Canadian microbiology proficiency testing

CMPT Clinical Bacteriology Program

Innovation, Education, Quality Assessment, Continual Improvement

Challenge PC244

February 2025

HISTORY

This paper challenge was sent to category A and C1 laboratories. The following scenario was presented to participants:

An infectious disease doctor requests an antimicrobial susceptibility testing (AST) with no international (CLSI, EUCAST) interpretation for the organism in question.

Please indicate the best option your laboratory would follow.

□ A. perform the AST and report the MICs with comments

□ B. report the AST interpretation (SIR) based on another organism's interpretive criteria.

□ C. report the AST interpretation (SIR) based on another antibiotic's interpretive criteria.

□ D. Reject request

□ E. refer the AST request to the reference or public health laboratory

□ F. Reject the request and comment on the reason

□ G. not applicable to our laboratory

CMPT QA/QC

The Committee considered answers A or E as the correct answers.

SURVEY RESULTS

Reference labs: 11/13 (85%) labs reported A or E, 2 labs reported F

Participants: 43/51(84%) laboratories that submitted an answer, correctly chose option A or E. 8 participants chose answer F (Table 1).

Table 1. Reported results

Reported	Cat A	Cat C1	Total	Grade
A	22	1	23	4
E	19	1	20	4
F	8		8	1
G	1	2	3	ungraded
no report*	1		1	0
Total	**51**	**4**	**55**	

* package not delivered because of customs issues

MAIN EDUCATIONAL POINTS from PC244

1. Recognizing that the best options were either to perform the AST and report the MICs with comments OR refer the AST request to the reference or public health laboratory
2. The importance of performing the AST in a quality environment with appropriate commentary and explanation.
3. The importance of collaboration with infectious disease specialists, microbiologists, and pharmacists to interpret AST results

COMMENTS ON RESULTS

The expectation of this simulation was to successfully support the testing (AST), either within their own laboratory, with an appropriate comment (in relation to the fact there were no international interpretations) or send to a referral laboratory that could perform the testing.

Grading

Maximum grade: 4

Choosing answer A or E was graded 4.

Overall, most reference laboratories (11/13) would perform testing with a comment or send to another reference or public health laboratory with 2/13 opting to reject the request and comment on the reason. The absence in any attempt to support testing resulted in both reference laboratories receiving a grade of 1.

Overall, most Participant laboratories (43/51) would perform testing with a comment or send to another reference or public health laboratory with 8/51 opting to reject the request and comment on the reason. The absence in any attempt to support testing resulted in both participant laboratories receiving a grade of 1.

In total 3 laboratories were ungraded, and 1 laboratory did not receive the package.

The grading of 1 was because if breakpoints are unavailable, organizations such as EUCAST provide ECOFFs (epidemiological cutoff values) to help distinguish wild-type (susceptible) from non-wild-type (resistant) strains based on MIC distributions. These are not clinical breakpoints but can guide interpretation in the absence of formal criteria.

Moreover, in the absence of any defined interpretation, both CLSI and EUCAST emphasize collaboration with infectious disease specialists, microbiologists, and pharmacists to interpret AST results on a case-by-case basis, considering pharmacokinetic/pharmacodynamic (PK/PD) data and clinical context.

Finally, the CLSI M100 guidelines suggest reporting MICs without interpretations if no breakpoints exist, accompanied by a comment like "No established interpretive criteria" and EUCAST advises similar caution, noting that "Susceptible (S)" or "Resistant (R)" categories should not be assigned without validated breakpoints.

REFERENCES

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