

Maternal Syphilis in British Columbia, Canada: 2010 to 2016

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BACKGROUND:

- Syphilis is an infection caused by *Treponema pallidum*. Syphilis infection during pregnancy is of particular concern because of its potential for transplacental infection of the fetus. Congenital syphilis may lead to serious infant outcomes, including prematurity, low birth weight, severe neurologic outcomes and death.
- In the early 1990s, syphilis rates (infectious and non-infectious) among women in British Columbia (BC), Canada were low, at around 1.5 per 100,000.
- However, from 2010 to 2016, syphilis rates among women have tripled from 1.6 per 100,000 in 2010 to 4.8 per 100,000. Other jurisdictions, including Alberta, Ontario, and USA, have similarly observed increases in syphilis among women.

OBJECTIVE:

- To characterize maternal syphilis cases identified in BC since 2010 in order to identify possible areas for improvement within our current maternal syphilis screening program

METHODS:

- >99% of all syphilis tests in BC are performed at the BC Centre for Disease Control Public Health Laboratory. Positive tests are reviewed by centrally-located expert clinicians who diagnose, stage, and recommend treatment.
- All clinical information collected is entered into the Sexually Transmitted Infections Information System (STI-IS), the electronic medical record system.
- Prior to July 2014, syphilis screening was performed via the non-treponemal rapid plasma reagin (RPR) test, after which time the treponemal enzyme immunoassay (EIA) was introduced.
- Demographic and treatment information of all maternal syphilis cases reported in STI-IS from January 2010 to July 2016 was reviewed and analyzed descriptively. Maternal syphilis was defined as a diagnosis of primary, secondary, early or late latent syphilis in a pregnant woman or within 90 days after delivery.
- We also assessed prenatal syphilis screening based on the number of syphilis tests with a prenatal flag on the laboratory requisition compared against the number of live births reported by BC Vital Statistics.

RESULTS:

- From January 2010 to July 2016, there were 46 maternal syphilis cases reported in BC. The majority of cases (39/46) lived in Greater Vancouver. The remaining cases lived in Interior BC (3/46), Vancouver Island (3/46) and Northern BC (1/46). The median age was 29.5 years (range: 20-46).
- 19 (41%) were diagnosed with early latent while 27 (59%) were diagnosed with late latent syphilis. Most cases (27/46) were diagnosed in the first trimester.
- 42 (91%) were treated with long-acting benzathine penicillin G (Pen-LA) as appropriate for the stage of infection, 1 (2%) was treated with Pen-LA but not adequate for the stage of infection, and 2 (4%) received doxycycline. One (2%) had no documentation of treatment. The 2 cases receiving doxycycline received the medication following fetal loss.
- Immigration from or currently having a partner outside Canada was the most common potential risk factor identified (13/46, 28%). One (2%) case reported sex trade work, 4 (9%) reported having multiple casual sex partners, and 6 (13%) reported substance use.

Figure 1: Summary of Maternal Syphilis Screening and Cases in British Columbia, Canada

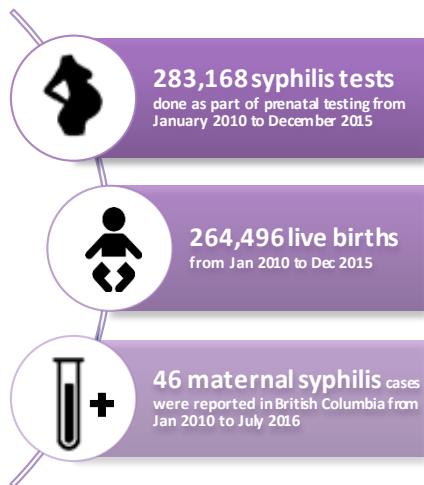
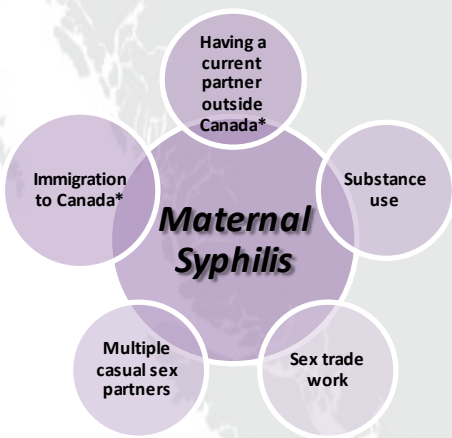


Table 1: Summary of Maternal Syphilis Cases, January 2010 to July 2016

Maternal Syphilis Cases (N=45)		n (%)
Year of Diagnosis		
2010		5 (11)
2011		3 (7)
2012		8 (17)
2013		8 (17)
2014		6 (13)
2015		12 (26)
2016		4 (9)
Self-identified Ethnicity		
Caucasian		11 (24)
Asian		9 (20)
Indigenous		6 (13)
South Asian		5 (11)
Black		1 (2)
Not reported		14 (30)
Stage of infection:		
Early latent		19 (41)
Late latent		27 (59)
Diagnosed during:		
First trimester		27 (59)
Second trimester		13 (28)
Third trimester		3 (7)
Post-partum		3 (7)
Treatment		
Received adequate Penicillin treatment		42 (91)
Received inadequate Penicillin treatment		1 (2)
Received Doxycycline		2 (4)
Unknown/No treatment documented		1 (2)

Figure 2: Summary of Additional Factors Reported by Maternal Syphilis Cases



*Examples: Pakistan, India, China, Somalia, Russia, Afghanistan, Jamaica

CONCLUSIONS:

- Our data indicates that our current prenatal syphilis screening protocols work well in identifying most maternal cases during the first trimester.
- A potential area of focus to strengthen our maternal syphilis screening program is early engagement for mothers born in high syphilis incidence countries (or whose partners remain in such countries) and possibly repeat screening to prevent congenital syphilis.

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FOR MORE INFORMATION:

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