Erratum

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Using BD Laboratory Consulting Services™ to understand the impact of the preanalytical phase on sample quality and safety, a multi country perspective

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Background: The complexity of the preanalytical (PA) phase 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 audits PA procedures and practices in hospitals in different countries. 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.

Materials and methods: A consistent method and data collection form were used for audits (N = 48) of all blood collection systems. Data were collected by observation of the PA phase. Sample quality was assessed for laboratory samples of the same type.

Results: The PA phase was observed for 3597 blood collection tubes over 1350 collections. Sample quality was assessed for 8016 chemistry and 3532 coagulation tubes. For collections that resulted in hemolysed samples, 48% had prolonged use of tourniquet, 31% used catheters and for 38% the disinfectant was not allowed to dry. For serum samples with fibrin where the PA process had been observed, 26% had less than 30 minutes between collection and centrifugation and 81% had not been mixed. The following list gives the percentage of collections where a particular behaviour was observed, incorrect patient identification procedure, 56%; tubes labelled prior to collection 61%; coagulation tubes filled to less than 90% of tube volume 7%; gloves not worn 37%; incorrect activation of needle safety device 19%.

Conclusions: The BD Preanalytical Review standardised audit methodology allows comparison of results between departments and institutions. The prospective nature of the reviews permits identification of issues based on more data than from rejected samples alone and therefore affords a more complete understanding for those involved in the PA phase.

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