

The Horrifying Syphilis Outbreak and the Devastation of Congenital Cases in Alberta

Telehealth - Public Health Session

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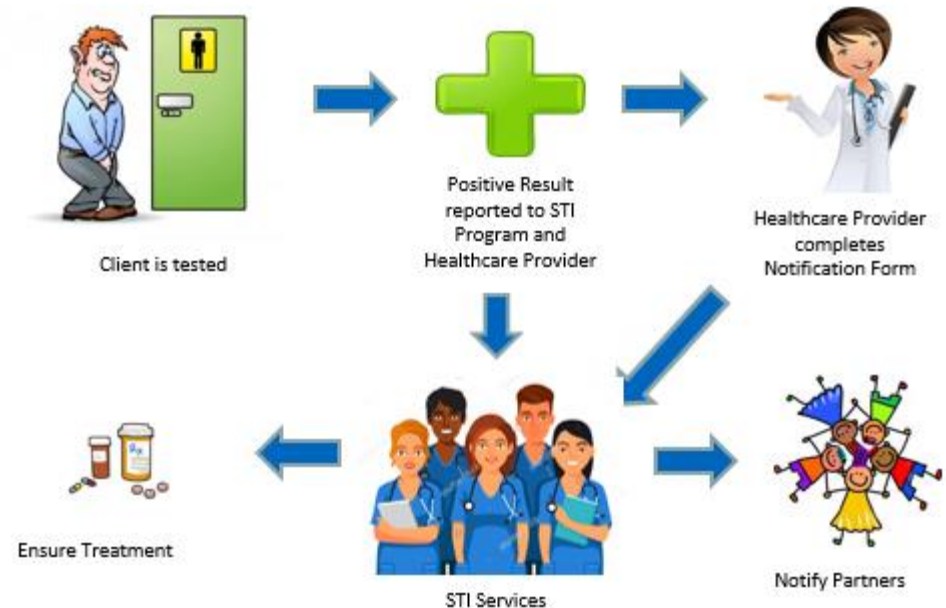
Date: December 13, 2022

Visit ahs.ca/syphilis for outbreak information

STI Services (1920)

Alberta has a strong centralized provincial STI program that works collaboratively with others to ensure:

- people with Notifiable STI are adequately treated
- partners of those people with Notifiable STI/HIV are located, tested, and treated
- medications used to treat Notifiable STI are provided free of charge across the province
- there is a robust surveillance of STI/HIV
- there are STI specialty clinics (Calgary, Edmonton, Fort McMurray)
- there is provincial leadership in developing STI policies and practices



Provincial Syphilis Outbreak

Edmonton

'Horrible' number of syphilis infections in Alberta reaching pre-antibiotic levels

Worst since 1948: Edmonton the epicentre of syphilis outbreak declared in Alberta



Local News

'Putting out fires': Number of syphilis cases in Alberta, Edmonton zone continue to spike

Six still births in first six months of 2020, Edmonton still in midst of syphilis outbreak

Lauren Boothby

Sep 21, 2020 • Last Updated 1 day ago • 4 minute read



CALGARY | News

'It's very bad.' Alberta health professionals raise alarm about spiking syphilis numbers

