

Syphilis “The Great Imitator”

Public Health Presentation by Tanya Lesperance and Ireti Ilori

Case Study Presented by Dr. Sarah Facca

Epidemiology Report- Adena Miller and Thi Nguyen

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WARNING!!!

This presentation contains graphic images and sensitive topics that may not be suitable for everyone.

Please consider the space you are viewing this material in prior to proceeding.



Objectives

By the end of this presentation, participants will be able to:

1. Identify risk factors for acquiring a Syphilis infection.
2. Compare and contrast Syphilis to its imitators.
3. Describe how to diagnose and treat a Syphilis infection.

CASE 1: 70 yo M

- FP advised him to come to sexual health clinic b/c he had “signs of syphilis”
- Developed a sore on foreskin 6-7 weeks ago, not painful except for when touched by urine
- Thought he'd caught his penis in zipper
- Has never been dx'd w/ syphilis before
- NO fatigue, fever, swollen LNs, vision issues, ataxia, h/a, memory issues, SOB, rashes etc.

CASE 1: 70 yo M (continued)

- PAST MEDICAL HX:
 - HTN
- MEDS:
 - Amlodipine
 - Metoprolol
 - ASA
- ALLERGIES: none
- FAMILY HISTORY: nil signif.
- SOCIAL HX:
 - Still working as an engineer on various contracts
 - Approx. 2 months ago had casual female sex partner - sex trade worker
 - Smokes cigarettes: 1 ppd
 - Occasional EtOH
 - NO recreational drugs

CASE 1: 70 yo M (continued)

- ON EXAM:
 - Alert. NAD.
 - Single lesion on penis foreskin / shaft
 - approx. 1 cm diameter
 - rolled edges
 - non-exudative
 - indurated
- INVESTIGATIONS:
 - Previous syphilis serology from 6 months ago: negative
 - Syphilis Serology done by PCP a couple of weeks ago Reactive w/ RPR 1:8



Case 2: 19 yo F

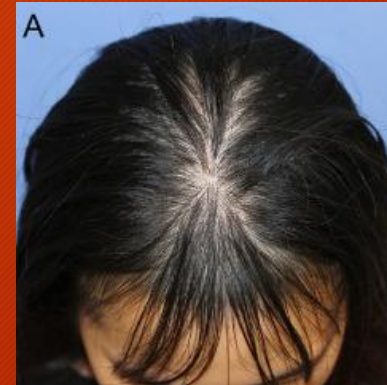
- BF was treated for syphilis by his FP 3 days ago - told him he's had it for at least 3 months"
- "trying to get same treatment"
- Pt went to ER last month b/c had "weird rash all over body", hair was falling out, and "ulcers in my mouth"
- Reports that they ordered bloodwork in ER and thought she may have Celiac
- States the rash has changed (now has "super dry skin everywhere", her hair loss persists, and ulcers in mouth are "kind of going away, but they're definitely still there"
- No known hx of chancre
- "Really crappy feeling" for past 2-3 months
- Ongoing headaches x 6 months
- No previous syphilis serology

Case 2: 19 yo F (continued)

- PAST MEDICAL HX:
 - ? Celiac
 - needle phobia
- MEDS: none
- ALLERGIES: ? penicillin allergy
- FAMILY HISTORY: nil signif.
- SOCIAL HX:
 - Monogamous relationship w/ BF x 1 year
 - No hx of sex trade work or sex with sex trade workers
 - Smokes tobacco w/ marijuana - 4 / day "tops"
 - Alcohol Use: 2 x / week will drink 5-6 shots

Case 2: 19 yo F (continued)

- ON EXAM:
 - + anxious
 - + patchy hair loss
 - diffuse skin dryness, no specific lesions
 - mouth: one area of irritation / redness
 - has pictures of previous oral ulcers which appear to be in keeping w/ previous mucous lesions
- INVESTIGATIONS (in ER):
 - WBC 13
 - CRP elevated w/ N ESR
 - Serology for Hep A/B/C and HIV non-reactive
 - Syphilis serology NOT done



Syphilis Etiology

- Disease caused by infection with the bacterium *Treponema pallidum* (TP).
- Route of transmission is primarily through sexual contact
- Stages including primary, secondary, latent and rarely tertiary
- Serologic testing is the primary method for routine diagnosis and monitoring of treatment

(Public Health Ontario, Nov 2020, Pg. 1)

Syphilis- Disease of Public Health Significance

- “Specimens that are positive for syphilis are to be reported to the Medical Officer of Health as per Health Protection and Promotion Act” (Public Health Ontario, Dec 2020).
- Syphilis rates are on the rise (our TBDHU Epidemiologist will give an overview of our local stats)
- Untreated syphilis can lead to adverse health outcomes
- Gay, bisexual and MSM populations are disproportionately affected.
- Seeing higher rates in heterosexual individuals, and congenital syphilis re-emerging.

