Syphilis outbreak in Labrador-Grenfell Zone 2024

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Slides and content adapted from Dr. Nazlee Ogunyemi, Dr. Rohit Vijh, BCCDC, and Public Health Agency of Canada

The contents of these slides are accurate as possible but should not be used as the source for clinical information. Please reference local guidelines for clinical guidance.

Land acknowledgment

Learning objectives

- Understand the epidemiology of the current syphilis outbreak.
- Recognize the role of public health and healthcare providers in working collaboratively to control the outbreak.
- Apply evidence-based practices for diagnosing and treating syphilis.
- Enhance patient care through person-centered communication.

Agenda

- Overview of syphilis in our region
- Understanding the rapid rise in syphilis cases
- Actions we can take in health services to control syphilis
- Identify, diagnose, and treat syphilis effectively in your practice
  - Identifying syphilis
  - Interpreting syphilis serology
  - Treating syphilis
  - Syphilis in pregnancy and congenital syphilis
- Conclusion and question period

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A syphilis outbreak was declared for LGZ on September 26, 2024

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Cases of Syphilis on the Rise in Labrador-Grenfell Zone

Public Service Announcements | Labrador-Grenfell

Posted: September 26, 2024

Newfoundland and Labrador (NL) Health Services is advising the public of an outbreak of syphilis the Labrador-Grenfell Zone due to a significant increase in cases across the region over the last y Cases of syphilis have been on the rise in Canada and around the globe. As a result, we are remin the public of the importance of regular sexually transmitted and blood-borne infection (STBBI) te

NL Health Services

Memorandum

To: All Health Care Providers, Labrador Grenfell Zone
From: NLHS Medical Officers of Health
Date: September 24, 2024
Re: Syphilis Outbreak

There has been a significant increase in cases of syphilis in the Labrador-Grenfell zone in 2024, with 19 cases year-to-date. Between 2013-2023, there had been a total of 16 cases, with 6 in 2022 and 6 in 2023. Due to this surge, Newfoundland and Labrador (NL) Health Services is officially declaring a syphilis outbreak in the Labrador-Grenfell zone.

Along with the updated STBBI screening recommendations outlined in the CMOH's memo dated September 24, 2024, NLHS aims to inform healthcare providers about the current situation, the actions being taken in addition to our existing STBBI work, and the steps healthcare providers can implement to help control the outbreak.

Aetiology

- Syphilis is a complex systemic disease caused by infection with the spirochete bacterium *Treponema pallidum*, subspecies *pallidum*.
  - Other non-venereal treponemal infections, such as bejel, yaws (certain African countries) and pinta (Central and South America), are found in other countries.

Image from giantmicrobes.com/us/products/pox.html

Syphilis is more complicated to deal with than some other sexually transmitted and blood-borne infections (STBBIs)

1. Challenges in symptoms

- Many people with syphilis show no symptoms.
- Long incubation period (time between infection and symptom onset).

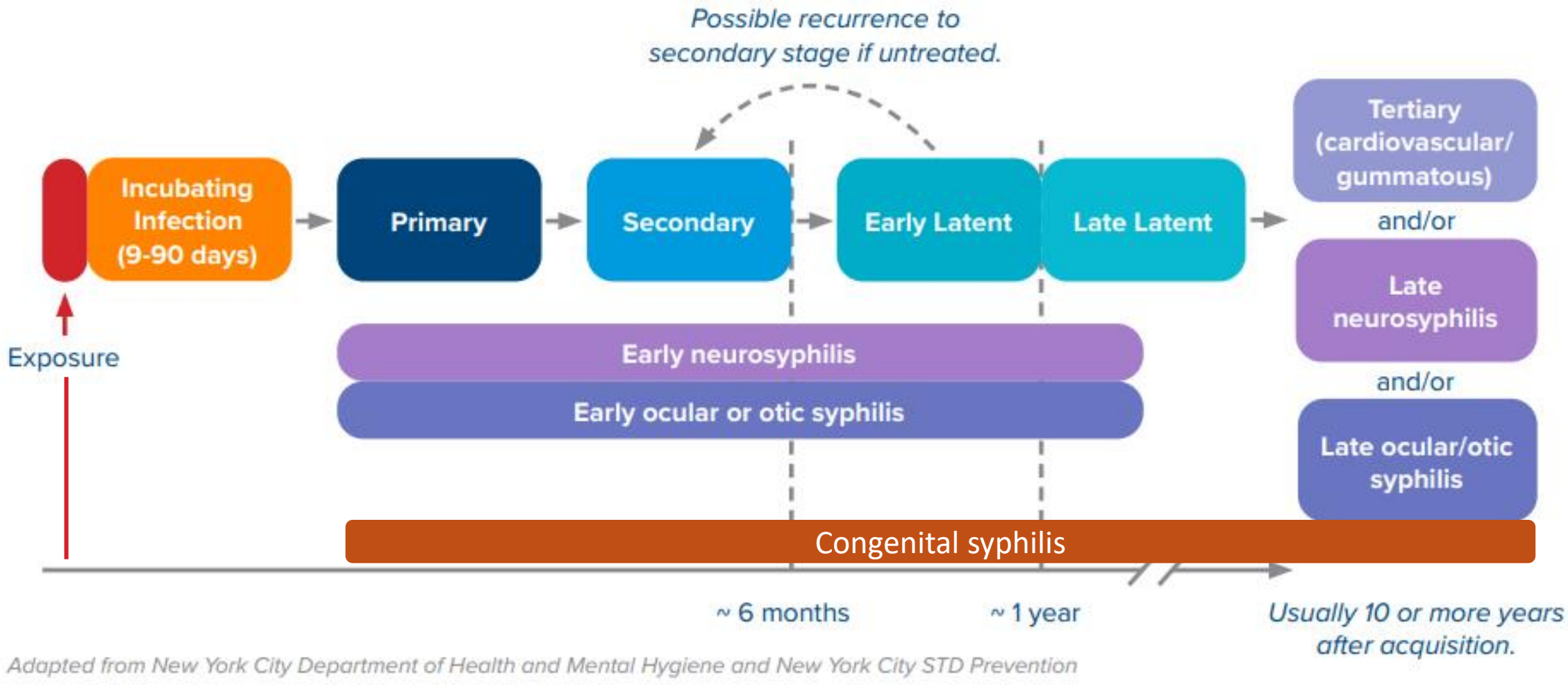
2. Testing requires interpreting results

- Diagnosis involves a blood test (serology).
- Three different test results must be carefully interpreted together with clinical findings to confirm the stage of syphilis.

3. Diagnosing syphilis requires staging as well

- Staging determines the treatment plan (e.g., number of doses).
- Staging also guides contact tracing to identify and treat others at risk.

Syphilis can present at various stages, each with distinct periods of infectiousness



*Early latent syphilis is considered infectious because of the 25% chance of relapse to the secondary stage; graphic from PHSA/BCCDC Syphilis course

Syphilis can be very infectious and transmit through skin-to-skin contact and blood

Mode of transmission

Syphilis is transmitted by direct contact with an infectious lesion, through vertical transmission during pregnancy, and through blood-to-blood contact when sharing equipment for using drugs.

The primary mode of syphilis transmission is by vaginal, anal and oral sexual contact.

Risk of transmission

51% to 64%

Estimated risk of transmission per partner in primary, secondary and early latent stages (infectious stages)

70% to 100%

Risk of transmission to the fetus is in untreated pregnant people with primary or secondary syphilis and 40% with early latent syphilis

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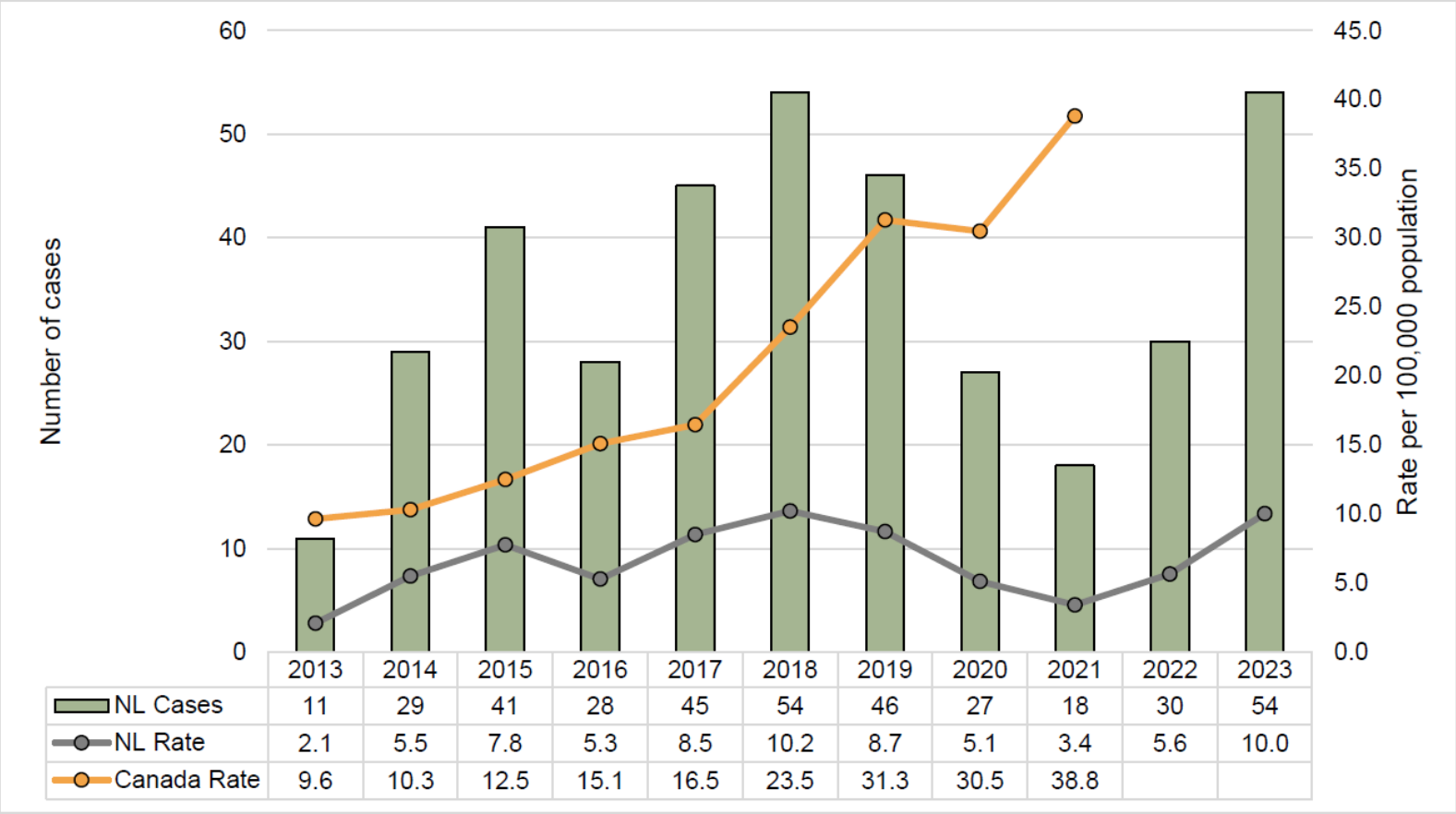
Syphilis is on the rise globally, across Canada and in Newfoundland and Labrador…



