CÁTÍE Webinar Series (Part 1)
Gay Men’s Health & HIV Prevention in Canada

The Rising Tide of Syphilis: Update on Syphilis among Gay, Bisexual, Two-Spirit and other MSM in Canada

Wednesday, February 22nd, 2012, 2-3:30pm EST

The webinar will commence shortly.

All participants will be muted until the question period.
Webinar Agenda

• Review of the webinar technology

• Project Background

• **Syphilis: What goes around comes around** presented by Dr. Paul MacPherson, Associate Professor of Medicine, Division of Infectious Diseases, Ottawa Hospital, General Campus, University of Ottawa

• **Syphilis Epidemiology & Responses**, presented by Marc-André LeBlanc, co-founder of the International Rectal Microbicide Advocates (IRMA)

• Questions & Discussion
TIPS

• If your screen freezes or the powerpoint does not seem to be progressing, re-load the web page or re-start your browser.

• If you are using a speakerphone, mute the microphone on your phone to improve sound quality.

Dial 00 for operator assistance if having any technical issues.
Project Background

- **March 2010:** Pan-Canadian Deliberative Dialogue titled “New Directions in Gay Men’s Health & HIV Prevention in Canada”
- **2011:** Initiation of a one-year Gay Men’s Sexual Health Project
  - **Formation of a National Advisory Group (NAG)**
- **January 2012:** National Webinar commences

CATIE
Polls!

01 - What province or territory are you currently in?
- Alberta
- British Columbia
- Manitoba
- New Brunswick
- Newfoundland and Labrador
- Northwest Territories
- Nova Scotia
- Nunavut
- Ontario
- Prince Edward Island
- Québec

- January 2012: National Webinar Series commences

CATIE
Polls!

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The Rising Tide of Syphilis: Update on Syphilis among Gay, Bisexual, Two-Spirit and other MSM in Canada

English Only: Friday, February 17th, 2012, 2-3:30pm EST

Syphilis rates have continued to rise among gay/bi/MSM men across Canada, prompting a need for increased awareness of syphilis testing, treatment and epidemiology.

Join Dr. Paul MacPherson and Marc-André LeBlanc as they review the most current syphilis epidemiology in some of Canada’s major urban centres and provide important clinical tips & information for service providers and outreach workers.

Presenters:

Dr. Paul MacPherson is an Associate Professor of Medicine, a specialist in the Division of Infectious Diseases at the Ottawa Hospital General Campus, and a Staff Scientist at the Ottawa Hospital Research Institute.

Marc-André LeBlanc has worked in the community-based HIV/AIDS movement for 19 years at the local, national and international levels. He is a co-founder of International Rectal Microbicide Advocates (IRMA), serves as secretary on their steering committee, has authored two reports on the global state of rectal microbicide efforts, and leads IRMA's global efforts to ensure the safety of sexual lubricants.
Syphilis
What goes around comes around

Paul MacPherson PhD, MD, FRCPC
Associate Professor of Medicine
Division of Infectious Diseases
Ottawa Hospital, General Campus
University of Ottawa
Outline

1. Brief Epidemiologic Trends
2. Transmission
3. Clinical Manifestations
4. Diagnostic Tests
5. Treatment
6. HIV and Syphilis
Historical Overview

- 1906 August von Wassermann develops a serologic test for syphilis

- 1943 John Mahoney uses penicillin to treat syphilis
Syphilis is back

Increased rates of infectious syphilis noted across North America and Europe beginning in 1999 to 2001.
Rate of infectious syphilis have increased 10-fold from 1997 to 2008.

Rates have increased 18-fold among men.
Treponema pallidum

- Spirochete
- Severely limited biosynthetic capabilities
- Cannot survive outside the host
- Cannot be cultured
Transmission
Transmission is by close physical contact
Transmission

Transmission occurs through contact with infected lesions

- Can penetrate intact mucous membranes
- Can enter through abraded skin
- Transmission can occur via anal sex, vaginal sex, oral sex, kissing
- Transmission rate: 60-80%
The Stages of Syphilis
The Stages of Syphilis

1. Incubation
2. Primary
3. Secondary
4. Early latent
5. Late latent
6. Tertiary
Primary Syphilis
Primary Syphilis
Primary Syphilis
Secondary Syphilis
Secondary Syphilis
Secondary Syphilis
Secondary Syphilis
Secondary Syphilis