(Public Health Agency of Canada, July 2022)

Presented by:

Adena Miller, TBDHU Epidemiologist

Thi Nguyen, RN, MPH student


November 2, 2022

Syphilis in The Thunder Bay District Health Unit

Epidemiologic Profile, Jan - Sept 2022

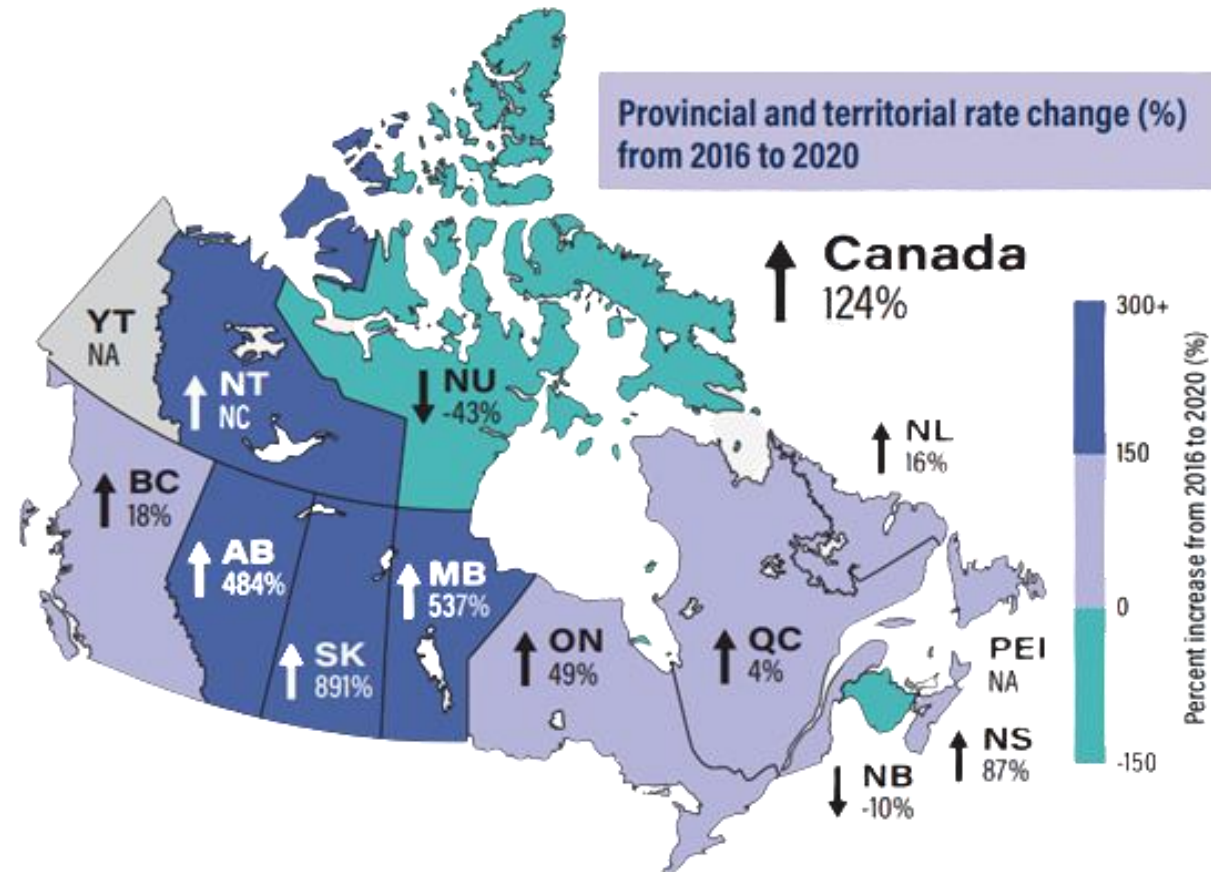
Confidential - Please Do Not Share

*Presented data is current as of Oct 13, 2022 and subject to change



Syphilis in Canada

- The national incidence rate of infectious syphilis has increased significantly from 2016 (10.7 per 100,000 people) to 2020 (24 per 100,000)
- Highest rate increases observed in Alberta, Saskatchewan, Manitoba, and NWT



(PHAC, 2021)

Syphilis Trends in Canada

Age

25 to 29 year olds had the highest rate of infectious syphilis in 2020, but highest rate increase in the last 5 years was among 15 to 24 year olds

Sexual orientation

- higher in the gbMSM population but declining ▼
- lower in the heterosexual population but increasing ▲