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
NL Cases	11	29	41	28	45	54	46	27	18	30	54
NL Rate	2.1	5.5	7.8	5.3	8.5	10.2	8.7	5.1	3.4	5.6	10.0
Canada Rate	9.6	10.3	12.5	15.1	16.5	23.5	31.3	30.5	38.8		

- Rates have increased in both males and females
- 25–39-year-olds have experienced the highest rates

Internal data

… specifically in the Labrador-Grenfell Zone…

16

total cases of syphilis between **2013-2023**

26

cases in **2024** year-to-date

Additional epidemiologic data: While the majority of cases have been reported among men in their 20s and 40s, we are seeing increases across all age groups and sexes including in pregnant individuals.

… and we are likely missing cases and need to perform more syphilis tests

16

total cases of syphilis between **2013-2023**

26

cases in **2024** year-to-date

0.23%

percent of syphilis tests that were positive between **2014-2023*#**

2.07%

percent of syphilis tests that are newly positive in 2024#

*percent positivity data are not available for 2013

#higher test positivity rate is a crude estimate of undertesting that is subject to selection bias such as in targeted testing campaigns, variations in testing access and practices, and changes in population characteristics

The rise of syphilis is multifactorial, but likely revolves around

Decreased condom use

Condom use decreases but does not eliminate the risk of transmission

NL Health Services is:

- Increasing education around condom use for STI prevention
- Increasing availability of condoms

Access to testing and treatment

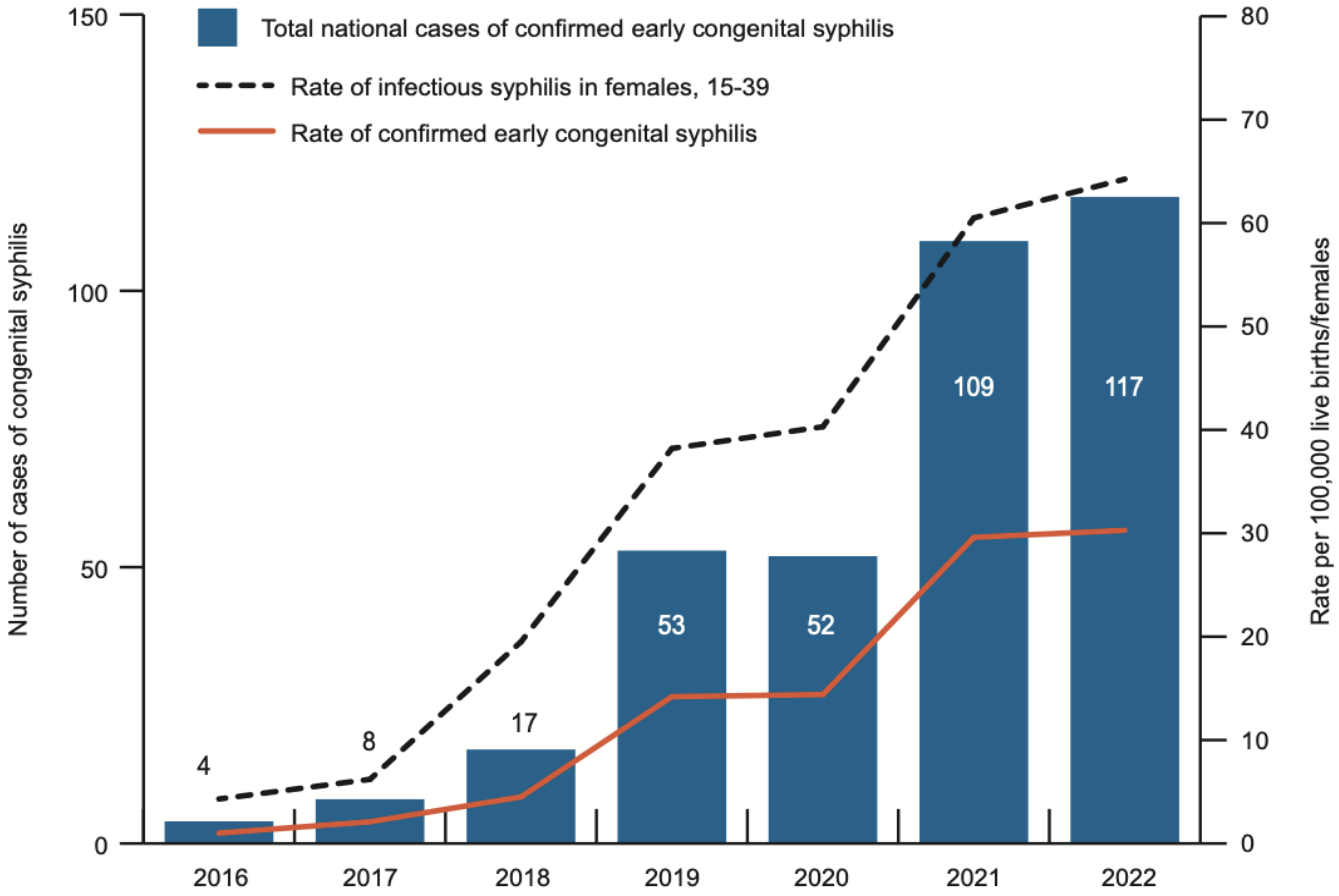
- Reduced routine testing for STIs during pandemic
- We may only be diagnosing cases that had gone undetected during the pandemic
- NLHS is working to increase test availability and promoting testing to the public and to HCPs

Substance use during sexual activity

- Also known as chemsex or party n’ play
- Substances impair judgment which can lead to riskier behaviours such as having multiple sexual partners and unprotected sex
- NLHS is distributing educational materials on safer sex

Rates of congenital syphilis are also increasing across the country

Number of reported cases and rates of confirmed early congenital syphilis and rates among females aged 15-39 years in Canada, from 2016 to 2022



There were **117 cases** of confirmed early congenital syphilis** reported in 2022, corresponding to a **rate of 31.7 cases per 100,000 live births**

7% rate increase since 2021

599% rate increase since 2018†

In 2022, there were at least 246 reported cases of congenital syphilis,† which includes confirmed early congenital syphilis, probable early congenital syphilis, syphilitic stillbirth, and unknown-stage congenital syphilis.

PHAC, 2023

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Public health is taking action on four fronts…

Prevent cases

Monitoring Disease

- Improve system capacity and increase timeliness of data to track cases of syphilis in the zone/province

Public Education and Awareness

- Distribution of safer sex supplies to PH offices and through SWAP
- School-based education
- Media releases and interviews

Healthcare Provider Education

- Memos to healthcare providers
- Education sessions

Test

Access to Testing

- Point of care (Syphilis and HIV) testing approval and implementation
- Pop-up testing clinics – partnering with healthcare providers

Testing in Pregnant Patients

- Routine testing of syphilis in 1st and 3rd trimester and potentially at time of delivery
- Chief Medical Officer of Health memo x 24 September 2024
- Healthcare provider education sessions

Ease of Testing for Healthcare Providers

- Working on ways to make it easier for healthcare providers to test for STBBIs
- "Test for One, Test for All"

Treat

Capacity for Healthcare Providers to Manage Cases

- Ensure proper treatment is given to the right people at the right time
- Increased supply of antibiotics in LGZ with ongoing restocking as needed
- Education sessions to HCPs emphasizing importance of reporting syphilis staging and pregnancy status of patients and contacts

Public Health Case and Contact Management

- Improved case and contact management processes to ensure the right people know when they need to get tested and treated

Enabling environments

Partnership with Communities

- Co-develop processes and programs with communities, public health nurses and other healthcare providers

Reduce Stigma around STBBIs

- Normalise conversations around STBBI testing
- Increase awareness around need to test at least annually for STIs in anyone who is sexually active, and not just those at "high risk"

…but we need to work collaboratively with healthcare providers

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- *Normalise conversations around STBBI testing*
- *Increase awareness around need to test at least annually for STIs in anyone who is sexually active, and not just those at "high risk"*

Here's how our healthcare partners can help us get this outbreak under control

Prevent cases

- Provide counselling on safer sex
- Distributing information and resources on safer sex
  - If you need these resources or other safer sex supplies, please call the SWAP program at (709) 897-2125.

see next slide

Test

- **Test for one, test for all** – gonorrhea, chlamydia, syphilis, and HIV in all individuals at risk for STIs, including:
  - Those presenting with any STI symptoms.
  - All sexually active individuals annually.
  - Patients with new or multiple sex partners, every 3-6 months.
  - Pregnant patients, who should be screened in both the 1st and 3rd trimester, and at delivery as indicated based on CMOH memo dated September 24, 2024.

see slides 22+23

Treat

- Complete the Syphilis Case Report form sent by NLHS Public Health.
- Follow treatment guidelines from Public Health Agency of Canada Syphilis Guide or Firstline app's NLCHI guidelines.
- Ensure **two long-acting Penicillin G syringes** are given as a single dose.
- If needed, request long-acting Penicillin G from your zonal public health office.
- Refer pregnant patients to infectious diseases (ID), pediatric ID, and maternal-fetal medicine as needed.

see slide 24

Enabling environments

- Encourage conversations about STI/HIV testing with all sexually active people during routine visits (How to discuss sexual health, substance use and STBBIs.)
- Consider implementing opt-out testing, where the default is a full panel of STI testing unless declined.