*Fig. 17. Fundus photo of patient with syphilis.*
Early Latent Syphilis
- Within one year of secondary
- Secondary symptoms may recur

Late Latent Syphilis
- After 1 year of infection
- No symptoms
- Non-infectious
Neurosyphilis
Neurosyphilis

Early symptomatic
1. Meningitis
   - Usually during secondary disease
2. Meningovascular
   - Stroke

Late Symptomatic or Tertiary
1. Dementia
2. Tabes Dorsalis
Diagnosis
Diagnosis

A syphilis test cannot be interpreted on its own.

The syphilis test must always be interpreted in a clinical context by knowing the patient.
Syphilis Tests

1. Screening: CMIA

2. Confirmatory
   - TP-PA or FTA-ABS

3. RPR titre
   - 1:1, 1:2, 1:4, 1:8, 1:16, 1:32…
   - Used to monitor response to treatment
Syphilis Test

An example:

• CMIA: Reactive
• TP-PA: Nonreactive
• RPR: Nonreactive

What is your interpretation?
Syphilis Test

An example:
- CMIA: Reactive
- TP-PA: Nonreactive
- RPR: Nonreactive

- False positive CMIA
- Very early infection

Should repeat the test
Syphilis Test

An example:

- CMIA: Reactive
- TP-PA: Reactive
- RPR: 1:4

What is your interpretation?
Syphilis Test

An example:

- CMIA: Reactive
- TP-PA: Reactive
- RPR: 1:4

- Primary syphilis
- Secondary syphilis
- Early latent
- Late latent
- Tertiary
- Treated
Syphilis Test

An example:

- CMIA: Reactive
- TP-PA: Reactive
- RPR: Nonreactive

What is your interpretation?
Syphilis Test

An example:

- CMIA: Reactive
- TP-PA: Reactive
- RPR: Nonreactive

- Early primary
- Early latent
- Late latent
- Tertiary
- Treated
Treatment
Treatment

Primary and Secondary

First Line: Benzathine Penicillin
2.4 million units IM, one dose

Second Line: Doxy 100 mg BID x 14 days
Ceftriaxone 1g IV or IM x 8-10 days
Treatment

Late Latent and Tertiary disease

First Line:
- Benzathine Penicillin 2.4 million units IM weekly for three weeks

Second Line:
- Doxycycline 100 mg BID x 28 days
Treatment

Neurosyphilis

First Line:
Intravenous Penicillin 4 million units every 4 hours for 10-14 days

Second Line:
Intravenous Ceftriaxone 2g daily for 10-14 days
Treatment

Failure of first line therapy: 15-20%

Failures are defined by:

- Recurrence of symptoms
- The RPR titer does not decline

Follow up with repeat syphilis testing is essential.
Syphilis and HIV
HIV and Syphilis

1. HIV and syphilis are mutually synergistic in transmission.

2. Does HIV affect the clinical presentation of syphilis?

3. Can HIV affect the response to therapy?
Does HIV affect the clinical presentation of syphilis?  **Answer: NO**

1. Rolfs et al. NEJM, 1997
   - “differed little in clinical presentation”
   - 25% and 26% presented with chancre
   - 52% HIV+ had secondary symptoms
   - 45% HIV- had secondary symptoms

2. Gourevitch et al. Annals, 1993
   - “No unusual or fulminant manifestations of early syphilis or neurosyphilis were noted among HIV seropositive cases.”
Does HIV affect the clinical presentation of syphilis? **Answer: YES**

   - HIV+ were more likely to have secondary symptoms (53% versus 33%)
   - More likely to have persistent chancres (43% versus 15%)

2. Rolfs et al. NEJM, 1997
   - More likely to have multiple chancres

3. Lynn and Lightman. The Lancet, 2004
   - more likely to have symptomless primary disease
Stage of HIV disease effects syphilis presentation

Hutchison et al., Ann Int Med, 2004

Percentage of pts presenting with secondary syphilis:

- HIV(-): 33%
- HIV(+) with CD4 > 500: 37% (n=25)
- HIV(+) with CD4 < 500: 68% (n=27)
- HIV(+) with CD4 < 200: 100% (n=4)
Does HIV increase the risk of neurosyphilis?