Male-to-female ratio

18:1
2012

3:1
2022

Congenital syphilis

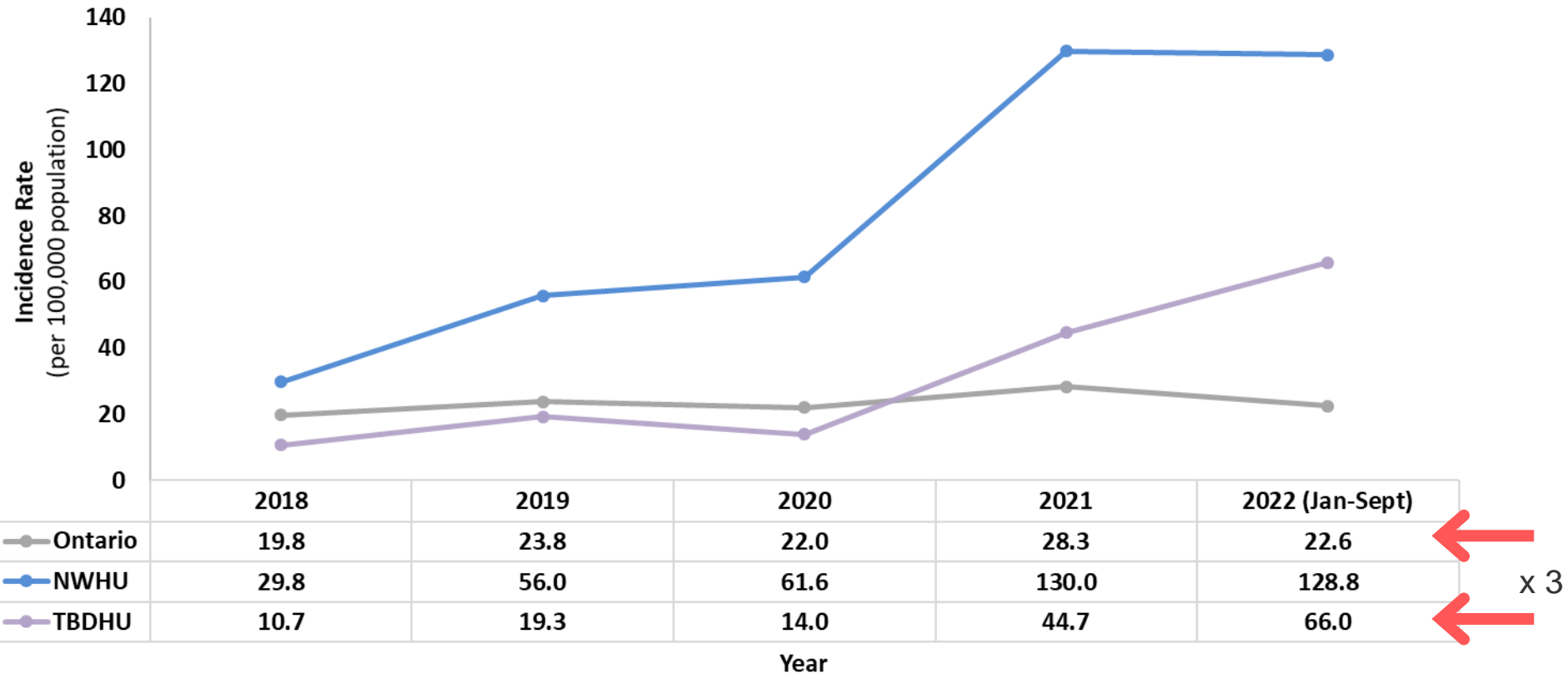
50 cases in 2020



(PHAC, 2022)