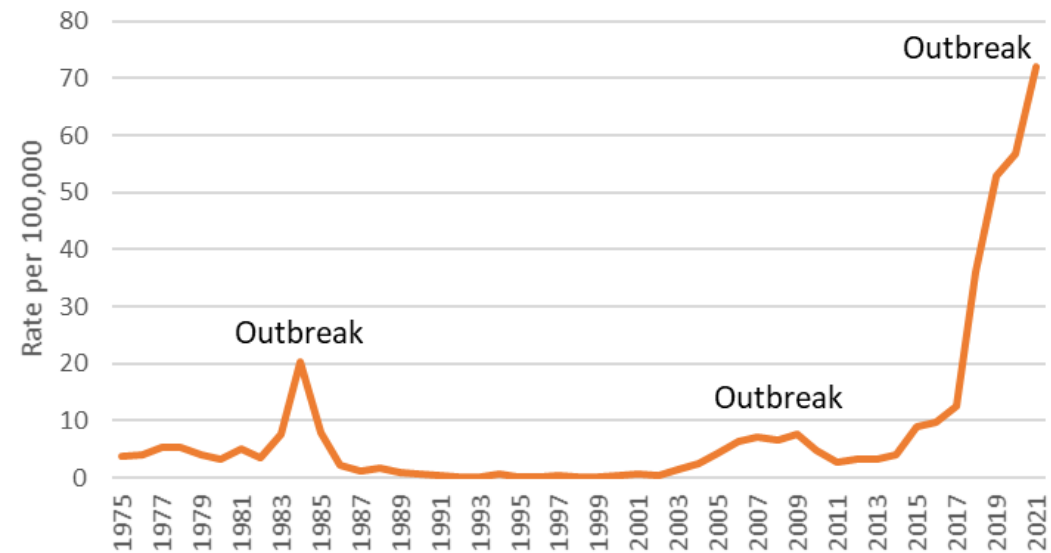


Jordan Kanygin CTV News Calgary Video Journalist

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Infectious Syphilis Rate by Year (AB, 1975-2021)



What is Syphilis?

Syphilis is a complex, multistage bacterial infection that when untreated can lead to multiple complications including visual and auditory deficits, paralysis, syphilitic aneurysms, and stroke.



Test results require interpretation with sexual history, clinical examination, and past treatment history.



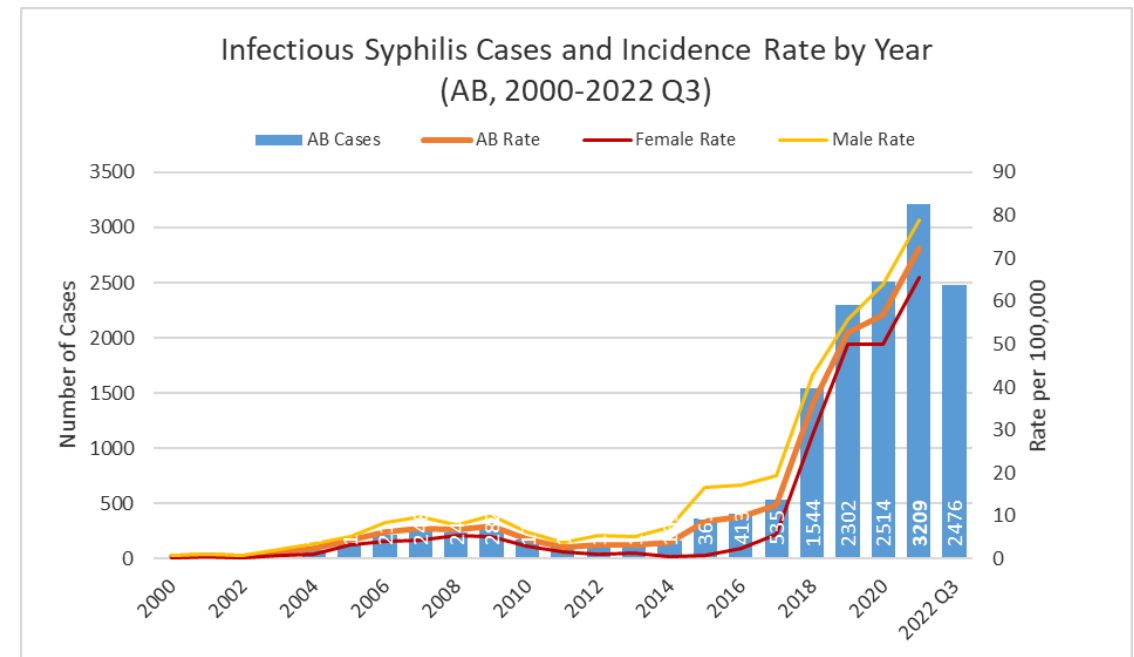
Multiple follow-up serology is required to ensure treatment.

Infectious Syphilis

In 2021, despite reduced access to health services during COVID, there were nearly 3,200 cases of infectious syphilis were reported in Alberta, with a rate that was 17 times higher than in 2014 (pre-outbreak), not seen since 1940's.

- In 2021, the rates increased for both men (23%) and women (31%) from the previous year.
- >10% of female cases in 2021 occurred among pregnant women compared to 0 cases pre-outbreak.
- >25% of male cases were among gay, bisexual, and other men who have sex with men in 2021.
- >15% of cases reported injection drug use.

