Case study:

Impact of automated pre-analytical sample integrity checks on ACL TOP® Family 50 Series Hemostasis testing systems

USA

TriCore Reference Laboratory System

Overview

Hospital and laboratory

The TriCore Reference Laboratory System is the largest laboratory system in New Mexico, comprised of two hospital networks, 10 hospitals and a large stand-alone reference laboratory. The study was performed at two hospitals with a total of 1,082 beds: University of New Mexico Hospital and Presbyterian Hospital. ACL TOP 550 CTS systems are used in the Hematology Laboratories at both hospitals.

Study parameters and process

- During the evaluation, more than 12,000 samples were tested
- Hemostasis assays included: PT, APTT, fibrinogen, anti-Xa, thrombin time and D-dimer
- Visual inspection of all samples was performed first, including detection of Hemolysis, Icterus and Lipemia (HIL), clots and fill volume; samples with a clot and/or over- or under-filled samples were rejected and not included in the study
- Hemolysis detection was performed using a Hemolysis chart, Lipemic samples were included, and all Icteric samples were included but flagged
- Samples were then run on the ACL TOP 550 CTS system to evaluate the agreement of the automatic pre-analytical checks to visual inspection

Results

↓24% **reduction in sample flagging rate (from 0.74 to 0.56%)**

↓24% **reduction in inappropriate flags**

No change in detection of problematic samples

73% **of samples visually identified as hemolyzed were verified as acceptable on the ACL TOP 550 CTS system**

Instrumentation Laboratory
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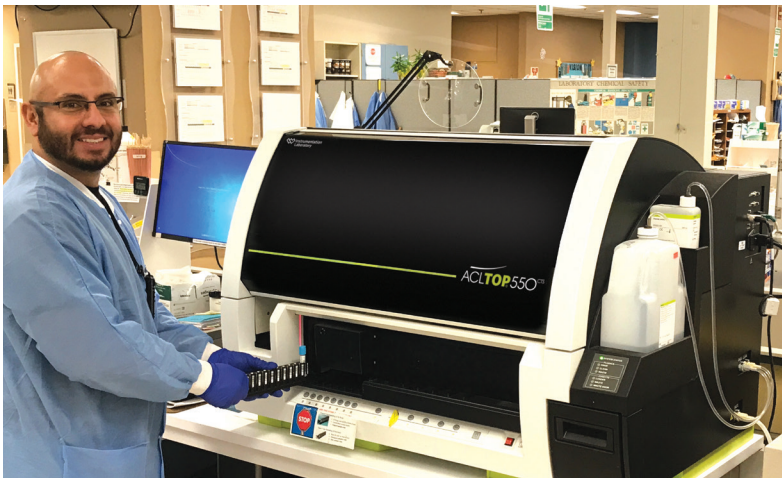
Conclusion

- Automated pre-analytical sample integrity checks on the ACL TOP 550 CTS system improved the identification of assay-specific HIL interferences, with a primary impact on Hemolysis detection.
- The addition of automated sample quality assurance to augment visual inspection decreased the sample rejection rate, leading to improved efficiency.



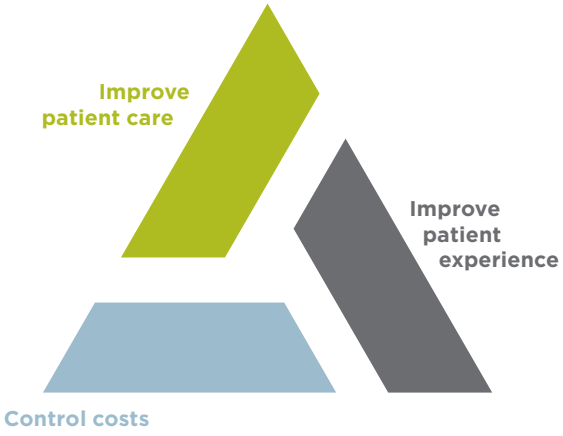
Value of Automated Pre-Analytical Sample Integrity Checks

Improve Patient Care and Experience

- Improved quality and consistency of results
- Decreased sample rejection rates and reduced redraws
- More timely diagnostic results

Control Costs

- Reduced pre-analytical errors
- Reduced costs associated with sample inspection, redraws and re-analysis



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