Normalise discussing sexual health in your care through three main steps

1. **Create a safe and respectful environment**
   - Use a sex-positive approach (talk with your patients openly and without judgement about their sexuality) and do not assume their sexual practices
   - Focus on building trust and rapport, for example by starting with a casual conversation

   E.g. "Is it okay if I ask you a few questions about your overall health, sexual health and substance use? Some of these questions are very personal. I ask everyone these questions, and I consider them to be very important. You do not have to answer any questions you do not want to."

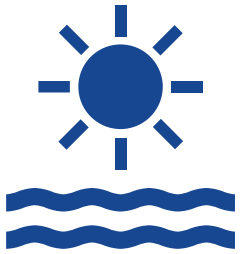
2. **Ask about the 5Ps to discuss sexual health**
   - Practices – E.g. Sexually active? Kinds of sex (oral, vaginal, anal, manual)? Types of sex (insertive, receptive)?
   - Partners – Don't conflate sexual orientation with who their sexual partners are; Number of partners
   - Protection from STBBIs
   - Past history of STBBIs and symptoms
   - Pregnancy – is the patient or any of their sexual partners pregnant?

3. **Wrapping up the discussion**
   - Ask if there's anything they'd like to cover

Please see CPHA Guide for Discussing Sexual Health, Substance Use and STBBIs for more extensive document and guidance

Routine STBBI testing for all sexually active people is critical to stop syphilis from spreading

Opportunity for education and awareness



Detecting infections early and improving outcomes

Preventing congenital syphilis, improving health outcomes, and prevents transmission to others

Breaking chains of infection

And treating contacts to prevent people from getting re-infected, especially pregnant patients

Connecting people to care

Adapted from PHSA/BCCDC Syphilis course

Screen all pregnant patients at least twice during their pregnancy

1. **Congenital syphilis is preventable through antenatal screening and timely treatment of pregnant individuals**.

   Vertical transmission risk is highest (70%) when there is untreated primary and secondary syphilis during pregnancy, compared to 40% in early latent and 10% for late latent syphilis. Spontaneous abortion, fetal demise and late-term stillbirth occur in about one third of untreated early pregnancy infections.

2. **The CMOH has recommended universal syphilis screening**

   - 1st trimester or first prenatal visit AND
   - 28 to 32 weeks (3rd trimester) gestation or as close to this interval as possible AND
   - For all people who deliver a stillborn infant after 20 weeks of gestation

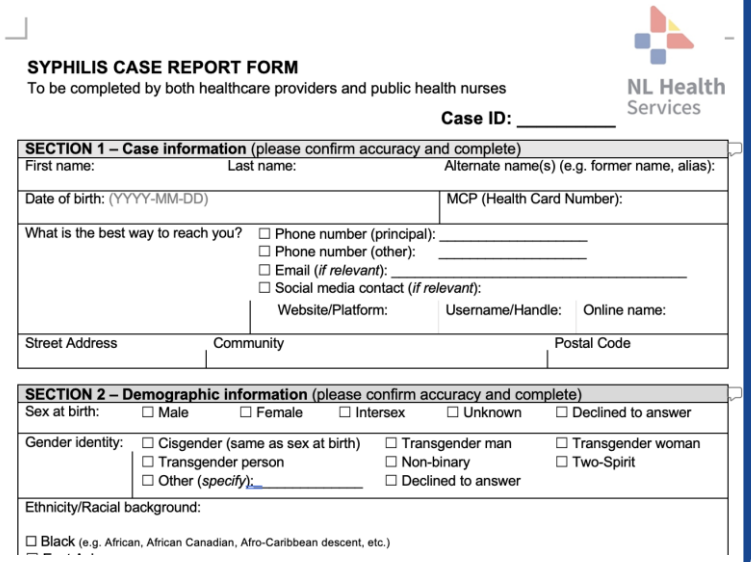
3. **Syphilis Serology should be done during labor or at delivery if:**

   - No prenatal screening has occurred, or results are unavailable
   - The 3rd trimester screening did not occur
   - Syphilis was diagnosed during pregnancy

All pregnant patients who test positive for syphilis should be 1) referred to maternal fetal medicine, infectious diseases (ID) and pediatrics ID and 2) treated with at least 2 doses of Pen G 1 week apart due to difficulty in staging infections

Report cases of syphilis to NL Health Services in 3 easy steps and request treatment if needed

1. A CDCN will send you a Case Report Form for more information, including **syphilis staging and if patient is pregnant.**



SYPHILIS CASE REPORT FORM

To be completed by both healthcare providers and public health nurses

NL Health Services

Case ID: _____

SECTION 1 – Case information (please confirm accuracy and complete)

First name: | Last name: | Alternate name(s) (e.g. former name, alias):

Date of birth: (YYYY-MM-DD) | MCP (Health Card Number):

What is the best way to reach you?
- ☐ Phone number (principal): _____
- ☐ Phone number (other): _____
- ☐ Email (*if relevant*): _____
- ☐ Social media contact (*if relevant*): Website/Platform: | Username/Handle: | Online name:

Street Address | Community | Postal Code

SECTION 2 – Demographic information (please confirm accuracy and complete)

Sex at birth: ☐ Male ☐ Female ☐ Intersex ☐ Unknown ☐ Declined to answer

Gender identity: ☐ Cisgender (same as sex at birth) ☐ Transgender man ☐ Transgender woman ☐ Transgender person ☐ Non-binary ☐ Two-Spirit ☐ Other (*specify*): _____ ☐ Declined to answer

Ethnicity/Racial background:

☐ Black (e.g. African, African Canadian, Afro-Caribbean descent, etc.)

2. Fax the Case Report Form to your local public health office

Eastern Health
Community Services
Mount Pearl Square
760 Topsail Road
Mount Pearl, NL A1N 3J5

(709) 752-4358

(709) 752-4873

Central Health
Health Protection Division
125 TransCanada Hwy
Gander, NL A1V 1P7

(709) 571-2183/
(709) 422-1740

(709) 651-6483

Western Health
149 Montana Drive
2nd Floor
Stephenville, NL A2N 2T4

(709) 643-1830

(709) 643-8541

Labrador-Grenfell Health (North)
P.O. Box 7000, Station C
Happy Valley Goose Bay, NL
A0P 1C0

(709) 897-3110

(709) 896-4393

Labrador-Grenfell Health
Lab West Health Centre
1700 Nichols-Adam Highway
Labrador City, NL A2V 0B2

(709) 285-8410

(709) 896-4393

3. Treatment medication can be requested for free through your local public health office

NL Health Services

Communicable Disease Control Program
760 Topsail Road
Mount Pearl, NL
Canada, A1N 3J5
T: 709-752-4873
W: NLHealthServices.ca

Request for Syphilis Treatment - Benzathine Penicillin G

Patient Name: _____
MCP: _____ DOB: _____
Address: _____ Phone: _____
Physician: _____
Clinic Name: _____ Phone: _____
Complete Clinic Mailing Address: _____

Please note that it is your responsibility to assess and treat your client

Indication/Diagnosis	Drug/Dosage	Doses Ordered
Primary, secondary, and early latent stages of syphilis infection (infected less than 1 year)	**Benzathine Penicillin G (Bicillin® L-A) 2.4 Million Units IM x 1 dose (Supplied in 2 syringes)	
Sexual contact with a known positive syphilis case in last 90 days		
Late latent syphilis (infected more than 1 year or of unknown duration)	**Benzathine Penicillin G (Bicillin® L-A) 2.4 Million Units IM x 3 doses (Supplied in 6 syringes)	
Syphilis (at any stage) with HIV co-infection		

Physician's Signature: _____ Date: _____

** Long-Acting Benzathine Penicillin G (Bicillin® L-A) should not be confused with Short-Acting Benzylpenicillin (Penicillin G)

Benzathine Penicillin G (Bicillin® L-A) must be stored in a refrigerator that is temperature monitored and stored between 2-8 0C

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The following four slides contain photos and content that may be sensitive to some people

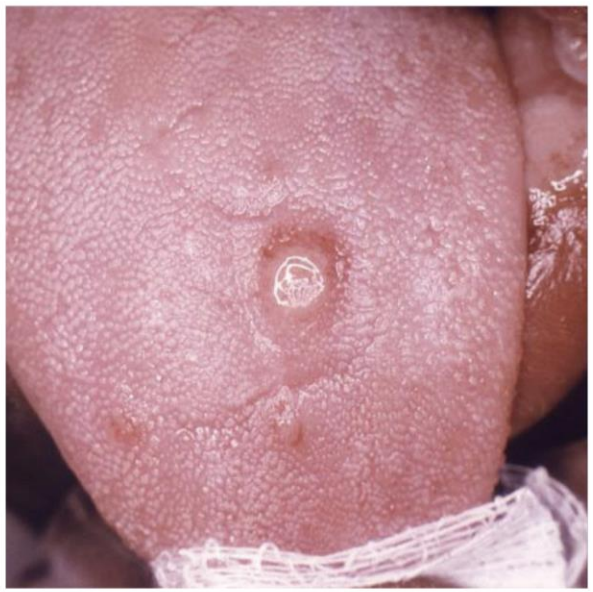
Primary Syphilis

Timing:

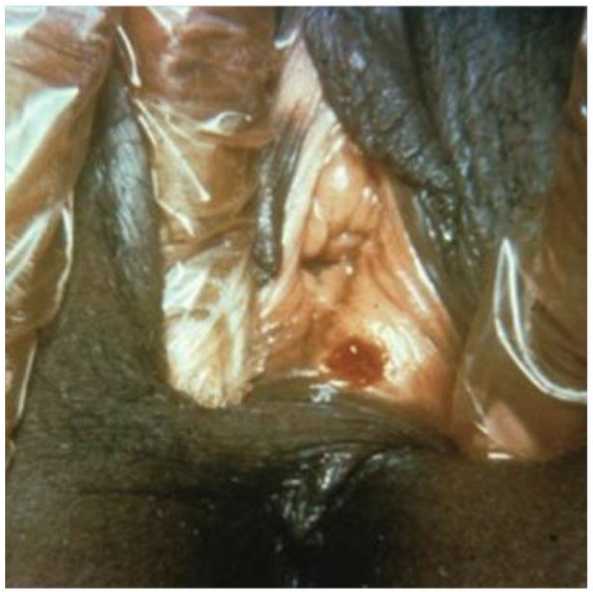
Usually occurs 3 weeks after infection, but can occur anywhere from 3 to 90 days post-infection.