In July 2019, a provincial outbreak was declared.

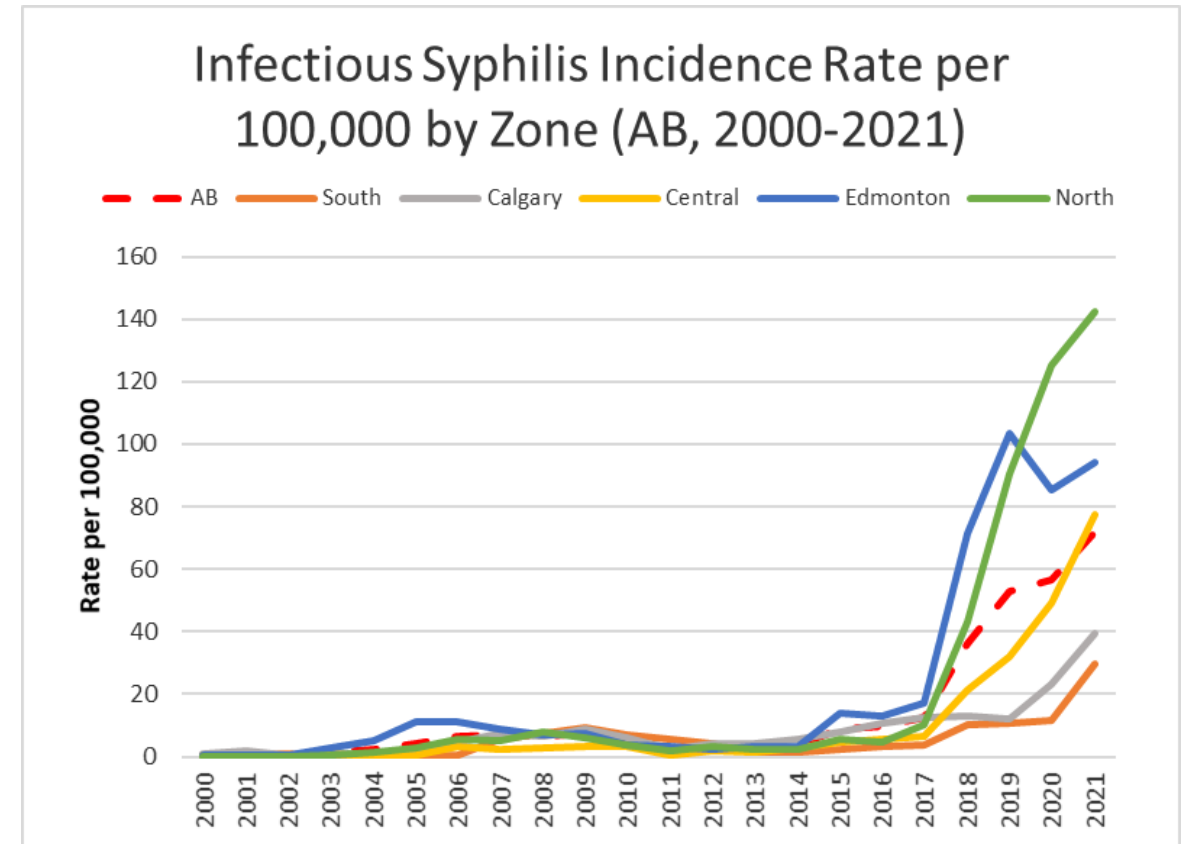


2022 data is preliminary, and numbers are expected to increase.
Interactive Health Data Application, Dec 2, 2022.

Infectious Syphilis by Zone

All zones have been impacted by the outbreak.
The Edmonton zone continues to have the most cases; however, in 2021, the North zone had the highest rate.