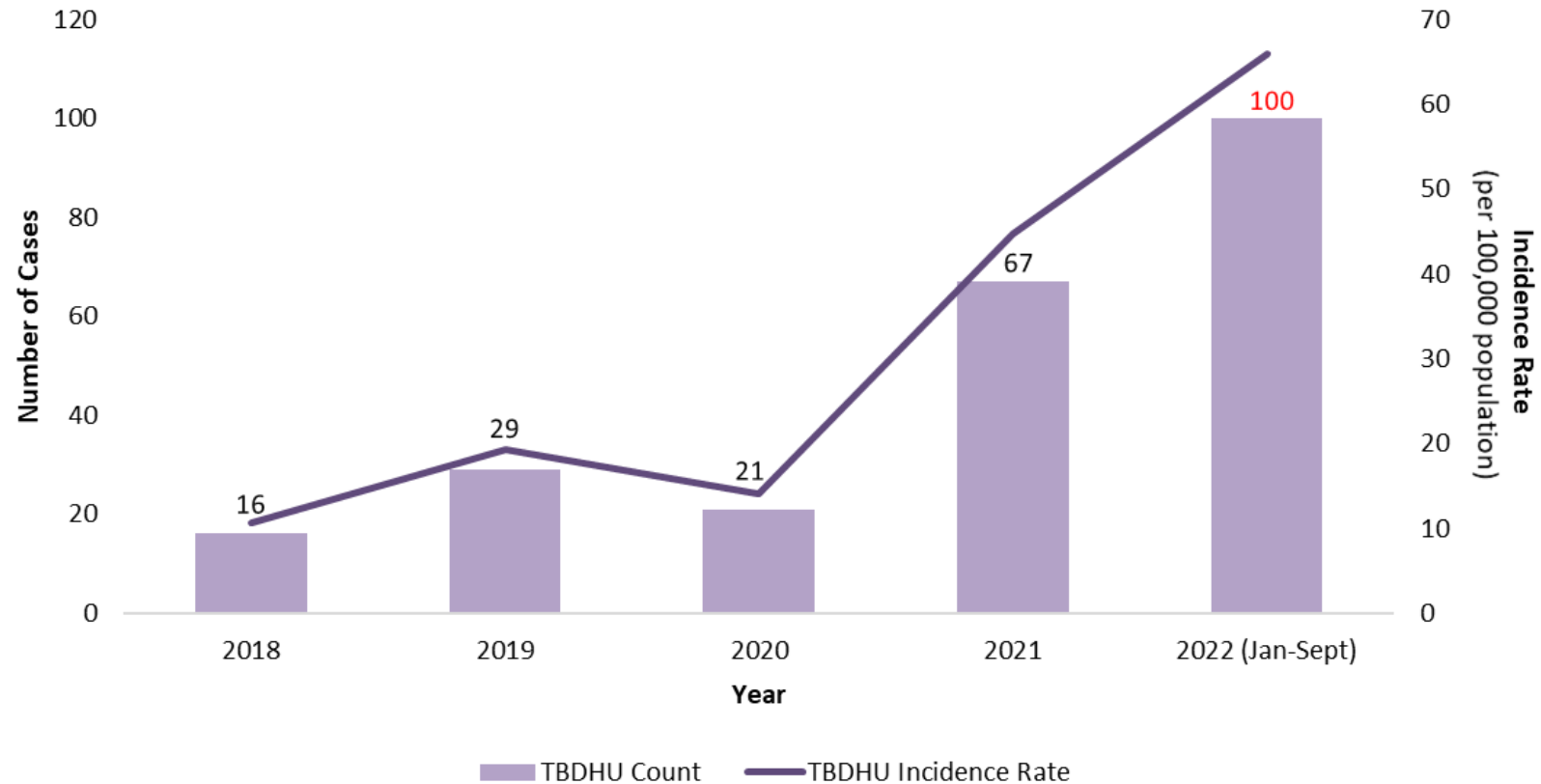
Syphilis in Ontario: NWHU & TBDHU

New syphilis diagnoses over time



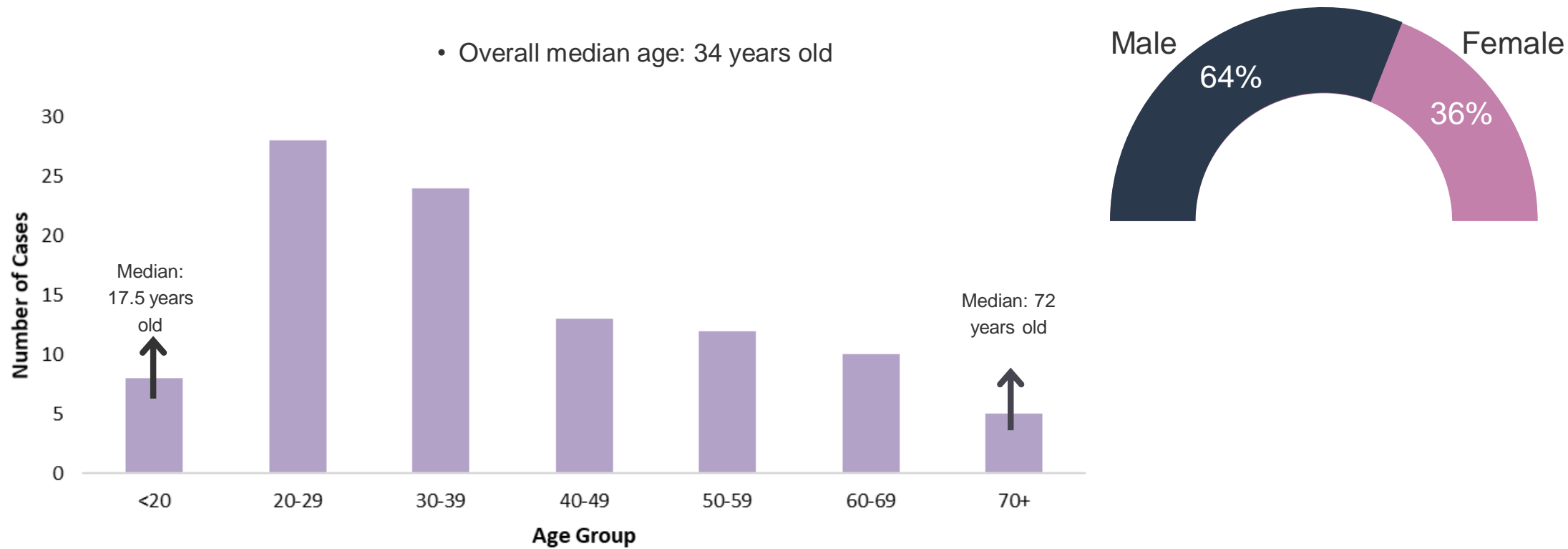
Source: PHO ID Query, extracted Oct 13, 2022

TBDHU Syphilis Case Count (2018-2022)



