

Auditing the pre-analytical phase: lessons from 40+ audits across Europe

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BACKGROUND: An audit of Birmingham City Hospital in 2011 by the UK Association of Clinical Biochemistry & Laboratory Medicine (ACB)¹ that showed there was a great need for improvement in the blood collection process in A&E departments. The College of Emergency Medicine says 'it is essential that staff use the right technique to collect blood'. However the complexity of the preanalytical phase (PA) has precluded standardisation of PA processes, despite its impact on sample quality, laboratory efficiency, or patient & healthcare worker safety. The BD Laboratory Consulting Services™ Preanalytical Review provides a consistent method, based on a standard data collection form, to audit PA procedures and practices in hospitals in different countries. Blood collection processes were assessed from storage of blood collection materials through specimen collection, transportation, processing of the samples and the resulting sample quality. By following the samples through the complete process, it was possible to link specific PA attributes to sample quality deficiencies.

METHODS: A consistent method and data collection form were used for audits (N=48) across European institutions of all blood collection systems. Data were collected by observation of PA phase procedures and practices and resultant sample quality.

RESULTS: The PA phase was observed for 3597 blood collection tubes over 1350 collections. Sample quality was assessed for 3532 coagulation tubes. Review of the collection process and the sample quality of these samples showed 7% were underfilled, 48% of the time the tourniquet was left in place for an extended period (> 60s), and many collections did not following a prescribed order of draw. For collections that resulted in haemolysed coagulation samples, 35% had prolonged use of tourniquet, 81% used catheters and for 38% the disinfectant was not allowed to dry.

CONCLUSIONS: The BD Preanalytical Review standardised methodology allows comparison of results between departments and between institutions and countries. The prospective nature of the reviews permits identification of issues within an institution based on more data than that from rejected samples alone. It makes the link between collection procedures and the consequences for the sample quality & efficiency of the institution, providing evidence for all those involved that improved compliance has an impact.

REFERENCE:

1: Call for more training to improve blood tests in A&E, BBC News, 23 September 2011, <http://www.bbc.co.uk/news/health-15025970>, last accessed 22nd July 2013.