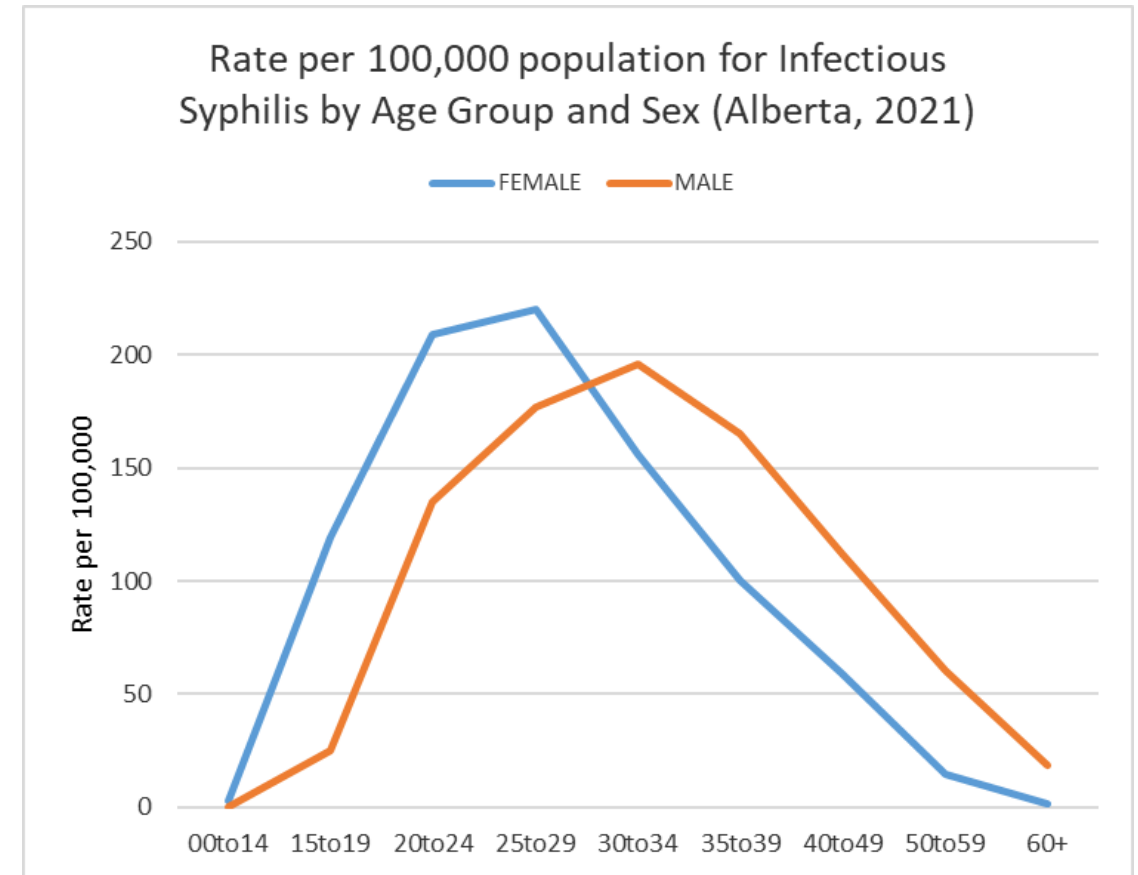
Zone	2021 Cases	2021 rate per 100,000	Rate change from 2020
South	93	30	+158%
Calgary	683	40	+70%
Central	368	77	+57%
Edmonton	1367	94	+10%
North	677	143	+14%
Alberta	3195	72	+27%



Interactive Health Data Application, April 6, 2022.

Infectious Syphilis by Age Group

Syphilis occurs in all age groups.
The highest rates were among
women aged 20-29 years and men
aged 25-34 years.



Interactive Health Data Application, April 6, 2022

The return of syphilis in Canada: A failed plan to eliminate this infection

Ameeta E Singh BMBS, MSc, FRCPC¹, Barbara Romanowski MD, FRCPC¹

Contributing Factors:

Cycling syphilis epidemics

HIV, ART, PrEP

Mobile dating apps

Social determinants of health

Drug use

Stigma and mistrust of the healthcare system

Addressing the Challenge:

Heightened awareness

Timely surveillance

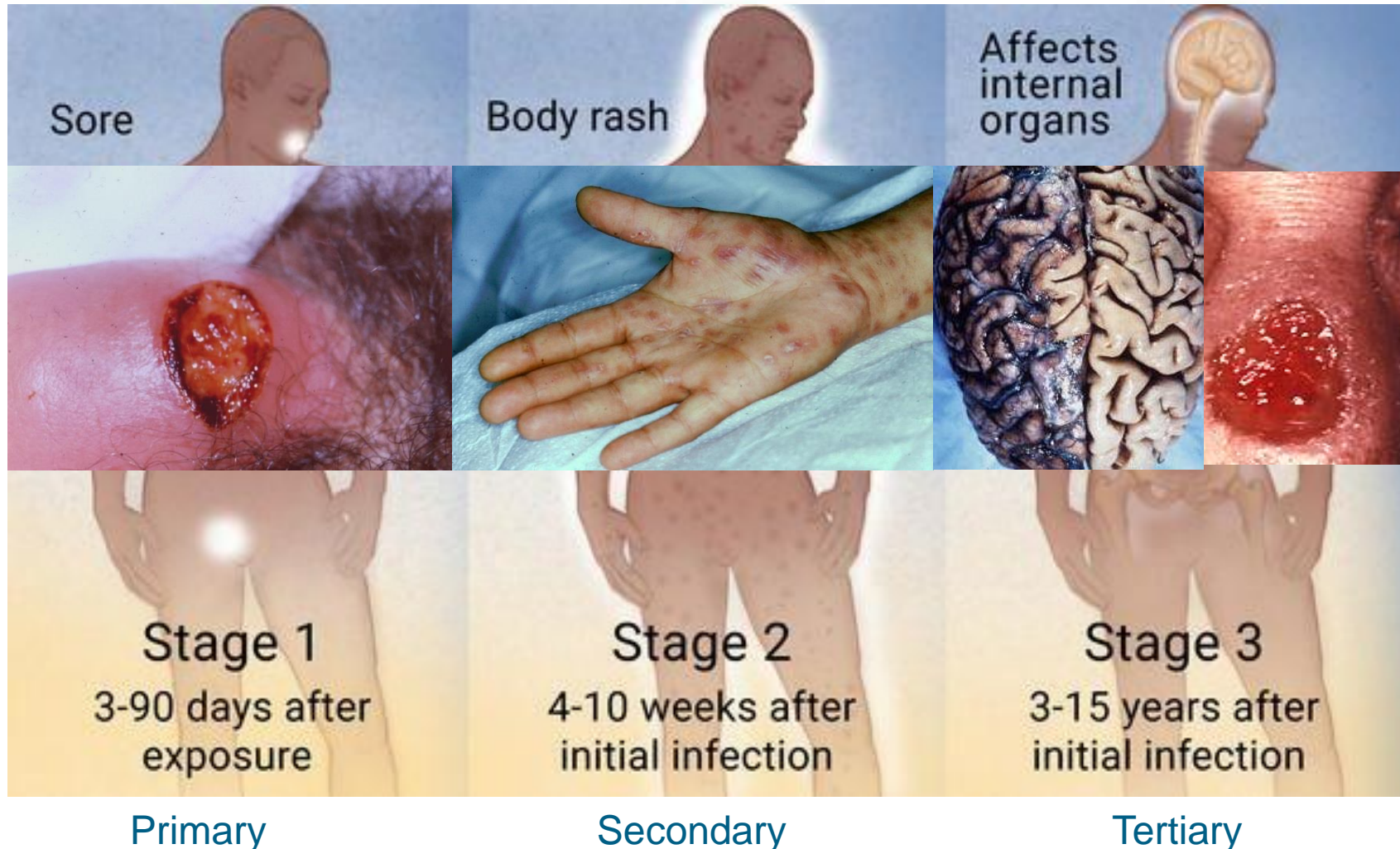
Interventions based on local epi

Address social determinants of health

Sustained resources for prevention and control

Non-traditional service delivery options

What are the stages of Syphilis?



Stages of syphilis

If untreated, syphilis passes through a consistent set of symptoms

- *Primary syphilis*: a painless sore at the site of infection (weeks or months after infection)
- *Secondary syphilis*: a rash over much of the body, sores in and around the mouth, genitals or anus (2 – 8 weeks after primary syphilis)
- *Latent syphilis*: No obvious symptoms (years)
- *Tertiary syphilis*: Large sores inside body or on skin, serious destructive effects on the heart, blood vessel, brain, nerves and spinal cord.