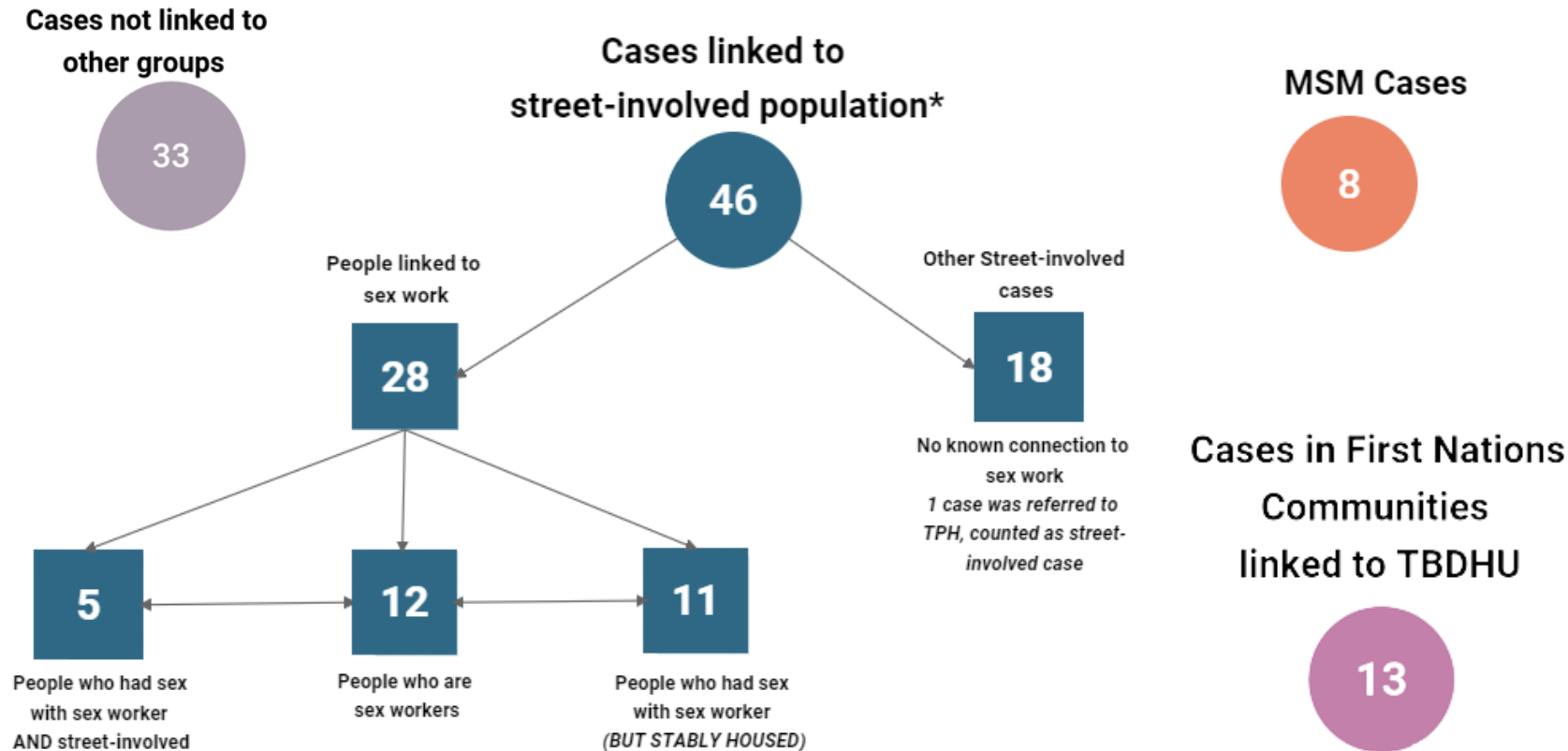
Source: iPHIS, extracted Oct 13, 2022

TBDHU Syphilis Cases by Sex and Age Group, Jan - Sept 2022



Source: iPHIS, extracted Oct 13, 2022

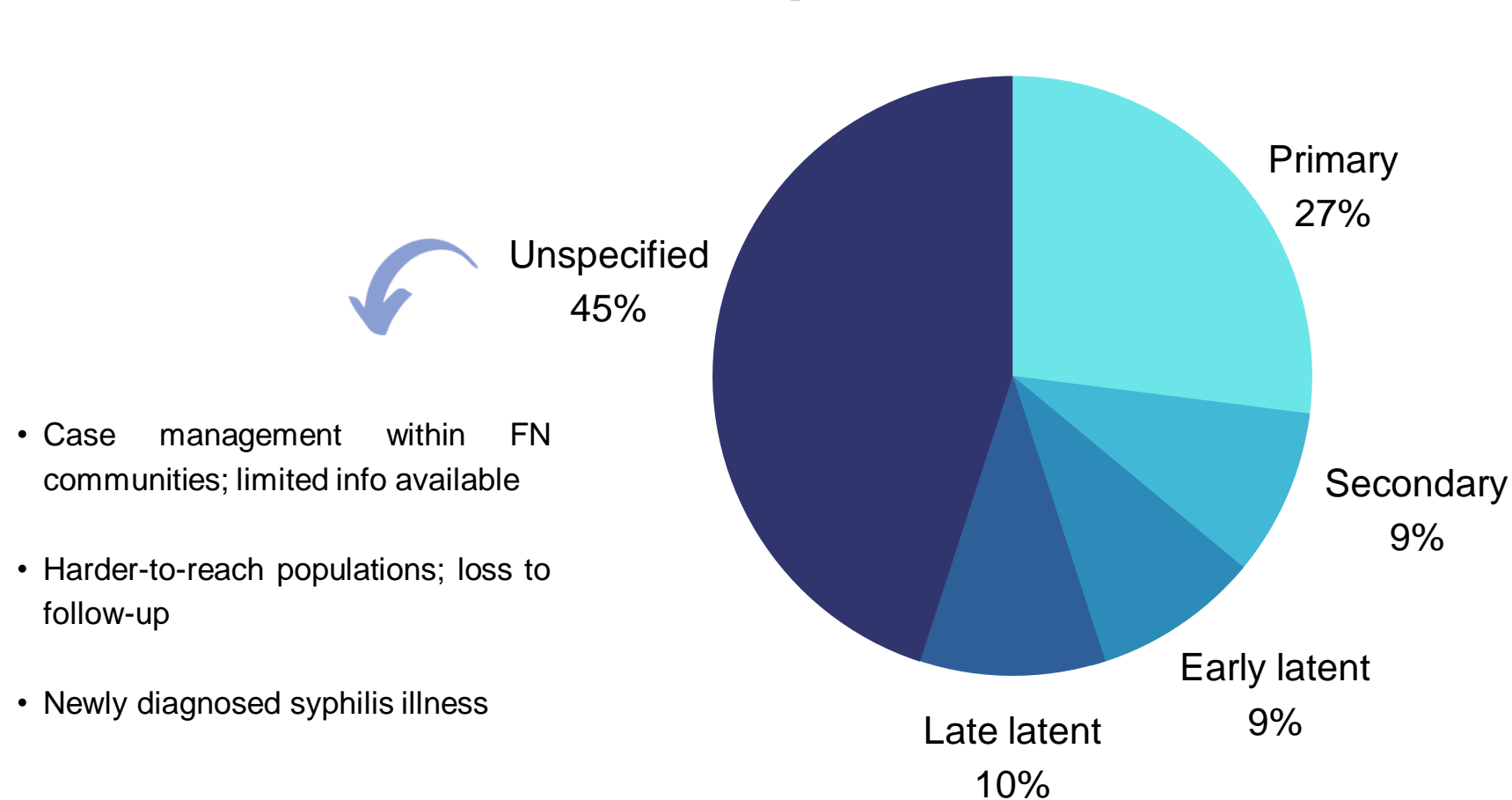
TBDHU Syphilis Cases by Group, Jan - Sept 2022



