Patterns-of-Practice Survey Demonstrates the Need for National Guidelines Regarding the Implementation of Microbiology Point-of-Care Tests Across Canada

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ABSTRACT

Background: Microbiology point-of-care tests (POCT) are simple-to-use, automated assays performed outside of a laboratory infrastructure that can improve diagnostic accessibility and turnaround times, with potential benefits for antimicrobial stewardship and patient flow. Commercial availability and performance of POCT have rapidly evolved. Accreditation standards for implementing POCT exist for laboratories but if POCT are implemented without laboratory knowledge, these standards may not be followed and adverse patient outcomes may result. The goal of this survey was to describe laboratory awareness and involvement in POCT use.

METHODS

The Institute for Quality Management in Healthcare (IQMHL) is a clinical laboratory accreditation, proficiency testing, and education organization based in Ontario but with national and international clients. In January 2018, a web-based patterns-of-practice qualitative survey was conducted by the IQMHL Centre for Proficiency Testing to all 73 participating microbiology laboratories to assess the present state of microbiology POCT.

• The primary question addressed awareness of microbiology POCT being in use.
• Secondary questions explored whether or not POCT implementation adhered to laboratory quality standards.

Survey questions were established through consensus of the IQMHL Centre for Proficiency Testing Microbiology Scientific Committee.

RESULTS

All 73 laboratories participating in the IQMHL Centre for Proficiency Testing in microbiology (all licensed Ontario laboratories and non-Ontario laboratories) submitted results for this survey, with a response rate of 100%. The questionnaire was administered within a web-based platform, and while no specific incentive for completion was provided, all participating laboratories are expected to participate in IQMHL surveys, therefore response and non-response bias was nominal. Results of the survey are summarized in Figure 1-4.

DISCUSSION

• Microbiology laboratories are becoming increasingly distanced from places performing POCT, both physically and collaboratively.
• There is a lack of laboratory involvement in implementing and using POCT.
• A significant proportion of laboratory responders in our survey were aware of lack of adherence to routine laboratory quality standards in implementing and using POCT.
• An informal survey was conducted at the 2018 Association of Medical Microbiology and Infectious Disease (AMMI) Canada/CACMID Conference in an audience composed of microbiology, infectious diseases, infection control, antimicrobial stewardship, and public health specialists.
• Similar to our findings, 41% of responders at AMMI were unsure whether POCT was allowed to be performed outside of their laboratory, and 68.8% agreed that microbiology laboratories should be responsible for oversight of these tests.
• The POCT delivery of results and management decisions in community pharmacies and physician offices have profit implications for operators and distributors and pose a unique conflict of interest challenge. This was brought to light in the 2017 Auditor General Report of Ontario in which <1% families physicians were responsible for 50% of billed-in-office POCT in Ontario³.
• POCT implementation and utilization guidelines exist²,⁴,⁵ as do accreditation standards¹,²,⁶ that emphasize laboratory oversight of POCT to assure adherence to quality standards. However, there are no microbiology-specific POCT guidance.
• A larger challenge is that even if microbiology-specific POCT guidelines exist, there is currently no framework to assure adherence to POCT guidelines.

CONCLUSIONS

Our survey results indicate a low level of laboratory awareness and involvement with microbiology POCT and concerning proportions of institutions lacking standard quality management of POCT. In anticipation of the expanding adoption of microbiology POCT, establishing guidelines requiring laboratory oversight of POCT should be a priority.

NEXT STEPS

We have established a working group for Canadian microbiology POCT guidelines that will provide recommendations to assure quality standards regarding POCT use. We will propose to include a framework to assure adherence of these recommendations through licensing bodies and institutional administrators.

These guidelines will serve to create a paradigm shift amongst non-laboratory physicians and health care workers with regards to the importance of incorporating quality management into their clinical practices, a group of clinicians for whom quality management is not typically part of their professional curriculum. In addition, they will serve as a paradigm shift for traditional laboratory personnel regarding the need to be engaged in the oversight of remote sites adopting microbiology POCT helping to bridge bench to patient side care.

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REFERENCES