Why should we test for syphilis?

**Syphilis can be
detected by a
simple blood test**

**Syphilis can be
effectively treated
with antibiotics**



Treatment Infectious syphilis

Primary, Secondary, Early Latent

- Preferred Benzathine penicillin G (Bicillin – LA) 2.4 million units IM as a single dose
- Preferred treatment for infectious syphilis in pregnancy:
 - ❖ Long-acting benzathine penicillin G 2.4 mu IM weekly for *two* doses 1 week apart.
 - ❖ There is no acceptable substitute for Bicillin L-A in pregnancy



Syphilis in pregnant women

Syphilis can be passed from a mother to her child *in utero* (congenital syphilis) and at the time of delivery

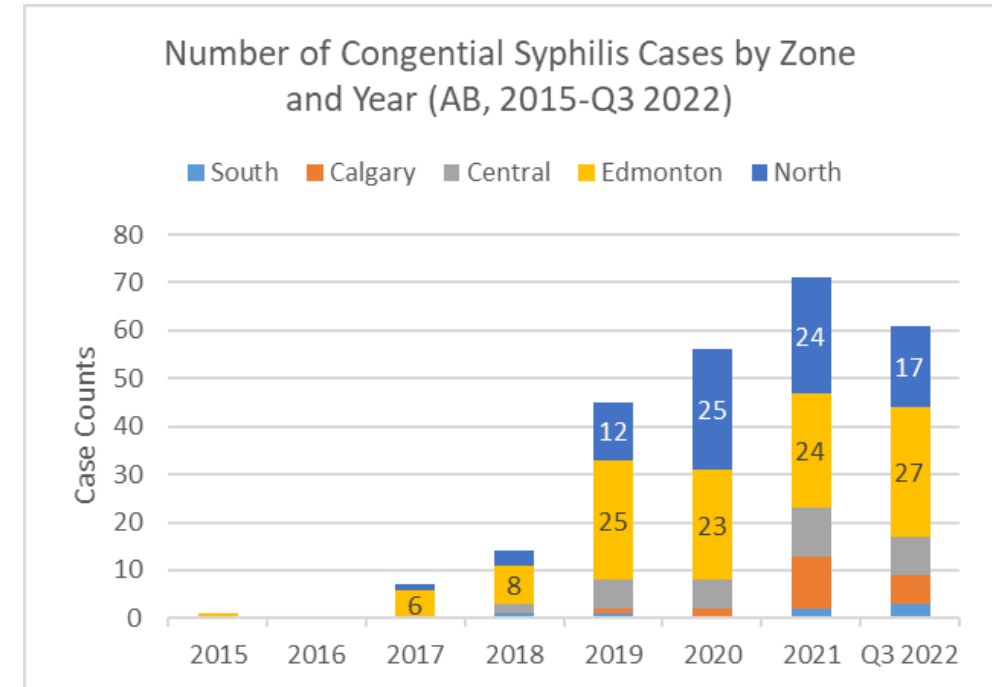
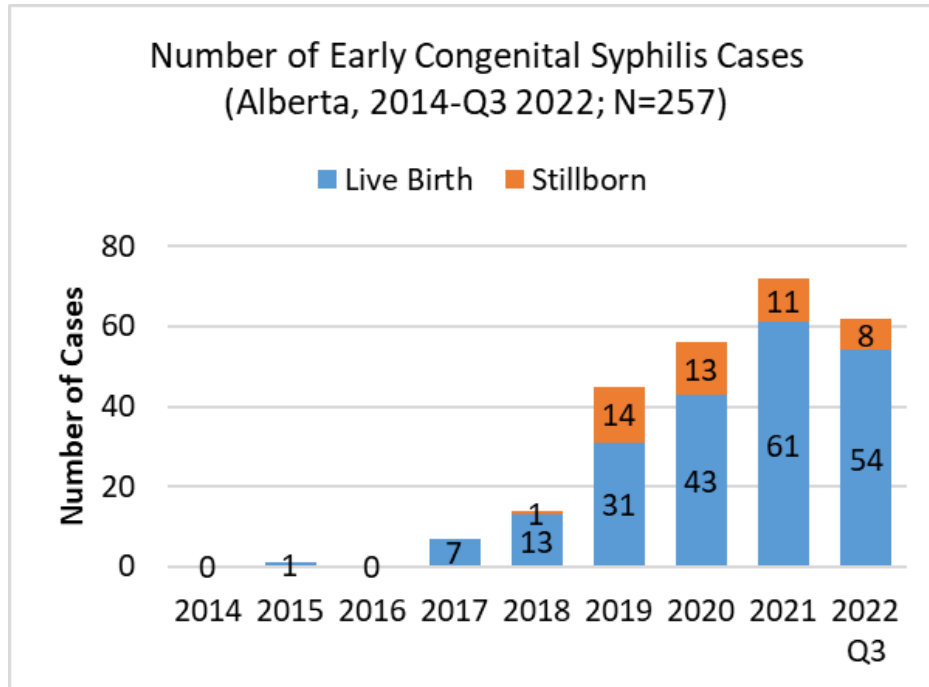