*street-involved: those experiencing homelessness or insecure housing; reliance on informal economy; uses community outreach services

total cases=100

TBDHU Syphilis Cases by Syphilis Staging, Jan - Sept 2022



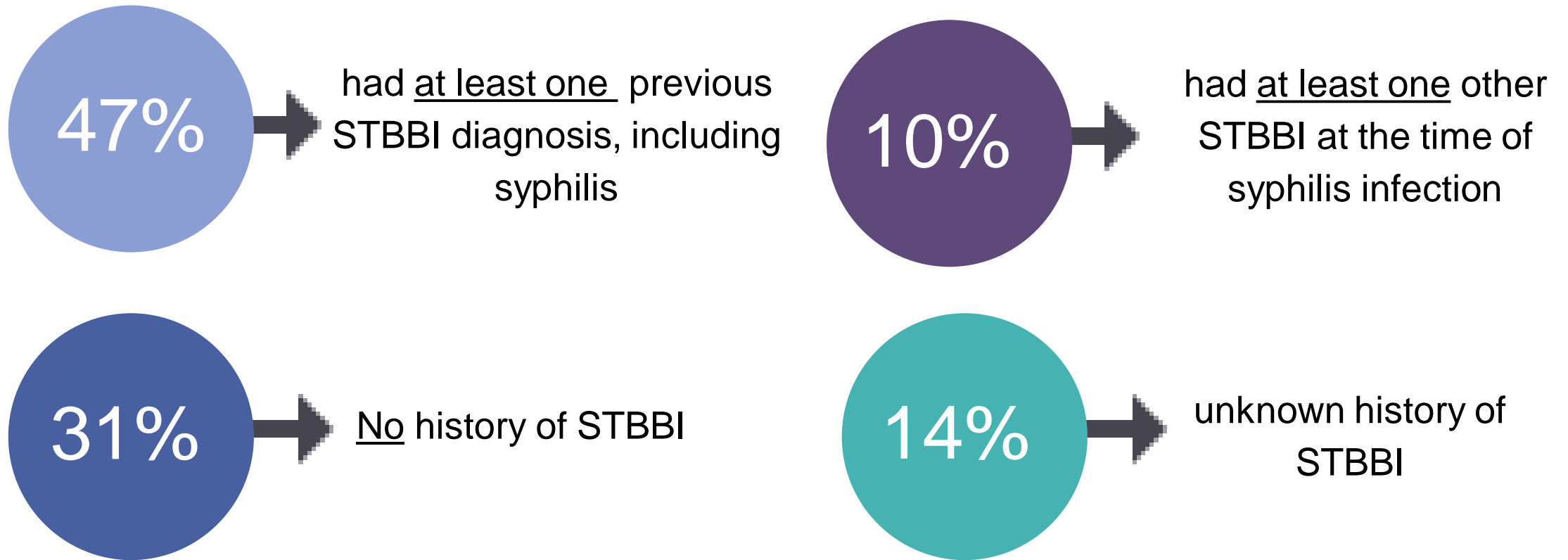
*Data caveat:

- Confirmation of staging takes time. As a result, case counts do not start to become stable for at least three months.

Source: iPHIS, extracted Oct 13, 2022

TBDHU Syphilis Cases & Other Sexually Transmitted/ Blood-borne Infections*

*Chlamydia, Gonorrhea, Hep C, Hep B, HIV



Summary: Key Points

- The number of newly-diagnosed syphilis cases is increasing rapidly, including Thunder Bay
- The local epidemiology is reflecting the syphilis trends happening in Canada:
 - More syphilis cases among heterosexual men and in women, particularly those in their reproductive ages (20-29)
- Trends in the local epidemiology can provide insights to risk factors that impact subpopulations in the community who may be at greater risk of syphilis infection; opportunities for targeted interventions
- Syphilis prevention and control will require (but not limited to) multi-sectoral collaboration including timely and detailed surveillance and a high index of suspicion among clinicians given “The Great Imitator”

Transmission

- Vaginal, oral and anal sex are primary modes of transmission
- Contact with a syphilis lesion
- Vertical transmission
- Primary, secondary and early latent are considered infectious

(Public Health Agency of Canada, Dec 2021)

Screening

- Recommended as part of routine screening for individuals with risk factors
- Recommended in pregnancy as part of prenatal care
- Screen all individuals that deliver a still birth infant > 20 weeks gestation.
- Individuals with symptoms (e.g. lesions or rashes)

(Public Health Agency of Canada, 2022; O'Byrne & MacPherson 2019)

Risk Factors

- Unprotected sexual activity (oral, genital, anal), increased risk if gbMSM.
- Contact of syphilis
- Sex with someone from a country/region with a high prevalence of syphilis
- Previous syphilis, HIV infection or other STBBI
- Born to a person diagnosed with infectious syphilis in pregnancy
- Member of a vulnerable populations
- Anonymous sex, street involvement and substance use.

(Public Health Agency of Canada , Dec 2021)

Laboratory Diagnosis

- Serology- 3 month window period.
- Dark Field/Direct Fluorescence- exudate is examined for spirochetes
- CSF- Lumbar puncture.