Marra et al. J Inf Dis, Feb 2004
- 21.5% HIV(+) had neurosyphilis
- 16.5% HIV(-) had neurosyphilis

Rolfs et al. NEJM, 1997
- 16% HIV(+) had neurosyphilis
- 7% HIV(-) had neurosyphilis
Does HIV increase the risk of neurosyphilis?

For HIV+ individuals:

- RPR > 1:32 confers a 6-fold increased risk of neurosyphilis

- CD4 count < 350 conferred a 3-fold increased risk of neurosyphilis

- RPR > 1: 32 and CD4 < 350: 18-fold risk

Marra et al. J Inf Dis, Feb 2004
Does HIV affect the response to therapy?

– “Infection with HIV did not alter response to treatment.”

– Response to treatment “did not differ between patients with or without HIV infection.”

Rolfs, et al. NEJM, 1997
– Clinically defined treatment failures did not differ with HIV status
– No added benefit to enhanced treatment
Neurosyphilis

- HIV+ patients with CD4 count <200 were 3.7 times less likely to normalize CSF VDRL compared to HIV+ patients with CD4 count >200.

Marra et al. Clin Infect Dis, Apr 2004
1. There is sufficient data to suspect HIV+ patients are at greater risk of developing neurosyphilis.

2. There are no data to address whether HIV+ patients with infectious syphilis require more intensive therapy. What would constitute “intensified” treatment is not established.

CDC and Health Canada recommend the same treatment irrespective of HIV status.
Some take-home points

- Syphilis is easily transmitted
- Syphilis is for the most part a clinical diagnosis.
- Treatment failures are common. Follow-up and repeat serologic testing is essential.
Overview

- Epidemiological situation in Canada
  - Overview of a few provinces & territories
- Responses to syphilis outbreaks
  - Public health directives
  - Epi, surveillance & studies
  - Outreach, testing and awareness campaigns
- Further reading
EPIDEMIOLOGICAL SITUATION IN CANADA
Reported cases of infectious syphilis. Canada, 1993-2009

![Graph showing the increase in reported cases of infectious syphilis in Canada from 1993 to 2009. The number of cases increases significantly from the early 2000s onwards.](image-url)
<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Number of Cases</th>
<th>Rate per 100,000³</th>
<th>Rate Change (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Canada</strong></td>
<td>191</td>
<td>1,394</td>
<td>0.6</td>
</tr>
<tr>
<td><strong>BC</strong></td>
<td>129</td>
<td>235</td>
<td>3.2</td>
</tr>
<tr>
<td><strong>AB</strong></td>
<td>2</td>
<td>244</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>SK</strong></td>
<td>1</td>
<td>12</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>MB</strong></td>
<td>0</td>
<td>2</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>ON</strong></td>
<td>54</td>
<td>444</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>QC</strong></td>
<td>4</td>
<td>369</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>NB</strong></td>
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<td>0.0</td>
</tr>
<tr>
<td><strong>NS</strong></td>
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<td>0</td>
<td>8</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>YT</strong></td>
<td>0</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>NT</strong></td>
<td>0</td>
<td>53</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>NU²</strong></td>
<td>N/A</td>
<td>0</td>
<td>N/A</td>
</tr>
</tbody>
</table>

1. Data for the Northwest Territories (NU) for 1999 is unavailable. NU² data for 2008 is not available.
Rates of syphilis by gender. Canada, 1993-2009
Table 4: Male-to-Female Ratio of Reported Rates of Infectious Syphilis by Province/Territory, 2008, Canada

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Male-to-Female Rate Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Canada</em></td>
<td>6.4 : 1.0</td>
</tr>
<tr>
<td>BC</td>
<td>13.9 : 1.0</td>
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<tr>
<td>AB</td>
<td>1.4 : 1.0</td>
</tr>
<tr>
<td>SK</td>
<td>2.0 : 1.0</td>
</tr>
<tr>
<td>MB</td>
<td>3.4 : 1.0</td>
</tr>
<tr>
<td>ON</td>
<td>13.6 : 1.0</td>
</tr>
<tr>
<td>QC</td>
<td>45.7 : 1.0</td>
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<tr>
<td>NB</td>
<td>1.8 : 1.0</td>
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<tr>
<td>NS</td>
<td>N/A</td>
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<tr>
<td>PE</td>
<td>N/A</td>
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<td>NL</td>
<td>N/A</td>
</tr>
<tr>
<td>YT</td>
<td>N/A</td>
</tr>
<tr>
<td>NT</td>
<td>1.3 : 1.0</td>
</tr>
<tr>
<td>NU</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Syphilis in Canada