Congenital syphilis can cause serious effects on a baby:

Miscarriage	Premature birth or low birth weight	Deformities of the bones and organs	Infection of the brain
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Congenital Syphilis



Over 250 infants have been diagnosed with congenital syphilis since the outbreak began in 2015. ~20% of cases resulted in **infant deaths**. The expected number of cases is zero.

In 2021, the Edmonton and North Zones reported **70%** of provincial cases with 24 cases each.

Preventing Congenital Syphilis

Alberta

Prenatal Screening Guidelines

for Select Communicable Diseases

Screening Targets

Overall: No cases of congenital syphilis will occur in any given year.

All pregnant women should be screened

- in first trimester,
- throughout pregnancy if ongoing risk, and
- at delivery

Infants born to patients with infectious syphilis in AB between 2017-2020, were more likely to have congenital syphilis when...

- Patients were treated <28 days before delivery (AOR 86.1, 95% CI 15.9-466.5).
- Patients were screened < 28 days before delivery (AOR 8.1, 95%CI 1.4-47.8)
- Patients were screened in 3rd trimester (AOR 8.4, 95%CI 2.9-24.6)

Preventing Congenital Syphilis

Long acting penicillin G benzathine 2.4 million units (Bicillin®) - 2 injections of 1.2 million units IM in a single session administered in the ventrogluteal site.

Warning:

Short acting penicillin G IM injection is not interchangeable with Bicillin®.



Alberta Treatment Guidelines for Sexually Transmitted Infections (STI) in Adolescents and Adults 2018

Pregnant Women

Primary, Secondary, Early Latent
Long-acting benzathine penicillin G 2.4 mu
(Bicillin L-A) IM weekly for 2 doses (C-III)

Late Latent
Long-acting benzathine penicillin G 2.4 mu
(Bicillin L-A) IM weekly for 3 consecutive
weeks (A-II)

Maternal Factors for Congenital Syphilis

- Women infected with syphilis who gave birth between 2017-2019 in Alberta; N=182.
 - ~ ⅔ self-identified as Indigenous
 - ~ ½ from a neighborhood income in lowest quintile.
 - ~ 20% reported injection drug use.
 - ~ 10% reported exchange of goods for sex.
- 75% had a healthcare visit but only 40% had prenatal syphilis screening in first trimester.
- 35% delivered a newborn with congenital syphilis (CS).
- Appropriately timed treatment most important for preventing CS.

Round et al. Examination of Care Milestones for Preventing Syphilis Transmission among Syphilis-Infected Pregnant Women in Alberta, Canada from 2017-2019. STD 2022.

Risk factors for maternal and congenital syphilis in Canada[†]



Access to and use of prenatal care

Inadequate or none



Substance use

Alcohol, tobacco and methamphetamines



Socioeconomic status

Lower income



Geography

Rural and remote residence



Stigma

Historical trauma
Discrimination in healthcare

PHAC Infographic, Syphilis in Women and Congenital Syphilis in Canada, 2019.

Incentive Testing and Treatment for Sexually Transmitted Blood-Borne Infections in Hard to Reach Populations

Poster #P015

STI & HIV World Congress Joint Meeting of the 23rd ISSTD & 20TH IUSTI, Vancouver, British Columbia, July 14-17, 2019

Clients offered \$10 gift cards for visit by **outreach** team.