Signs & symptoms:

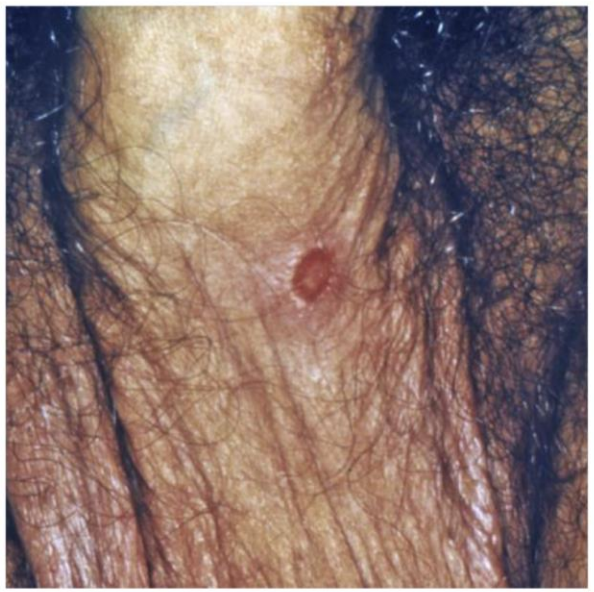
Painless lesion (chancre), regional lymphadenopathy.



(1.1) Oral chancre[1]



(1.2) Vaginal chancre[2]



(1.3) Penile chancre[3]

(1.4) Inguinal lymphadenopathy[4]

**See the Syphilis Guide for Health Professionals for more information.

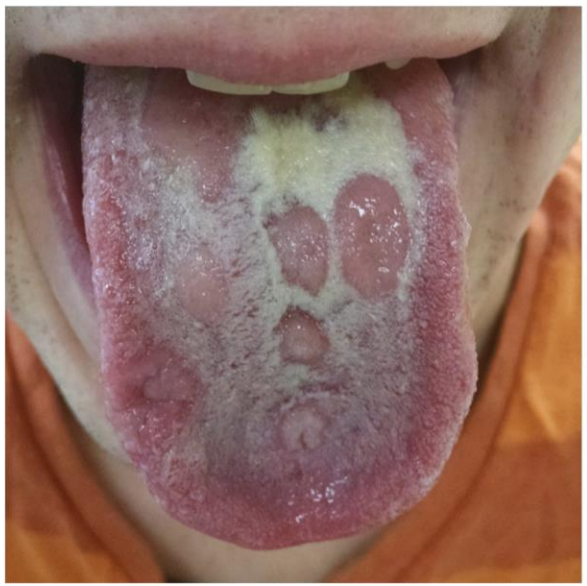
Secondary Syphilis

Timing:

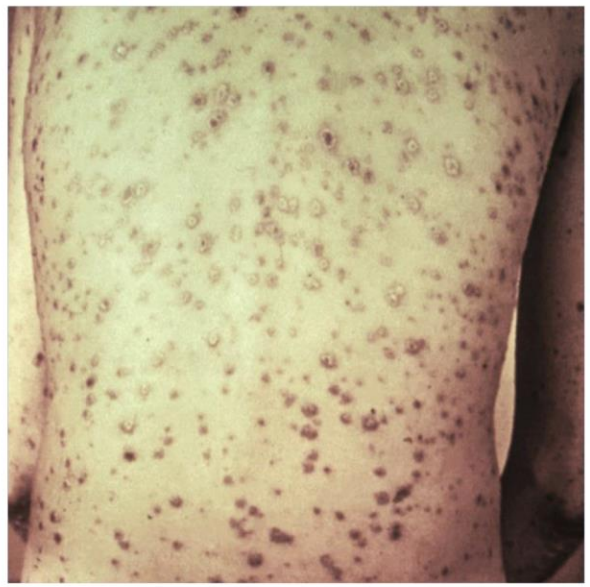
Usually occurs from 2 to 12 weeks after infection, but can occur up to 6 months post-infection.

Signs & symptoms:

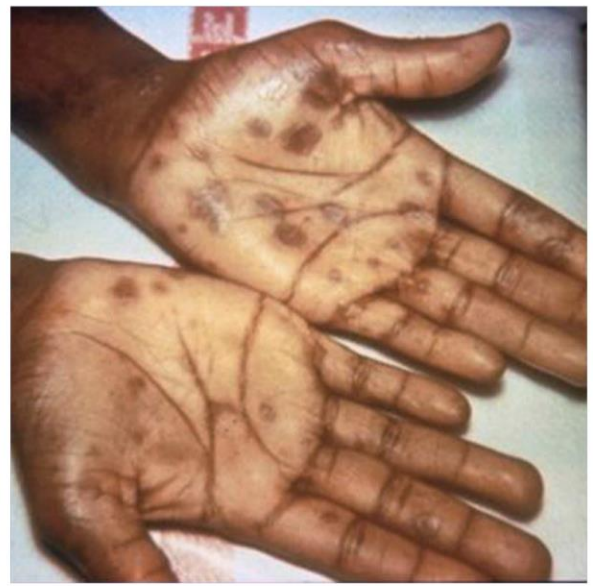
Rash, fever, malaise, mucosal lesions, condylomata lata, lymphadenopathy, patchy or diffuse alopecia.



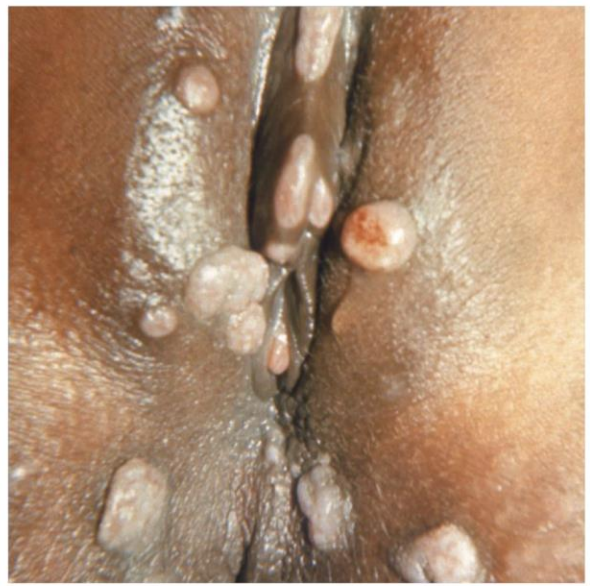
(2.1) Mucosal lesions on tongue[5]



(2.2) Secondary syphilis rash on body[6]



(2.3) Secondary syphilis palmar rash[7]



(2.4) Vaginal condylomata lata[8]

Latent Syphilis

Timing:

Early latent syphilis is an asymptomatic infection of less than 1 year duration. It is considered infectious because of the 25% chance of relapse to the secondary stage.

Latent syphilis of unknown duration is an asymptomatic infection where the duration cannot be confirmed (i.e. no serologic testing within the prior 12 months).

Late latent syphilis is an asymptomatic infection of more than 1 year duration.

Signs & symptoms:

All latent syphilis infections are present without signs or symptoms.

Neurosyphilis

Timing:

Early neurosyphilis occurs within the first year after infection.

Late neurosyphilis occurs more than 1 year after infection.

Note that HIV alters the natural course of syphilis and sometimes results in a more rapid progression to neurosyphilis with more aggressive and atypical signs of infection.

Signs & symptoms:

Early neurosyphilis: Meningitis (e.g. headache, nuchal rigidity), uveitis/retinitis (e.g. blurred vision, red eye, flashers, floaters), otic signs and symptoms (e.g. hearing loss, tinnitus).

Late neurosyphilis: General paresis (e.g. personality and cognitive changes), tabes dorsalis (e.g. Argyll Robertson pupils, ataxia, sensory changes, abnormal reflexes).

Tertiary Syphilis

Timing:

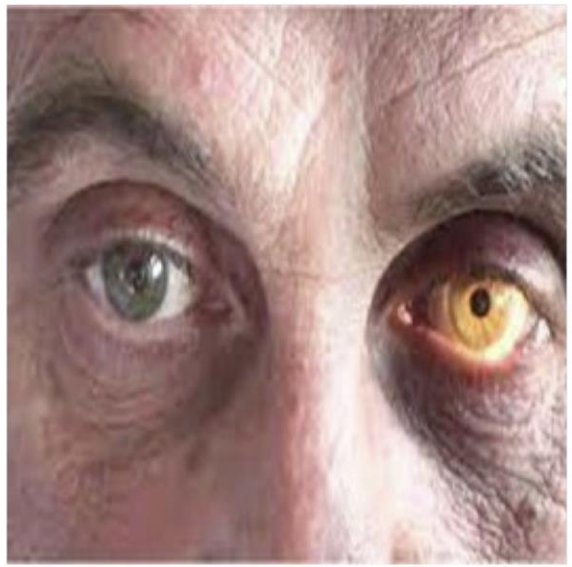
Late neurosyphilis, cardiovascular syphilis, or **syphilitic gumma** can develop years to decades after infection.

Signs & symptoms:

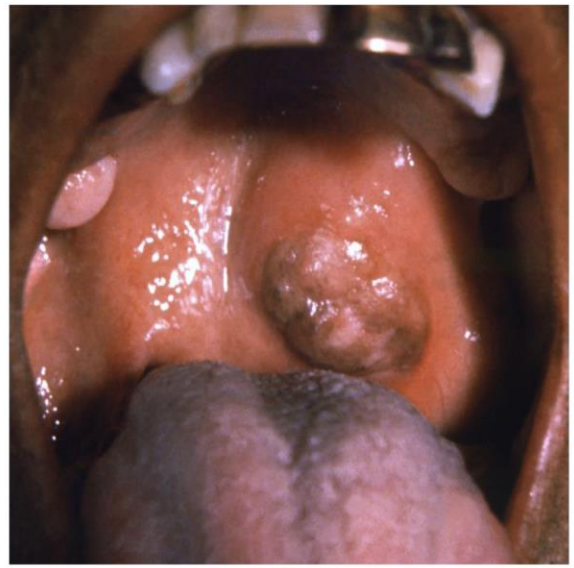
Cardiovascular syphilis: Aortic aneurysm, aortic regurgitation, coronary artery ostial stenosis.