- Large increase 2000-2011
  - Highest numbers: ON, QC, BC, AB
  - Highest rates: NWT, AB, BC, QC
  - Highest rate change: AB, QC, SK, ON, NS

- Disproportionate rates among males
  - Mostly gay men and other MSM
  - Many HIV-positive

- Older cohort than other STIs
  - >30 years old = almost ¾ of cases
British Columbia

Reported Syphilis Cases (Males) 1993-2008

Rate per 100,000

Year

British Columbia in 2010

- Majority of cases are among men
  - Gay men/MSM: 2/3 to ¾ of cases
  - HIV+ gay men/MSM:
    - 48.7% of cases among gay men/MSM
    - 36.1% of all BC cases
Alberta

Number and Crude Rate (per 100,000) of Infectious Syphilis Cases in Alberta, 2000 - 2010 (n=1,471)

<table>
<thead>
<tr>
<th>Year</th>
<th>Cases</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>15</td>
<td>0.5</td>
</tr>
<tr>
<td>2001</td>
<td>21</td>
<td>0.7</td>
</tr>
<tr>
<td>2002</td>
<td>16</td>
<td>0.5</td>
</tr>
<tr>
<td>2003</td>
<td>43</td>
<td>1.4</td>
</tr>
<tr>
<td>2004</td>
<td>77</td>
<td>2.4</td>
</tr>
<tr>
<td>2005</td>
<td>146</td>
<td>4.5</td>
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<tr>
<td>2006</td>
<td>217</td>
<td>6.6</td>
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<tr>
<td>2007</td>
<td>246</td>
<td>7.2</td>
</tr>
<tr>
<td>2008</td>
<td>243</td>
<td>7.0</td>
</tr>
<tr>
<td>2009</td>
<td>279</td>
<td>7.7</td>
</tr>
<tr>
<td>2010</td>
<td>168</td>
<td>4.5</td>
</tr>
</tbody>
</table>
Alberta

- More cases among men than women
  - The ratio is much closer to being equal in AB than in most other provinces in 2008
  - But by 2010, men had rates twice as high as women
- Ethnicity:
  - 55.4% Caucasian
  - 30.6% Aboriginal
- “Sexual preference”
  - 27-33% of cases among “homosexuals or bisexuals”
Northwest Territories

- 1993-2007: 1 case
- 2008: 53 cases (highest rate in Canada)
- 2009: 41 cases

- Outbreak among injection drug users and heterosexuals
Infectious syphilis cases by year and sex in Ontario, 2001-2010

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted May 2, 2011
Ontario

• 94.5% of cases among males
  • 84-86% of these: gay men/MSM

• Younger men: Up, Down
• Older men: Stable, Up, Down
• Women: Down, Up, Down
Ontario

- ¾ of ON cases from Toronto/Ottawa—but proportion going down

- 40-44% of syphilis cases are HIV-syphilis co-infections (2008-2010)

- 86% of co-infected syphilis cases in 2010 had an HIV diagnosis in the prior year

- 25% of cases in 2010 were repeat infections
Québec

Syphilis infectieuse, taux brut d’incidence de cas déclarés, Québec, 1990 à 2009

Québec

- 539 cases in 2010; 94.8% among men
- 96% of the men in 2004-2005 were gay/MSM
- About half in each age range:
  - 20-39 years old, 40-64 years old
- 66% of cases in Montreal
New Brunswick

- 2000-2006: 1-2 cases per year
- 2010: almost 40 cases
- Mostly men, many are gay/MSM
Nova Scotia

- 2008: 2 cases
- 2009: 18 cases
- 2010: 12 cases
- 2011: 34 cases
- 2012: 9 cases in first 6 weeks...