Reduced stigma and found high STI positivity rates.

2/3 of clients returned for results.

Table 1: STBBI Positivity Rate by Gender (Edmonton, Alberta, Oct 2018 to Feb 2019)

Positive/Total Tested (%)	Women	Men	Total	P-Value
Chlamydia	17/110 (15.5)	9/163 (5.5)	26/273 (9.5)	0.02
Gonorrhea	7/110 (6.4)	4/163 (2.5)	11/273 (4.0)	0.21
Syphilis	17/120 (14.2)	17/195 (8.7)	34/315 (10.8)	0.20
HIV	0/118	0/190	0/308	-
Hepatitis C	6/113 (5.3)	9/165 (3.1)	15/278 (5.4)	1.00

Introduction of STBBI Opt-Out Testing in a Short-Term Correctional Facility in Alberta, Canada



UNIVERSITY OF ALBERTA
FACULTY OF MEDICINE & DENTISTRY
Division of Infectious Diseases

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Poster #454

STI & HIV World Congress Joint Meeting of the 23rd ISSTD & 20TH IUSTI, Vancouver, British Columbia, July 14-17, 2019

Universal offer of STBBI testing on admission.

1/3 of clients agreed to testing.

Reduced stigma and found high STI positivity rates.

Table 1: Testing Outcomes for STBBI Opt-Out Screening at Time of Admission to Short-term Correctional Facility (Edmonton, Alberta, March to September 2018)				
Positive/Total Tested (%)	Women	Men	Total	P-Value
Chlamydia	31/119 (26.1)	52/343 (15.2)	83/462 (18.0)	0.008
Gonorrhea	26/119 (21.8)	32/343 (9.3)	58/462 (12.6)	<0.001
Syphilis	30/122 (24.6)	29/342 (8.5)	49/464 (12.7)	<0.001
HIV	1/124 (0.8)	0/352 (0.0)	1/476 (0.2)	0.261
Hepatitis C	5/94 (5.3)	9/252 (3.6)	14/346 (4.0)	0.404



Prospective health setting evaluation of two Point of care tests for Syphilis and HIV (PoSH Study) for the diagnosis and treatment of syphilis during an infectious syphilis outbreak in Canada

Abstract No: EPC336

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Objectives

1. To assess the test performance of two dual POCT for HIV and syphilis from fingerstick whole blood specimens compared to serology in a variety of clinical settings.
2. To assess linkages to care for HIV and same-day treatment for syphilis.
3. To evaluate patient and test administrator experience with the POCT.

HIV: Sensitivity (100%) and specificity (99.6%) were high for both POCT.

Syphilis: Sensitivity increased with acute infection (RPR ≥ 8 dil; 97.9%-98.3%). Specificity 99.5%-99.8%.

86% of syphilis cases were treated same-day and all HIV cases (re-) linked to care.

Participants (98.5%) would have another POCT in the future. Administrators noted the immediacy of results led to *immediate treatment, reducing those lost to follow up.*

Considerations

Diagnosis and staging of syphilis is complex.



Interpretation of results should be done in consultation with an STI specialist and STI Centralized Services to avoid unnecessary treatment and re-treatment.



Several factors need to be considered to determine appropriate treatment and staging:

Physical assessment

Laboratory results

Past and current medical
and sexual history

Sexual partner
information

Resources

Ahs.ca/syphilis

- Alberta Prenatal Screening Guidelines for Select Communicable Diseases
- Alberta Treatment Guidelines for STI
- Syphilis Management in Obstetrical Units
- Patient Information
- STI Centralized Services: 1-855-945-6700, option 4

Syphilis Outbreak

Information for Health Professionals

Overview

- The number of infectious syphilis and gonorrhea cases have increased dramatically in Alberta since 2014.
- Gonorrhea cases have more than doubled since 2014: nearly 5,000 cases in 2020 versus 1,900 cases in 2014.
- Over 2,500 infectious syphilis cases have been reported in 2020 compared to 160 cases in 2014.
- Since 2014, there have been over 170 cases of congenital syphilis, resulting in more than 35 still births.

Deskside Reference

Infectious Syphilis Management Tool available for physicians. Download and print a copy.

[More >](#)

Quick Reference

Resources



Thank you!