Dark Field: How to Guide

<https://www.publichealthontario.ca/en/laboratory-services/kit-test-ordering-instructions/syphilis-direct-fluorescence-kit>

1. Label the frosted edge of the smear side with the patient's name and date of birth.
2. Draw a circle 1 cm² in the center of the slide.
3. Wear gloves and take necessary precautions to avoid accidental infection
4. Remove the superficial layer of the lesion with the aid of sterile gauze.
5. Cleanse the lesion with sterile saline without preservatives. Dry the area. Wipe away any blood, which may collect.
6. Gently press the tissue surrounding the sore, until sufficient serous exudate is available for collection using a 1 mL syringe with needle removed.
7. For smear preparation:
 1. prepare smear by expelling the exudate into the circle
 2. **do not** spread the exudate more than 1 cm² on pre-drawn circle on the slide
 3. air dry

Dark Field: How to Guide (continued)

<https://www.publichealthontario.ca/en/laboratory-services/kit-test-ordering-instructions/syphilis-direct-fluorescence-kit>

8. Complete all fields of the requisition: include, the patient's full name, date of birth, Health Card Number (must match the specimen label), enter '*Syphilis* Direct Fluorescence' under test description, source of specimen, date of onset, date of collection, physician name and address, and clinical diagnosis.
9. Place the dry slide in a slide holder and then into the blue sealable portion of the biohazard bag that is provided.
10. Insert the completed requisition in the pocket on the outside of the sealed biohazard bag.
11. Store at 2 - 8° C until ready for shipment. Avoid extreme temperatures.
12. For further information about Syphilis - Direct Fluorescence specimen collection and testing refer to the **Test Directory Index**

Dark Field: Supplies



Dark Field: Requisition (part 1)

Public
Health
Ontario
PARTNERS FOR HEALTH

Santé
publique
Ontario
PARTENAIRES POUR LA SANTÉ

Date received

yyyy / mm / dd

PHOL No.

General Test Requisition

ALL Sections of this Form MUST be Completed

1 - Submitter

Courier Code

Provide Return Address:

Name
Address
City & Province
Postal Code

Clinician Initial / Surname and OHIP / CPSO Number

Tel: _____

Fax: _____

cc Doctor Information

Name: _____ Tel: _____
Lab/Clinic Name: _____ Fax: _____
CPSO #: _____
Address: _____ Postal Code: _____

2 - Patient Information

Health No.

Sex

Date of Birth:

yyyy / mm / dd

Medical Record No.

Patient's Last Name (per OHIP card)

First Name (per OHIP card)

Patient Address

Postal Code

Patient Phone No.

Submitter Lab No.

Public Health Unit Outbreak No.

Public Health Investigator Information

Name: _____
Health Unit: _____
Tel: _____ Fax: _____

Dark Field: Requisition (part 2)

3 - Test(s) Requested <i>(Please see descriptions on reverse)</i> Test: Enter test descriptions below Syphilis Dark Field 	Hepatitis Serology Reason for test (Check (✓) only one box): <input type="checkbox"/> Immune status <input type="checkbox"/> Acute infection <input type="checkbox"/> Chronic infection Indicate specific viruses (Check (✓) all that apply): <input type="checkbox"/> Hepatitis A <input type="checkbox"/> Hepatitis B <input type="checkbox"/> Hepatitis C <small>(testing only available for acute or chronic infection; no test for determining immunity to HCV is currently available)</small>
4 - Specimen Type and Site <input type="checkbox"/> blood / serum <input type="checkbox"/> faeces <input type="checkbox"/> nasopharyngeal <input type="checkbox"/> sputum <input type="checkbox"/> urine <input type="checkbox"/> vaginal smear <input type="checkbox"/> urethral <input type="checkbox"/> cervix <input type="checkbox"/> BAL <input checked="" type="checkbox"/> other - (specify) _____	Patient Setting <input type="checkbox"/> physician office/clinic <input type="checkbox"/> ER (not admitted) <input type="checkbox"/> inpatient (ward) <input type="checkbox"/> inpatient (ICU) <input type="checkbox"/> institution
5 - Reason for Test <input checked="" type="checkbox"/> diagnostic <input type="checkbox"/> immune status Date Collected: <input type="checkbox"/> needle stick <input type="checkbox"/> follow-up <input type="text" value="yyyy / mm / dd"/> <input type="checkbox"/> prenatal <input type="checkbox"/> chronic condition Onset Date: <input type="checkbox"/> immunocompromised <input type="text" value="yyyy / mm / dd"/> <input type="checkbox"/> post-mortem <input type="checkbox"/> other - (specify) _____	Clinical Information <input type="checkbox"/> fever <input type="checkbox"/> gastroenteritis <input type="checkbox"/> respiratory symptoms <input type="checkbox"/> STI <input type="checkbox"/> headache / stiff neck <input type="checkbox"/> vesicular rash <input type="checkbox"/> pregnant <input type="checkbox"/> encephalitis / meningitis <input type="checkbox"/> maculopapular rash <input type="checkbox"/> jaundice <input type="checkbox"/> other - (specify) _____ <input type="checkbox"/> influenza high risk - (specify) _____ <input type="checkbox"/> recent travel - (specify location) _____

PHO Result Interpretation Changes.

- Public Health Ontario has changed its confirmatory algorithm
- RPR is performed first followed by TPPA only if RPR is non-reactive.

Testing

- Initial syphilis screening test (CMIA) → Reactive.
- Followed by non-treponemal RPR
 - If RPR non-reactive, then a Treponemal TPPA test is completed (confirmatory).
 - If RPR is reactive (showing a dilution)- then a TPPA is not completed.

