Conclusions Although this study shows a low prevalence of NG infection among young pregnant women in Brazil, they presented STI risk factors that justify include STI counselling for this population.

Epidemiology poster session 1: STI trends: *Neisseria gonorrhoeae*: resistance

P1-S1.38 EMERGENCE OF *NEISSERIA GONORRHOEAE* ISOLATES WITH DECREASED SUSCEPTIBILITIES TO CEFTRIAXONE AND CEFIXIME IN CANADA - 2001–2010

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Background In Canada, the susceptibilities for ceftriaxone and cefixime in *Neisseria gonorrhoeae* are gradually decreasing and there has been a shift in the modal minimum inhibitory concentrations (MICs) from 0.016 μg/ml in 2000 to 0.032 μg/ml in 2008. We examined the phenotypic and genetic characteristics of *N gonorrhoeae* with decreased susceptibilities to 3rd generation cephalosporins isolated in Canada between 2001 and 2010.
Methods *N gonorrhoeae* isolates were collected by Canadian provincial public health laboratories. MICs were determined by agar dilution at the National Microbiology Laboratory (NML) and isolates displaying decreased susceptibilities to cefixime (MIC=0.25 mg/l and 0.5 mg/l) and ceftriaxone (MIC=0.125 mg/l and 0.25 mg/l) were examined using multi-antigen sequence typing (NG-MAST) and sequencing of resistance determinants associated with decreased cephalosporin susceptibilities (penA, mtrR, ponA, porB).
Results A total of 155 *N gonorrhoeae* isolates with decreased susceptibility MICs to ceftriaxone and cefixime were identified from the following provinces - Ontario (53.5%, N=83); British Columbia (34.2%, N=53); Québec (12.3%, N=19). Of the 155 isolates observed with reduced susceptibility, 23 were observed between 2001 and 2007 (14.8%), whereas in 2008, 2009 and 2010 there were 84 isolates (54.2%), 23 isolates (14.8%) and 25 isolates (16.1%) observed, respectively. Thirty-eight different NG-MAST sequence types were identified among the isolates; ST-3158, ST-225 and ST-1407 were the most prevalent at 25.9%, 19.4% and 14.8%, respectively. The mtrR resistance determinants were present in 95.5% of the isolates. The penA mosaic was present in 60% of the isolates, with the most common penA mosaic types XXXII and X identified at 51.0% and 7.7%, respectively, while the non-mosaic penA type XII was identified in 36.8% of the isolates. The G101K alteration in porB was present in 97.4% of the isolates and the A102N and A102D alterations in porB were found in 49.7% and 45.8% of the isolates, respectively. L421P alterations in ponA were present in all the isolates.
Conclusions In Canada, *N gonorrhoeae* isolates with decreased susceptibilities to 3rd generation cephalosporins, including cefixime and ceftriaxone have increased over the years. The alterations in penA, mtrR and porB are important determinants identified in these isolates. The most common ST types identified among these Canadian isolates have also been reported worldwide.

P1-S1.39 AZITHROMYCIN SUSCEPTIBILITIES IN CANADIAN *NEISSERIA GONORRHOEAE* ISOLATES (2006–2010)

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Background Canada conducts surveillance of antimicrobial susceptibilities in *Neisseria gonorrhoeae* strains to support development of treatment guidelines.
Methods *N gonorrhoeae* strains were isolated or collected by Canadian provincial public health and reference laboratories. Minimum inhibitory concentrations (MICs) were determined by agar dilution for penicillin, spectinomycin, tetracycline, erythromycin (ery), ceftriaxone, ciprofloxacin (cip), cefixime, and azithromycin (az) at the provincial laboratories or the National Microbiology Laboratory (NML). Sequence types (ST), auxotypes, and plasmid profiles were also determined at the NML.
Results Thirty-nine strains from British Columbia (n=18), Alberta (n=2), Ontario (n=9) and Quebec (n=10) were found to be az resistant (R) (MIC≥2 μg/ml) by either a provincial laboratory or NML between 2006 and 2010. Ten different resistance profiles were represented by the 39 strains. Twenty or 51.3% were Chromosomally-Mediated Resistant *N gonorrhoeae*/azR/cipR (CMRNG/azR/cipR), 4 (10.3%) were Probable CMRNG/azR/cipR and 3 (7.7%) were Penicillinase-Producing *N gonorrhoeae*/Tetracycline-Resistant *N gonorrhoeae*/azR/cipR/eryR (PPNG/TRNG/azR/cipR/eryR). One strain was CMRNG/azR/cipR with reduced susceptibility to cefixime. Twenty-one different sequence types were determined, the most common being ST-1407 with 20.5% (8/39), ST-225 and ST-4815 with 10.3% (4/39) each. Although the estimated rate of azithromycin resistance between 2006 and 2009 is very low at 0.2% of all isolates tested across Canada (31/15 487), the MICs for azithromycin are gradually increasing. In 2001, the majority of strains (27.8%) had an azithromycin MIC=0.25 μg/ml which increased to 51.5% by 2006. In 2007, the majority of strains (55.9%) had azithromycin MIC=0.5 μg/ml. The highest azithromycin MIC found was ≥64 μg/ml (n=2).
Conclusions A shift in azithromycin MICs has definitely occurred and may continue to increase. Although azithromycin is not recommended as the primary treatment for gonorrhoea, it is listed as an alternative treatment. With the increasing reduced susceptibility of our primary treatments for gonorrhoea (cefixime and ceftriaxone), azithromycin may be required to treat gonorrhoea either on its own or in combination with third generation cephalosporins. Therefore, it is imperative that azithromycin susceptibilities in *N gonorrhoeae* continue to be monitored.

P1-S1.40 EMERGING MOLECULAR MUTATIONS OF REDUCED SUSCEPTIBILITY TO THIRD-GENERATION CEPHALOSPORINS IN *NEISSERIA GONORRHOEAE* ISOLATES FROM SASKATCHEWAN, CANADA

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Background Third-generation cephalosporins (eg, ceftriaxone, Cro) are the antimicrobials of choice for the treatment of gonorrhoea. The molecular mechanisms causing reduced susceptibility to these antibiotics in *Neisseria gonorrhoeae* (Ng) isolates differ between isolates from different geographic regions. The objective of this research was to characterise mutations in penA, mtrR, porB and ponA associated with Cro reduced susceptibility (CroRed) in Ng isolates from Saskatchewan (SK), Canada.
Methods A total of 320 of Ng isolates (2003 to 2008) from SK were tested for their antimicrobial susceptibility to Cro using the CLSI agar dilution method. 7% of the isolates (n=23) had Cro MICs of 0.03–0.06 mg/l and were defined as having CroRed phenotypes and