Syphilitic gumma: Gummatous lesions causing tissue damage, with clinical manifestation depending on the site involved.

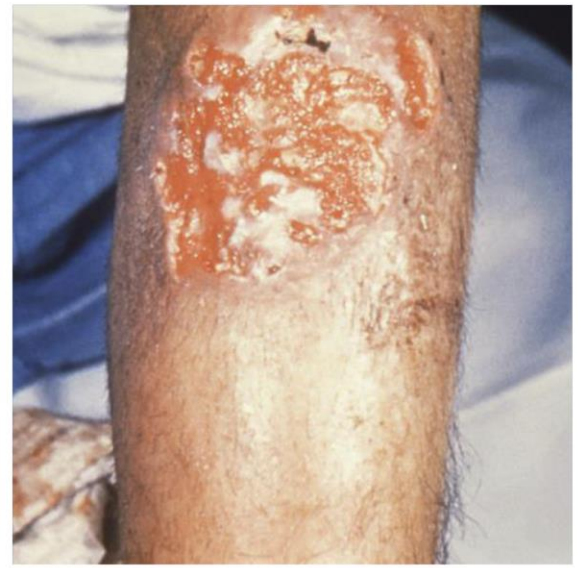
Late neurosyphilis: General paresis (e.g. personality and cognitive changes), tabes dorsalis (e.g. Argyll Robertson pupils, ataxia, sensory changes, abnormal reflexes).



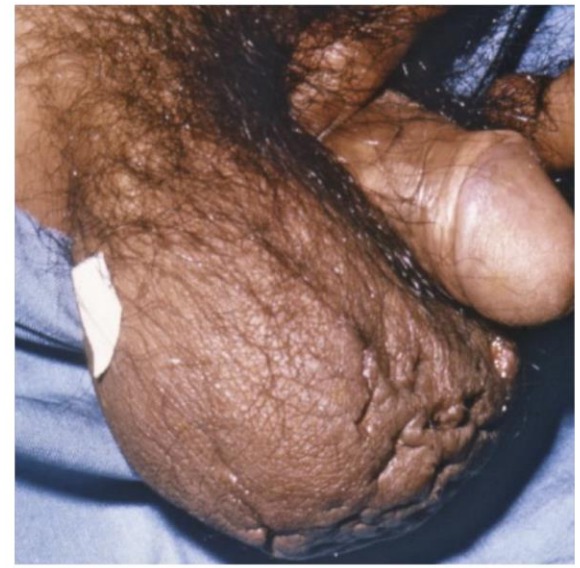
(3.1) Argyll Robertson pupils, indicative of late neurosyphilis[9]



(3.2) Intraoral gummatous lesion of the soft palate[10]



(3.3) Cutaneous ulcerative lesion on the forearm[11]



(3.4) Syphilitic gumma of the testicle[12]

Agenda

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Types of syphilis serology

Syphilis CMIA (TT)
- High sensitivity
- Lower specificity
- Once positive, will be positive for life

RPR (NTT)
- Ab to cellular components released due to infection
- Quantitative titres
- Decline over time

Syphilis TP-PA (TT)
- High specificity
- Confirmatory test
- Once positive, will be positive for life

False positive alternative diagnoses			
Treponemal Test (TT)		**Non-Treponemal Test (NTT)**	
Infectious	**Non-Infectious**	**Infectious**	**Non-Infectious**
• Brucellosis • Genital herpes • EBV • Leprosy • Lyme disease • Malaria • Other trep infections (i.e. yaws)	• Advancing age • Chronic Liver Disease • AI (SLE, Scleroderma) • Thyroiditis	• Bacterial endocarditis • Chancroid • VZV, EBV, LGV, Viral hepatitis • Malaria • Mumps • Pneumonia • TB • Other trep infections	• Advancing age • CTD (i.e. RA) • IVDU • Malignancy, Multiple Myeloma • Pregnancy • UC

Syphilis serology interpretation

TEST			MOST LIKELY INTERPRETATION results should be interpreted in conjunction with history and clinical findings
Syphilis Screen (Treponemal) e.g. EIA, CMIA, CLIA	RPR (Non Treponemal)	TP-PA (Treponemal)	
Reactive	Reactive (dilutions may vary)	Reactive OR Indeterminate	**Consistent with recent or prior syphilis infection.** (a) Infectious syphilis (primary, secondary, early latent), especially if titre > 1:8 & history of symptom(s), contact with an infected partner, other risk factors OR (b) Late latent syphilis or latent syphilis of unknown duration, especially if titre <1:8 & no history of treatment OR (c) Old treated syphilis OR (d) In persons from endemic countries, yaws (e.g. Caribbean), pinta (e.g. Central America), or bejel
Reactive	Non Reactive	Reactive	**Consistent with recent or prior syphilis infection.** (a) Usually late latent syphilis or latent syphilis of unknown duration, with no history of treatment OR (b) Old treated syphilis OR (c) Incubating infectious syphilis (primary), especially if history of symptom(s), contact with an infected partner, or other risk factors OR (d) In persons from endemic countries, yaws (e.g. Caribbean), pinta (e.g. Central America), or bejel
Reactive	Non Reactive	Indeterminate	**Inconclusive syphilis serology results.** (a) Incubating infectious syphilis (primary), especially if history of symptom(s), contact with an infected partner, or other risk factors OR (b) Old treated or untreated syphilis OR (c) Biological false positive
Reactive	Non Reactive	Non Reactive	**Usually biological false positive.** Alternate interpretations include incubating infectious syphilis, previously treated syphilis, or rarely, late latent syphilis
Reactive	Reactive (dilutions may vary)	Non Reactive	**Inconclusive syphilis serology results.** (a) Incubating infectious syphilis (primary), especially if history of symptom(s), contact with an infected partner, or other risk factors OR (b) Old treated or untreated syphilis OR (c) Biological false positive
Non Reactive	Test not done	Test not done	• No confirmatory testing performed when screen is non-reactive • Early incubating syphilis can be non-reactive before antibodies develop PLAN: If clinical suspicion of early syphilis, repeat blood work in 2-4 weeks to observe rise in titre or TPPA seroconversion
If the syphilis test result is inconclusive or not consistent with clinical findings, then you can consider repeating blood work in 2-4 weeks to observe rise in titre or TPPA seroconversion			

Source: https://www.toronto.ca/wp-content/uploads/2018/02/8528-tph-syphilis-lab-interpretation-guideline-Jan-2018.pdf

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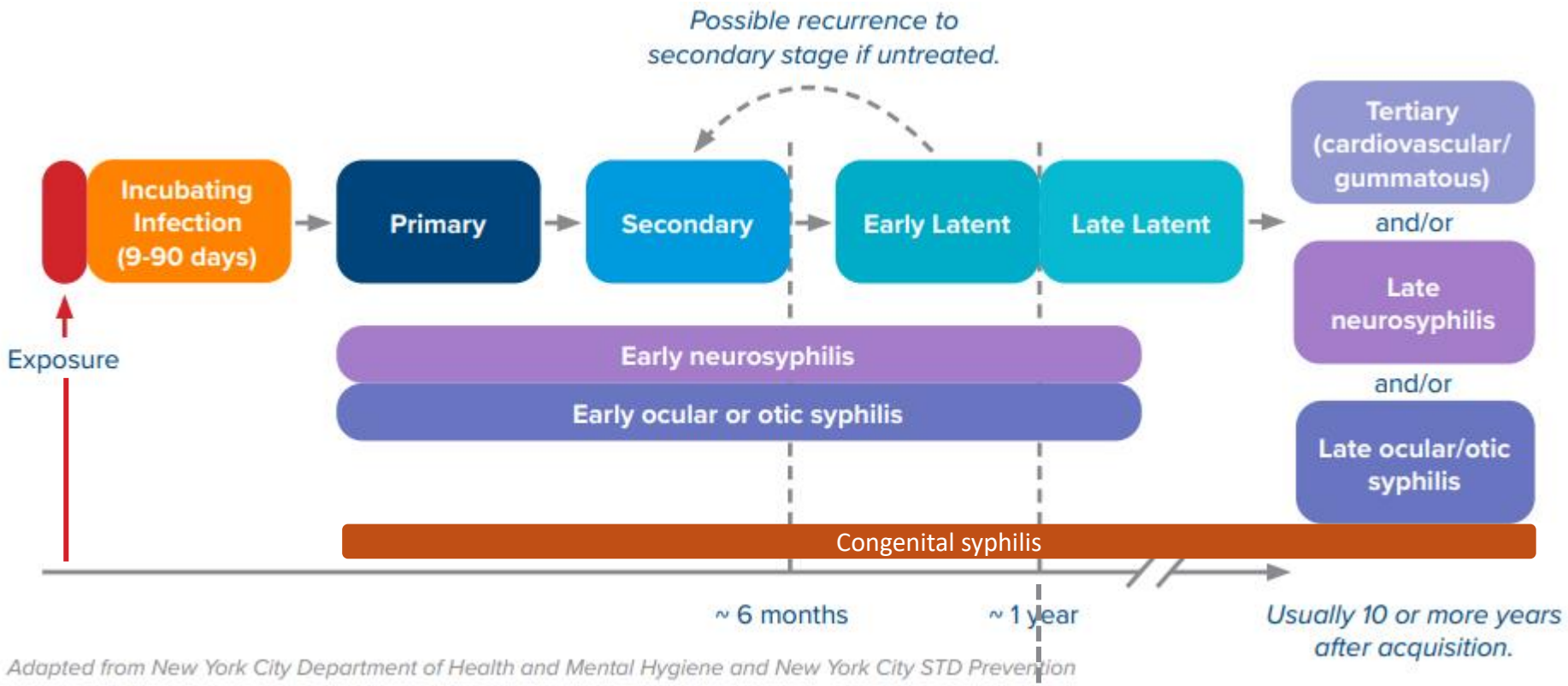


