The rate of MiE for participating in a proficiency testing program is important in order to improve the quality of results and leads to better quality patient care and public health prevention programs.

## RESULTS AND DISCUSSION

### Neisseria gonorrhoeae, the bacterial agent causing gonorrhoea, is the second most common bacterial pathogen in Canada with over 12,000 reported cases in 2012 (Public Health Agency of Canada, unpublished data). The NML offers a proficiency testing program conducted two times a year. Very Major Interpretation Errors (VMaE) were defined as interpretations where all susceptible interpretations are deemed resistant. Minor Errors (Me) were defined as interpretations with at least one correct and one incorrect interpretation.

### Table 1. Number of MICs used to calculate the Modic IDAs for Comparison

<table>
<thead>
<tr>
<th>Antibiotic</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceftriaxone</td>
<td>25</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Cefixime</td>
<td>25</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Azithromycin</td>
<td>25</td>
<td>25</td>
<td>25</td>
</tr>
</tbody>
</table>

### Figure 4. Interpretation Errors of Etest compared to Agar Dilution

- **Ceftriaxone:** There were very few discordances between interpretative results of ceftriaxone and cefixime. Etest and cefixime results were highly significant (p<0.05) with the following results: 100% (100/100), 100% (100/100), and 98% (98/100) for ceftriaxone, cefixime, and azithromycin, respectively.

## METHOD

**Participant Performance:** Eight provincial public health laboratories from across Canada participated in 10 proficiency panel distributions between 2008 and 2012. Five N. gonorrhoeae isolates with antimicrobial susceptibility profiles similar to current strains circulating in Canada were chosen from the NML national gonococcal antimicrobial susceptibility collection. The NML determined minimum inhibitory concentrations (MICs) for these isolates using the agar dilution testing method as well as the Etest method. The results were then compared to the participant laboratories to be tested with up to 8 antibiotics along with 4 control isolates using the method and media of their choice following CLSI guidelines (CLSI, 2013). The results were sent to the NML and Etest MICs were rounded up to the closest MIC values for comparison with two dilution steps for each isolate.

### Table 2. Test Isolates Results Corrected to test IDA & Controls

**Comparison of Agar Dilution Modal MICs to Etest Modal MICs:** The 50 test strains used for Difficulties and discrepancies existed between agar dilution and Etest MIC results were calculated for all strains tested (Table 2). The results were grouped by antibiotic to determine percent agreement. The Pearson correlation coefficient (Lu, 2014) and T-test for 2 dependent means (p=0.05) (SocSci/BioStat) were calculated. Modal interpretations were also determined and compared. Percent discordance, Very Major Errors (VMe), Major Errors (Ma), Minor Errors (Me) and Cohen’s kappa values (Rosser, 1999) were studied.

## REFERENCES

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10. CDC/Viral Reference Vocabulary. 2012. 2.8% (2/71) for ciprofloxacin.
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13. CDC/Viral Reference Vocabulary. 2012. 21 4 MICs/isolate)
14. CDC/Viral Reference Vocabulary. 2012. 36 4 MICs/isolate)
15. CDC/Viral Reference Vocabulary. 2012. 36 4 MICs/isolate)
16. CDC/Viral Reference Vocabulary. 2012. 8.0% (8/100) for cefixime.
17. CDC/Viral Reference Vocabulary. 2012. 3.0% (3/100) for ceftriaxone.
18. CDC/Viral Reference Vocabulary. 2012. 4.0% (4/100) for ciprofloxacin.
19. CDC/Viral Reference Vocabulary. 2012. 40% (40/100) for ceftriaxone.
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34. CDC/Viral Reference Vocabulary. 2012. 100% (100/100) for ceftriaxone.
35. CDC/Viral Reference Vocabulary. 2012. 100% (100/100) for ceftriaxone.