach that HORIBA Medical took in developing a CPA-compliant POC haematology system at our request, we now have a solution in place that meets CPA requirements and one that our medical staff trust and are extremely



The ABX Pentra 60C+ and Pentra SAfe solution has enabled Watford General Hospital to achieve full Clinical Pathology Accreditation UK compliance for POC haematology analysis in its A&E department.

confident in using,” concludes Jo Nicholson. “Point-of-care haematology analysis in locations such as A&E is a huge benefit to the central laboratory, medical teams and ultimately to the patient. It is certainly here to stay.” □

Further information is available from:
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