Primary	**Secondary**	**Early Latent**	**Late Latent Syphilis**

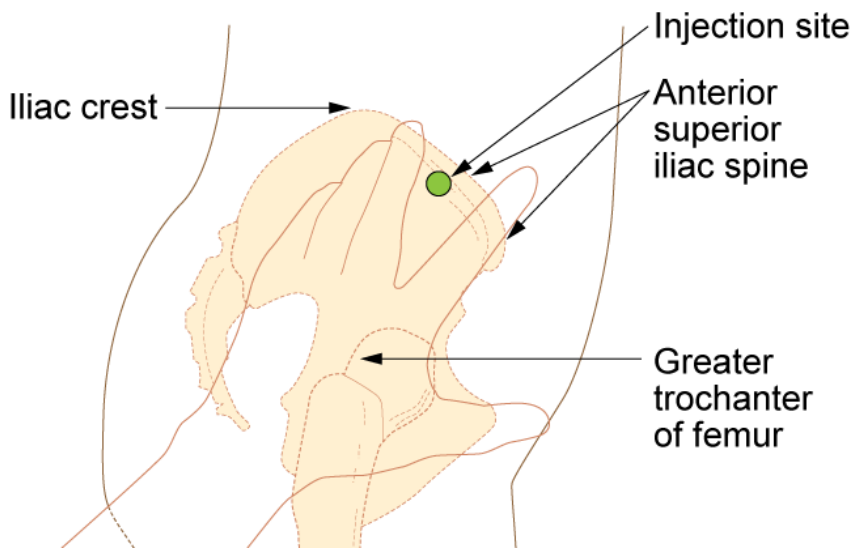
• Symptoms (chancre, inguinal lymphadenopathy)
• Contact to case
• CMIA + (or -)
• RPR variable
	• Symptoms
	• Contact to case
	• CMIA +
	• RPR (high titre)
		• No signs/symptoms
		• Reactive serology
		• In last 12 months:
		  • Non-reactive serology
		  • Signs of primary/secondary
		  • Contact to confirmed infectious case
			• No signs/symptoms
			• Reactive serology
			• Clinical suspicion of syphilis acquisition OR RPR >1:8

Infectious Treat with Bicillin x 1 ; Avoid intercourse for 7 days post-treatment completion			**Non-infectious** Treat with Bicillin q weekly x 3 doses

Neurosyphilis requires IV antibiotic treatment by an Infectious Diseases specialist
Syphilis in pregnancy may also need extra doses – consult with Infectious Diseases and Maternal-Fetal Medicine

graphic from PHSA/BCCDC Syphilis course

Penicillin G benzathine (Bicillin L-A) should be injected by the ventrogluteal route



- The medication does not require reconstitution.
- A complete dose of **Bicillin L-A requires two syringes** (2.4 million IU total for a dose and each syringe is 1.2 million IU).
- Administer Bicillin L-A as a divided dose of 1.2 million units IM bilaterally to the left and right ventrogluteal (preferred) or dorsogluteal muscle only. Do NOT administer to the deltoid or quadriceps muscles.

Bicillin images are mine. Ventrogluteal image from OpenTextBC: https://opentextbc.ca/clinicalskills/chapter/6-8-iv-push-medications-and-saline-lock-flush/
Adapted from: http://www.bccdc.ca/resource-gallery/Documents/Communicable-Disease-Manual/Chapter%205%20-%20STI/Bicillin%20Quick%20Tips.pdf

Treat all sexual contacts from the 3 months prior to diagnosis or symptom onset for infectious syphilis

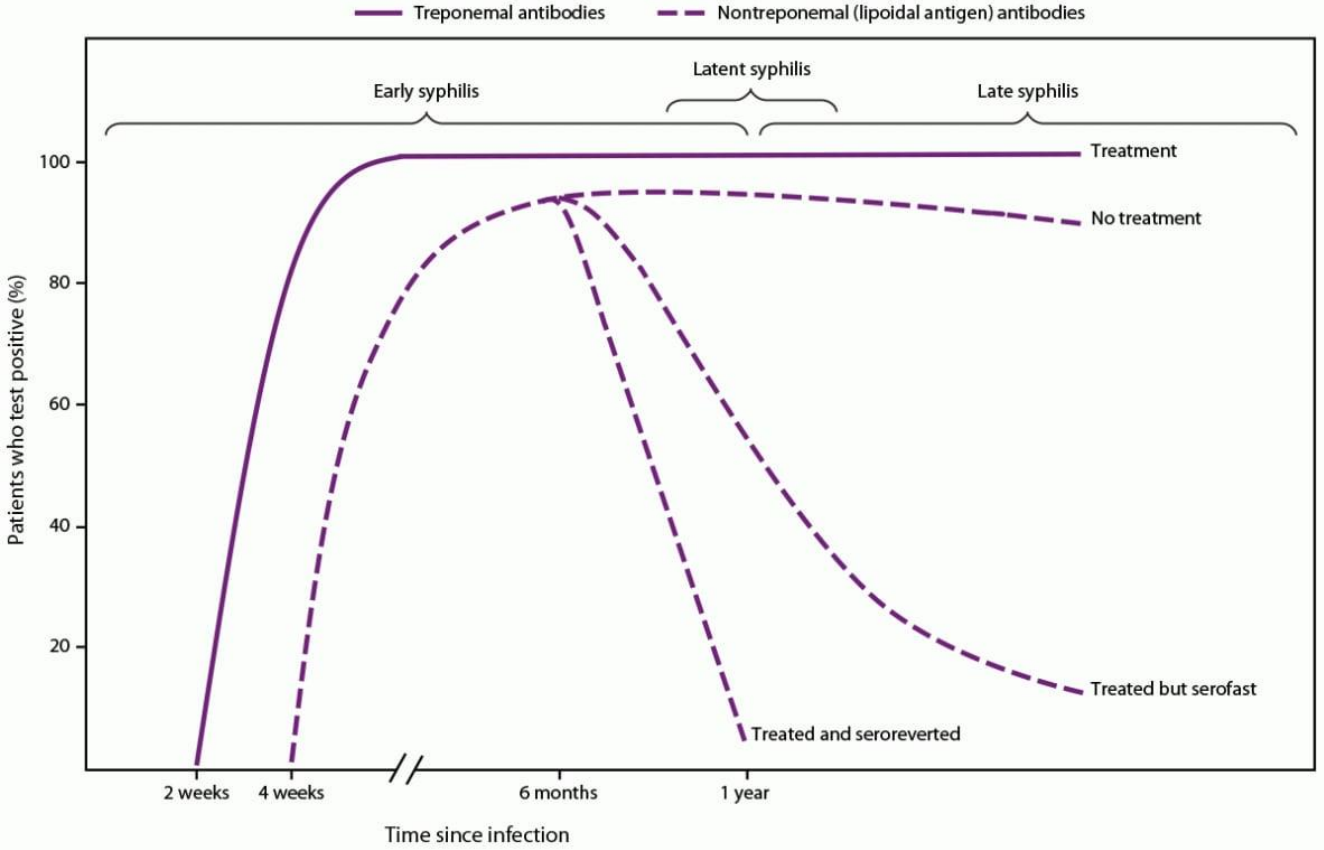
Stage	Contact notification
Primary	Test and treat sexual contacts from 3 months prior to the onset of symptoms/date of diagnosis
Secondary	Test and treat sexual contacts from 3 months prior to the onset of symptoms/date of diagnosis. Test contacts from 3-6 months.
Latent	Early: Test and treat sexual contacts from 3 months prior to the date of diagnosis. Test sexual partners within 1 year prior to diagnosis, or if none, the most recent partner before then.
	Late: Assess marital or other long-term partners and children as appropriate.
Tertiary	Assess marital or other long-term partners and children as appropriate
Pregnancy	Assess partners based on the stage of diagnosis and infant should be assessed at delivery.

From PHAC Syphilis Guide: Strongly consider epidemiological treatment for sexual contacts of primary, secondary and early latent syphilis cases from the previous 90 days, especially if they may be lost to follow-up, unable to test or follow up of the contact is not feasible. Epidemiological treatment of infectious syphilis may be appropriate if the person is likely to be within the incubation period.

Counsel patients on the Jarisch-Herxheimer reaction and refer pregnant patients for monitoring

- Counsel patients on this reaction.
- Acute febrile illness with headache, myalgia, chills and rigors within 2-24 hours of treatment.
  - This reaction is more common in secondary syphilis (70% to 90%) but can occur at any stage of infection.
- Hypothesised to be caused by inflammation induced by breakdown of spirochetes releasing cytokines and toxins
- It is not usually clinically significant unless there is neurologic or ophthalmic involvement, or in pregnancy because it may cause fetal distress and premature labour.

Follow-up serology depends on syphilis stage



Serofast – when RPR does not revert to NR after 1 year post-treatment

- Typically <1:8 (but can be >1:8)
- Reasons: multiple infections, treated > 1 year from infection

Stage	Follow-up Syphilis serology	Adequate response (2-tube drop = 4 fold drop e.g. from 1:32 to 1:8)
Primary	Repeat test: 3,6,12 mo	2-tube drop at 6 months 3-tube drop at 12 months 4-tube drop at 24 months
Secondary	Repeat test: 3,6,12 mo	3-tube drop at 6 months 4-tube drop at 12 months
Latent	Early - repeat test: 3,6,12 mo	Early: 2-tube drop at 12 months
	Late - repeat test: 12, 24 mo	Late: Response will be variable
Tertiary	Repeat test: 12, 24 mo	Response will be variable
Neuro	Repeat test: 6, 12, 24 mo	Response will be variable
HIV	3, 6, 12, and 24 mo and yearly	
Pregnancy	**Refer to infectious diseases, pediatric infectious diseases, and maternal-fetal medicine** Primary, secondary and early latent syphilis: Monthly until delivery if at high risk of re-infection; 1, 3, 6 and 12-months post treatment Late latent syphilis: At time of delivery and 12 and 24 months	

Verify penicillin allergies before choosing alternative antibiotic treatment

Penicillin is the first line treatment for syphilis

•While second-line options are available, they require longer periods of therapy with more side effects (e.g. doxycycline PO daily x 28 days)

•Penicillin is the only therapy that has been proven for syphilis treatment for pregnant people

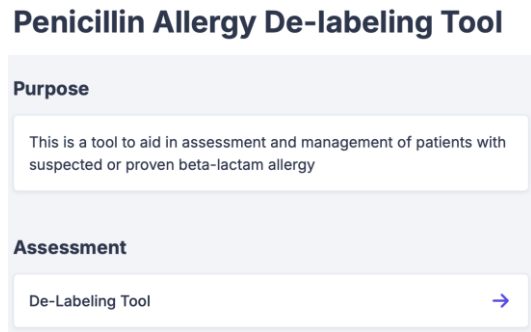
Many people are not truly allergic to penicillin

•About 10 per cent of people report a penicillin allergy, but 90 per cent to 95 per cent are not truly allergic.