- 100% men, 100% gay/MSM

- Most affected age groups:
  - 20-25 years old
  - then 40-54 years old
RESPONSES TO SYPHILIS OUTBREAKS
Responses

• Public health directives
• Epidemiology, surveillance and sentinel studies
• Outreach, testing and awareness campaigns
Outreach, testing, awareness: BC

- BCCDC urges syphilis testing with all STI check-ups
- Centralized case follow-up
- HIM: integrated STI screening and health
Outreach, testing, awareness: Alberta

- http://www.lookwhatsback.com/

SYPHILIS
IN ALBERTA

SYPHILIS FACTS

Syphilis is making a comeback. Rates of transmission of syphilis in Alberta had fallen so low that this easily preventable infection almost dropped off the radar. Now Syphilis is back and since 2002 the number of cases in our province has been increasing dramatically and consistently. In 2008 alone, over 200 cases of infectious Syphilis were confirmed in Alberta. Some of the highest rates of infection are occurring right here in Calgary.

Anyone can get Syphilis. This Sexually Transmitted Infection (STI) is easily passed from one person to another during anal, vaginal or oral sex. In Alberta:

- 60% of Syphilis infections occur in males
- 84% of cases report their sexual preference as heterosexual
- The highest rate of infections occur in those 20 – 24 years of age followed closely by those 25 – 29 years of age.

Although most cases are caught in the early stages, untreated Syphilis can cause long-term health problems such as mental illness, blindness, deafness, heart disease or even death. Having an active case of Syphilis can also increase your risk of becoming infected other STIs such as HIV.

Syphilis can also be transmitted from a mother to a baby in the womb and this is called congenital Syphilis. Between 2005 and 2007, 5 babies in Alberta died due to congenital Syphilis. In 2008, 2 more cases of congenital Syphilis were reported.
Outreach, testing, awareness: Alberta

- [http://www.dontyougetit.ca](http://www.dontyougetit.ca)
Outreach, testing, awareness: Alberta

- [www.plentyofsyph.com](http://www.plentyofsyph.com)
Outreach, testing, awareness: ON
Outreach, testing, awareness: ON

- Syphilis Working Group created by AIDS Bureau
- “Get on It” testing blitz in TO/Ottawa:
  - HIV focus, but includes syphilis
Outreach, testing, awareness: QC

- Mieux vaut y voir (Don’t Turn a Blind eye)
Outreach, testing, awareness: QC

- Increased testing by public health and RÉZO
- New campaign?
Outreach, testing, awareness:

NB

SYphilis outbreak in New Brunswick

Wear a condom.
Get tested.

Outbreak among men in New Brunswick

Syphilis can kill.
Wear a condom.
Get tested.

Call your family doctor
or visit gnb.ca/WhoKnew

SYPHILIS

Éclosion chez les hommes au Nouveau-Brunswick

La syphilis peut vous tuer.
Portez un condom.
Faites-vous tester.

Consultez votre médecin de famille
ou visitez gnb.ca/Quisait
Outreach, testing, awareness: NS

- PH sent a reminder to all physicians
- PH outreach of popular websites
- Syphilis Strategy Working Group
  - (2 campaigns; one for each age group?)

- Community Sexual Health Centre provides testing, recommended along with HIV and hepatitis testing
Outreach, testing, awareness: Tri-city: Ottawa, Montreal, Toronto
Outreach, testing, awareness: National
Summary

- Syphilis rates are generally on the rise

- Mostly among men
  - Mostly gay/MSM
  - Many HIV-positive

- Generally older than for other STIs

- BUT... know your epidemic!

- Responses include increased testing, outreach and awareness-raising
FURTHER READING AND REFERENCES
Further Reading and References (1)

Epidemiology and Surveillance - Canada

BCCDC. HIV and Sexually Transmitted Infections. 2010.


Further Reading and References (2)

Portrait des infections transmissibles sexuellement et par le sang (ITSS) au Québec. Année 2010 (et projection 2011).


CATIE. Advertising on the Internet. TIPS & LESSONS FROM CATIE’S ON-LINE SYPHILIS CAMPAIGN. October 2011.

ACT: http://www.actoronto.org/syphilis
QC: http://www.youtube.com/watch?v=8d_SYjMbQsc
NB: http://www.youtube.com/watch?v=N7DRqcDPjWg
CATIE: www.catie.ca/eng/syphilis
Questions / Comments

To UNMUTE yourself, dial #6
Thank You!