Title: Automation of Proficiency Testing to Improve Adoption and Quality Laboratory Testing

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Background: The College of American Pathologists (CAP) provides Proficiency Testing (PT) to clinical laboratories as one of several methods to assure quality in interpretation and reporting of results. There are pertinent challenges that arise when incorporating proficiency testing materials into routine laboratory workflow. These challenges include a mismatch between the PT materials and the usual clinical orders or panels utilized. There is also increased demand on laboratory staff and time to order PT specific tests and required analytes, resulting in disruption of workflow. Three areas were identified to improve our PT process. They include the need to track personnel that assayed PT materials and their competency levels, reduce the labor-intensive process of ordering specific analytes and eliminating transcription errors during submission of PT results.

Technology: Access (Microsoft Redmond, Washington), VistA (Veterans Information Systems and Technology Architecture VistA, Washington, DC) and CAP portal (College of American Pathologists, Northfield Illinois).

Methods: Proficiency testing surveys are defined in an Access database (Microsoft Redmond, Washington). Each survey has a predefined set of analytes. The supervisory technologist selects the survey. Using Electronic Health Record (Veterans Information Systems and Technology Architecture VistA, Washington, DC), the computer automatically orders the requisite tests. Labels are generated and affixed to the testing material. These are given to a medical technologist and are processed. The technologist's name is recorded; assuring testing material is randomly assigned to all individuals. After verification, the results are automatically uploaded into the CAP portal

Results: We eliminated transcription error, decreased supervisor overhead of PT oversight by 90% and tracked users that perform PT testing, therefore satisfying the regulatory requirement for competency assessment. We now have a database interfaced to our laboratory information system that automatically orders, based on those analytes for a specific PT instance. The new system closely mirrors patient testing by labeling PT material similar to patient samples. The process now takes approximately 30 minutes and is fully automated. The automation of our PT program has drastically reduced the time required to administer, monitor and report results.

Conclusion: Incorporating competency assessment into routine laboratory processing can be better performed through automated processes.