Background Neisseria gonorrhoeae have acquired resistance to many antibiotics and have developed decreasing susceptibilities to 3rd generation cephalosporins.

Method NG-MAST sequence types and minimum inhibitory concentration (MICs) by agar dilution were determined for each N. gonorrhoeae isolate collected by Canadian provincial public health laboratories and submitted to the National Microbiology Laboratory between 2010–2011 (N = 2391). Isolates are submitted to the NML only when the provincial laboratories identify resistance to at least one antibiotic or if the provincial laboratories do not conduct any antimicrobial susceptibility testing. MIC interpretations were based on the criteria of the Clinical Laboratory Standards Institute (CLSI) and the World Health Organization (WHO) criteria for decreased susceptibility to cephalexin.

Results Among all the isolates tested in Canada during 2010–2011, 23.5% (1489/6330) were resistant to penicillin, 31.8% (2014/6330) to tetracycline, 28.9% (1828/6330) to erythromycin, 32.4% (2051/6330) to ciprofloxacin and 0.8% (50/6330) to azithromycin. Based on the WHO guidelines for decreased susceptibility (CLSI) and the World Health Organization (WHO) criteria for any antimicrobial susceptibility testing. MIC interpretations were considered culture-confirmed. Patient characteristics that were significant for being culture-confirmed. Most attendees were between the ages of 15–34 years (70%), white (55%), and 52% of those who gave information on sexual orientation were men who had sex with men (MSM); 908 (74.6%) men and 156 (12.7%) women were N. gonorrhoeae positive, with the highest prevalence observed in men aged 30–34 years (79.1%) and women aged 18–19 years (19.2%). N. gonorrhoeae was detected more often in MUDS patients co-infected with HIV (aOR 2.25, 95% CI, 1.59–3.17) but less often among men with co-existent C. trachomatis (aOR 0.56, 95% CI 0.26–0.49), T. vaginalis (aOR 0.29, 95% CI 0.17–0.50) and M. genitalium infection (aOR 0.15, 95% CI 0.10 – 0.22). In contrast, the presence of N. gonorrhoeae infection in women with VDS was higher in younger women (aOR 0.72, 95% CI 0.63–0.83) and women co-infected with C. trachomatis (aOR 2.23, 95% CI 1.50–3.31).

Conclusion We have demonstrated an important association between gonococcal urethral discharge and HIV co-infection in men, which emphasises the importance of early diagnosis, treatment and prevention of gonorrhoea as a strategy to reduce HIV transmission to serodiscordant partners. Our data also emphasise the fact that VDS patients with gonorrhoeae are also at high risk of having co-existent chlamydial infection.

Methods During six annual surveys (2007–2012), 1,218 MUDS and 1,232 VDS cases were consecutively recruited. Aetiology was determined using nucleic acid amplification assays (N. gonorrhoeae, Chlamydia trachomatis, Trichomonas vaginalis, Mycoplasma genitalium), microscopy of vaginal smears (bacterial vaginosis, Candida) and serology (syphilis, HSV-2, HIV). Chi-squared tests and logistic regression analyses were used to identify predictors of N. gonorrhoeae infection.

Results There were no significant trends in the prevalence of gonorrhoea among MUDS and VDS patients. Overall, 908 (74.6%) men and 156 (12.7%) women were N. gonorrhoeae positive, with the highest prevalence observed in men aged 30–34 years (79.1%) and women aged 18–19 years (19.2%). N. gonorrhoeae was detected more often in MUDS patients co-infected with HIV (aOR 2.25, 95% CI, 1.59–3.17) but less often among men with co-existent C. trachomatis (aOR 0.56, 95% CI 0.26–0.49), T. vaginalis (aOR 0.29, 95% CI 0.17–0.50) and M. genitalium infection (aOR 0.15, 95% CI 0.10 – 0.22). In contrast, the presence of N. gonorrhoeae infection in women with VDS was higher in younger women (aOR 0.72, 95% CI 0.63–0.83) and women co-infected with C. trachomatis (aOR 2.23, 95% CI 1.50–3.31).

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