•Most rashes are caused by the infection and not necessarily a true allergy

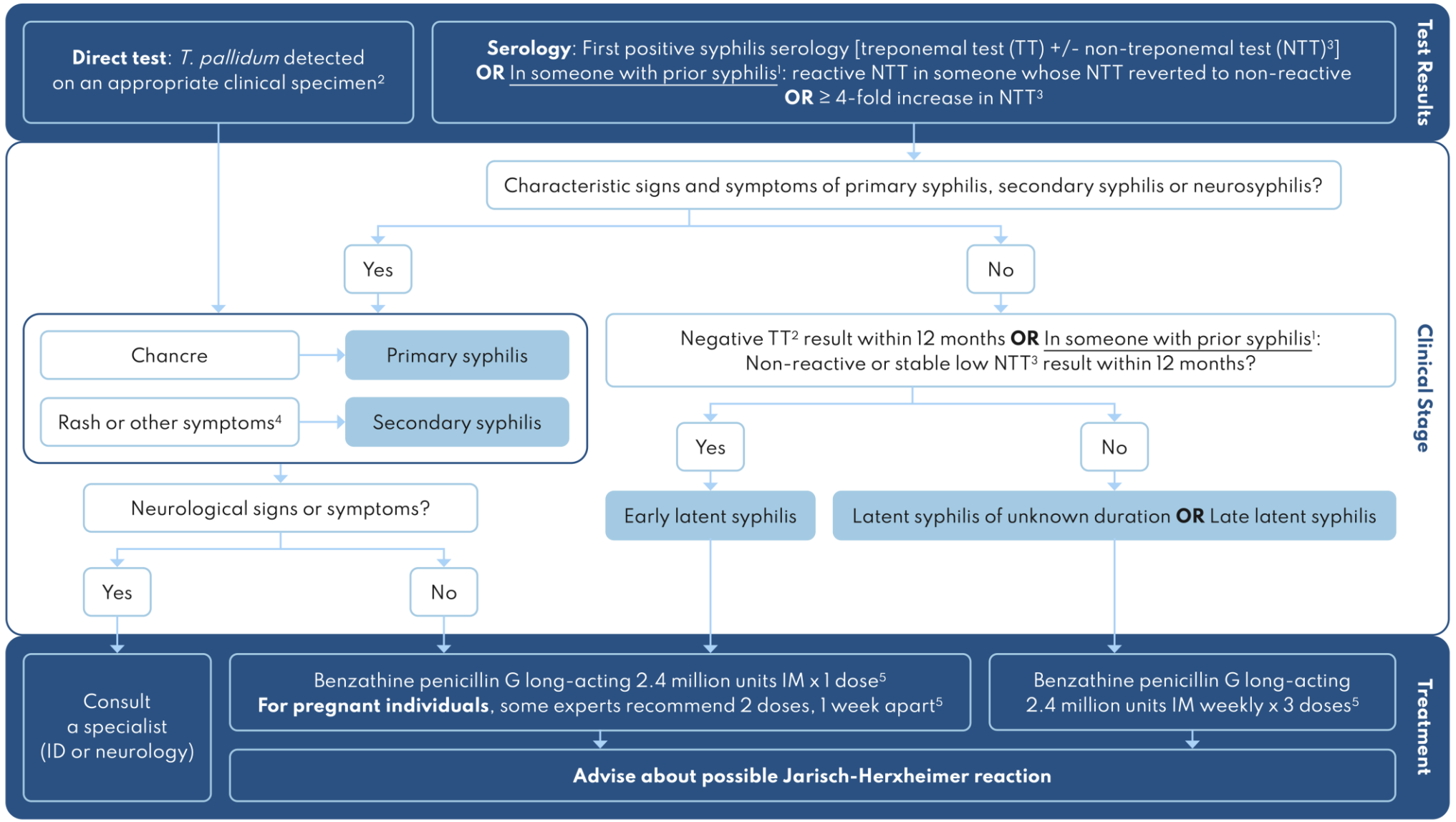
•Allergies can be outgrown – up to 50% after 5 years and 80% after 10 years

Consider using a risk calculator tool to help prognosticate the risk



Simplified algorithm for clinical syphilis staging and treatment in adolescents and adults[1]

March 2024



Public Health Agency of Canada | Agence de la santé publique du Canada

Canada.ca/syphilis

Canada

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Syphilis in pregnancy should be co-managed with infectious diseases and other specialists

Co-manage pregnant patients with an infectious diseases (ID) and pediatrics ID specialist

•All pregnant patients with infectious syphilis should be managed in conjunction with an ID specialist.

•Pediatric Infectious Disease should be consulted for infants with suspected or confirmed congenital syphilis, or whose pregnant parent was diagnosed or treated for syphilis during pregnancy.

•Antibiotic treatment is recommended according to ID specialist recommendations.

Pay extra attention to patients who have previously tested positive for syphilis

•Previously treated cases should be retested in pregnancy to rule out relapse or treatment failure.

•With documentation of adequate treatment in the past, patients need not be retreated, unless there is clinical or serological evidence of re-infection or treatment failure.

Involve a maternal-fetal medicine (MFM) specialist

•If the mother is >20 weeks gestation, a detailed fetal ultrasound should be performed and they should be managed together with a maternal-fetal medicine specialist.

•Treatment of infectious syphilis in pregnancy may precipitate a Jarisch-Herxheimer reaction which may cause fetal distress or premature labour; all patients > 20 weeks gestation should undergo fetal monitoring for 12 - 24 hours after administration of benzathine penicillin.

NL CDC Manual (currently undergoing revisions) – https://www.gov.nl.ca/hcs/files/publications-diseasecontrol-s5-sexually-transmitted-and-bloodborne-pathogens.pdf
CMOH Memo on Screening Recommendations for Syphilis and other Sexually Transmitted and Bloodborne infections (24 September 2024)

Congenital syphilis is preventable and is caused by inadequately treated syphilis in pregnancy

Congenital syphilis is extremely dangerous and can even lead to death

• Other effects include miscarriage, stillbirth, intrauterine growth restriction, fetal hydrops, fetal malformation

• In more than a third of cases, congenital syphilis leads to neonatal death

Congenital syphilis can be asymptomatic and has early and late stages

• Most infants do not have symptoms at the time of delivery

• Any suspicion of congenital syphilis should be referred to pediatrics infectious diseases

• **Early congenital syphilis** is during the first two years of life. Most symptoms start at 3-14 weeks.

• **Late congenital syphilis symptoms** can be harder to diagnose, but most symptoms start around 2-5 years.

Congenital syphilis is preventable

• By testing and treating everyone with syphilis

• Testing all pregnant people for syphilis

• Completing syphilis treatment by 4 weeks before delivery

The following two slides contain photos and content that may be sensitive to some people

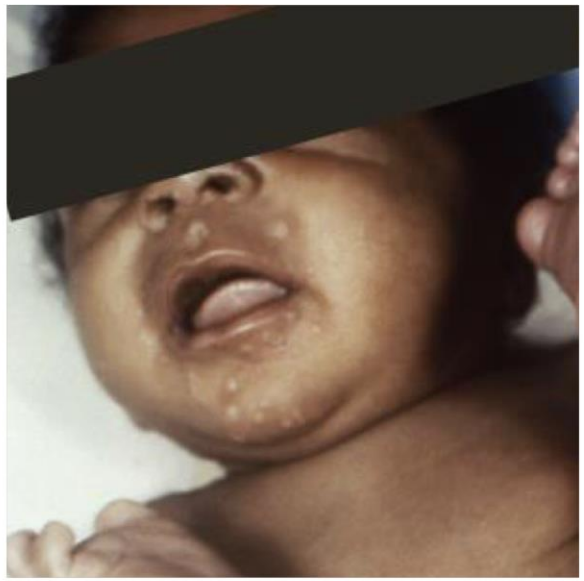
Early Congenital Syphilis

Timing:

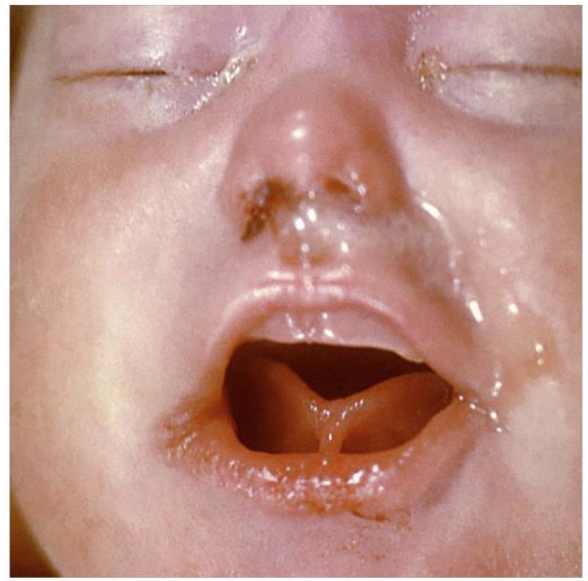
Presentation before 2 years of age.

Signs & symptoms:

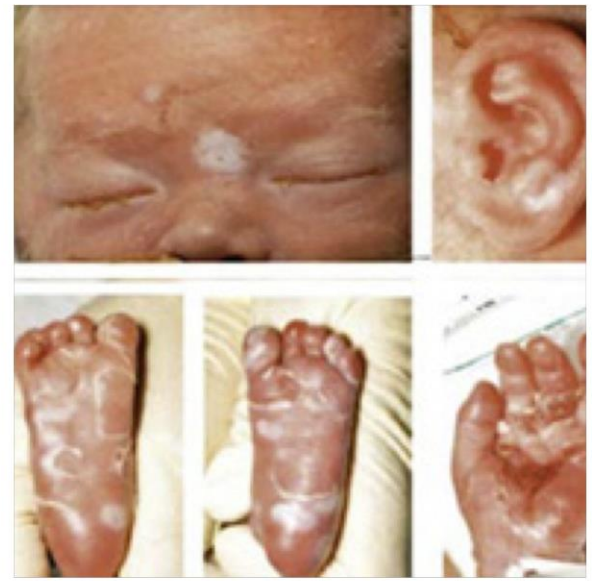
More than half of liveborn infants with congenital syphilis are asymptomatic at birth.[13] If present, signs and symptoms may include mucocutaneous lesions (e.g. maculopapular rash, desquamation), hepatosplenomegaly, anemia, fulminant disseminated infection.



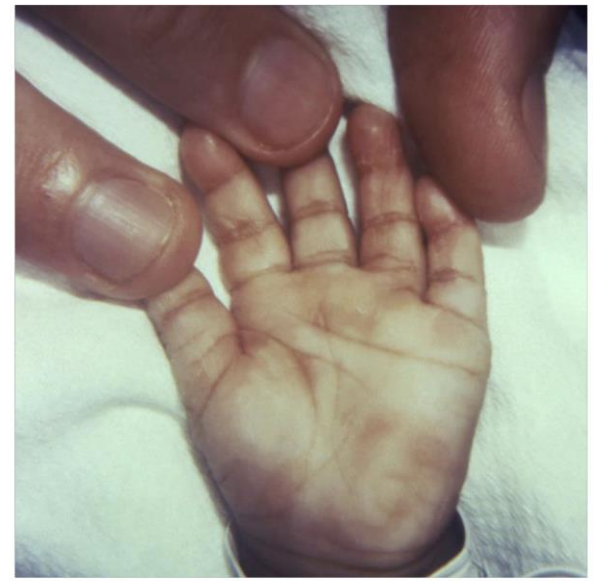
(4.1) Papular rash on the chin and lips and darkly pigmented spots on the feet[14]



(4.2) Rhinitis (snuffles)[15]



(4.3) Typical desquamating and maculopapular skin lesions[16]



(4.4) Copper coloured palmar rash[17]

***See the Syphilis Guide for Health Professionals and the Canadian Pediatric Society's Position Statement for more information.

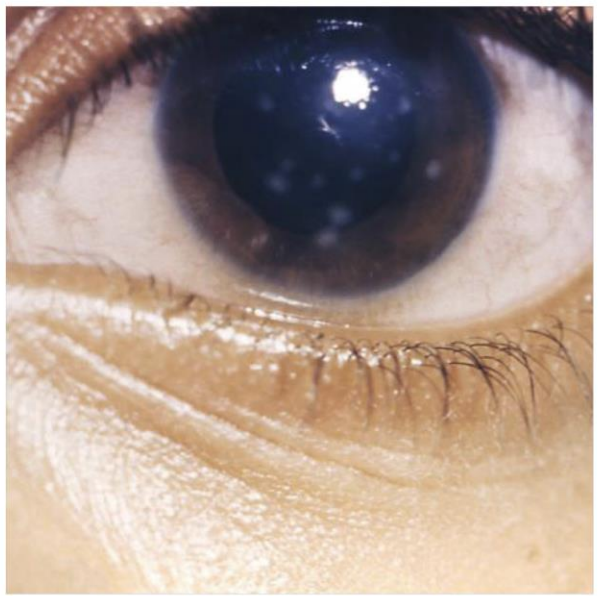
Late Congenital Syphilis

Timing:

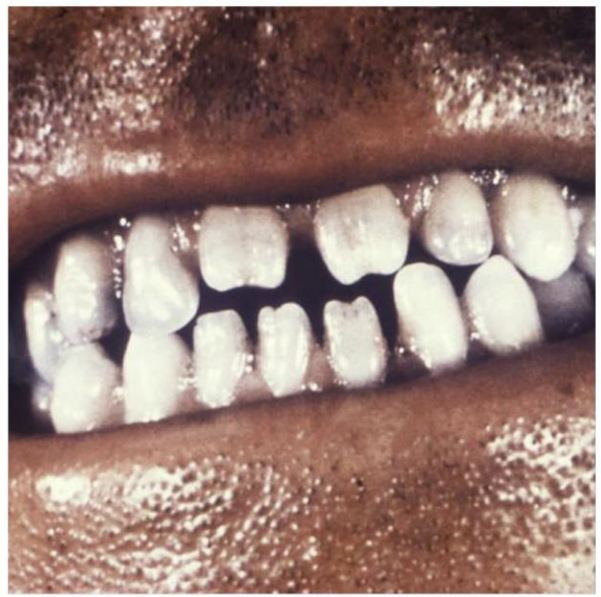
Presentation after 2 years of age.

Signs & symptoms:

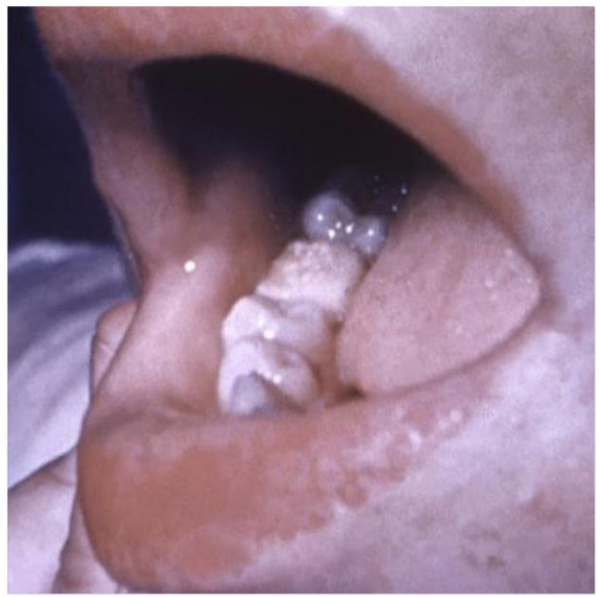
Musculoskeletal involvement (e.g. osteoperiostitis, saddle nose), interstitial keratitis, eighth nerve deafness, dental abnormalities (e.g. Hutchinson's teeth, mulberry molars).



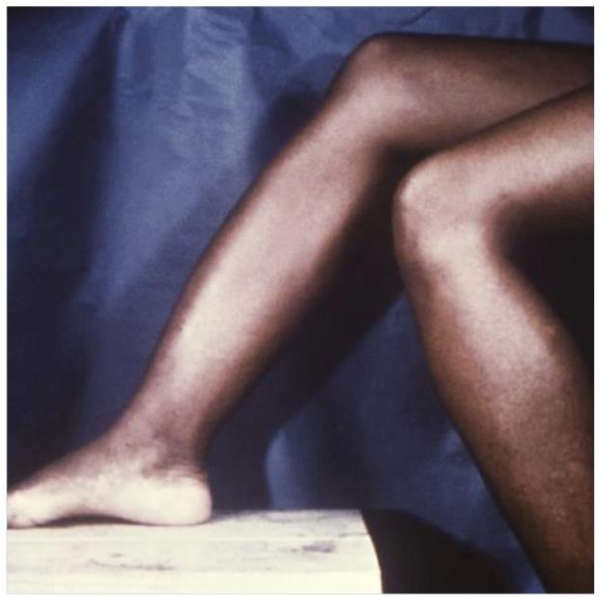
(5.1) Interstitial keratitis[18]



(5.2) Hutchinson's teeth[19]



(5.3) Mulberry molar (rounded enamel cusps on the permanent first lower molars)[20]



(5.4) Osteoperiostitis of the tibia leading to characteristic sabre shins[21]

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Summary and question period

- There is an outbreak of syphilis in the Labrador-Grenfell Zone.
- We are extremely concerned about the potential for cases of congenital syphilis.
- Syphilis is often asymptomatic or presents with minimal symptoms, so testing is crucial to early diagnosis and treatment.
- If you're testing for one STBBI, test for all the STBBIs.
- NL Health Services is taking a four-pronged strategy to this outbreak and needs your help to bring this outbreak under control.

Prevent cases	• Encouraging safer sex and testing all people at risk of STIs are the cornerstones of our strategy to get this outbreak under control. • Education materials and condoms are available through public health offices.

Test	• Test for one, test for all – gonorrhea, chlamydia, syphilis, and HIV in all individuals at risk for STIs, including:
	  ○ Those presenting with any STI symptoms.
	  ○ All sexually active individuals annually.
	  ○ Patients with new or multiple sex partners, every 3-6 months.
	  ○ Pregnant patients, who should be screened in both the 1st and 3rd trimester, and at delivery as indicated based on CMOH memo dated September 24, 2024.

Treat	• Complete the Syphilis Case Report form sent by NLHS Public Health. • Treat using PHAC or NLCHI guidance. We have increased our stockpile of Penicillin G in the zone and can help with ensuring treatment is available for your patients. Request meds from your zonal public health office.
Enabling environments	• Encourage conversations about STI/HIV testing with all sexually active people during routine visits (How to discuss sexual health, substance use and STBBIs.) • Consider implementing opt-out testing, where the default is a full panel of STI testing unless declined.

Additional resources on syphilis and STBBIs

Toronto Public Health Syphilis Interpretation and Treatment Guide

Public Health Agency of Canada (PHAC) Syphilis Guide

CPHA How to discuss sexual health, substance use and STBBIs

Syphilis opt-out screening program information (see section on Targeted "opt-out" screening programs)

PHSA-BCCDC Syphilis Overview Course (free, can earn CME credits)

Education resources for patients and the public

- CATIE Ordering Centre for posters and booklets (e.g. syphilis testing poster)
- PHAC get tested for syphilis poster
- SOGC's Sex & U website: https://www.sexandu.ca
- General STI testing poster from Middlesex-London Health Unit