(Public Health Ontario, 2020)

Result Interpretation - Public Health Ontario (Nov 2020)

Interpretation of the Most Common Results Using the Revised Syphilis Algorithm

Screening Test (CMIA)	Confirmatory Test (RPR)	Confirmatory Test (TPPA)	Possible Interpretations/ Recommendations
Non-reactive	Not tested	Not tested	No confirmatory testing is performed if syphilis screen result is non-reactive <ul style="list-style-type: none">• Early incubating syphilis can be non-reactive before antibodies have developed.• If clinical suspicion of early syphilis, suggest single repeat serology in 4 weeks if not repeated already.
Reactive	Reactive	Not tested	Consistent with recent or prior syphilis infection
Reactive	Non- reactive	Reactive	Consistent with recent or prior syphilis infection
Reactive	Non- reactive	Non- Reactive	<ul style="list-style-type: none">• Results consistent with false reactive screening test.• Rare alternate interpretations include early syphilis, previously treated, or late latent syphilis.• Repeat serology in 4 weeks if not already repeated.
Reactive	Non-reactive	Indeterminate	Inconclusive syphilis serology results <ul style="list-style-type: none">• Possible interpretations include false positive, or early, old treated or untreated syphilis.• Repeat serology in 4 weeks if not already repeated.

Screening Test (CMIA)	Confirmatory Test (RPR)	Confirmatory Test (TPPA)	Possible Interpretations/ Recommendations
Reactive	Reactive	Indeterminate	Consistent with recent or prior syphilis infection
Reactive	Invalid	Not tested	Inconclusive syphilis serology results <ul style="list-style-type: none"> Advise Follow-up sample
Age < 12 Months Reactive	Reactive		<ul style="list-style-type: none"> Maternal antibody (can be present in infant for up to 12 months) Congenital infection If congenital or early syphilis is suspected, consider ordering repeat serology at the recommended intervals according to the PHAC Canadian Guidelines on Sexually Transmitted Infections, Section 5-10, Table 8(b) (see references)
Age < 12 Months Reactive	Non- reactive	Reactive	<ul style="list-style-type: none"> Maternal antibody (can be present in infant for up to 12 months) Does not rule out congenital infection If congenital or early syphilis is suspected, consider ordering repeat serology at the recommended intervals according to the PHAC Canadian Guidelines on Sexually Transmitted Infections, Section 5-10, Table 8(b) (see references)

False Positives, Inconclusive Results, Rise in RPR

E.g. + Syphilis screen, negative RPR with negative confirmatory tests = likely false positive, but could be early infection.

Or

E.g. + syphilis screen, negative RPR , indeterminate confirmatory= ? Previous positive, or could be a new infection.

Recommendations→ Repeat in 2-4 weeks to see if result has changed.

Previously diagnosed clients:

Four fold increase=new infection

If slight rise in RPR- repeat in 2-4 weeks to see if RPR rises four fold. Can be due to a lab variation.

Please use clinical judgement - history, exposures, symptoms etc. when determining if a client is re-infected or if concerned about treatment failure).

Clinical Manifestations - Primary Syphilis

- chancre (painless lesion) at the site of inoculation; usually painless, solitary, non-exudative, indurated ulcer.
 - can occur 3-90 days after infection.
 - May resolve in 3-10 weeks.
 - may go unnoticed as can be intra-anal, internal genital tract or oral.
 - Regional lymphadenopathy may occur
- (O'Byrne & MacPherson 2019;Public Health Agency of Canada, Dec 2021)

Syphilis: primary chancre

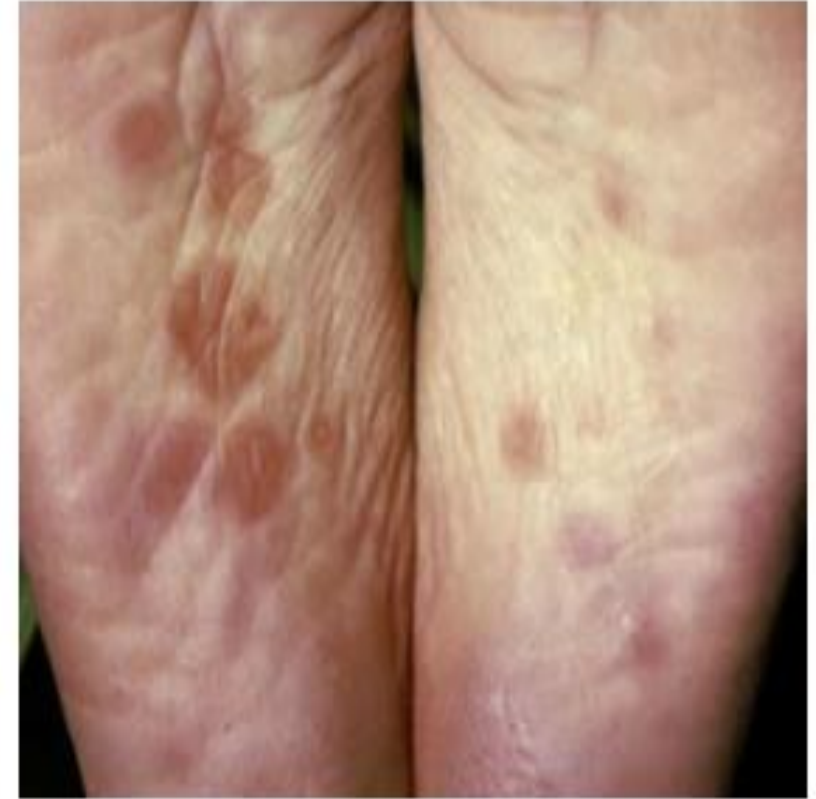


(Image source-
DermNet 2022)

Clinical Manifestations - Secondary Syphilis

- Manifestation of bacterial dissemination
- Starts with the development of a rash
- Can occur 2-12 weeks after infection and sometimes up to 6 months.
- Other symptoms may include: “rash , fever, malaise, headaches, mucosal lesions, lymphadenopathy, alopecia, condylomata lata”

Rash of secondary syphilis on trunk and limbs



Soles of feet

Syphilis & HIV

- If co-infected with HIV and syphilis, individuals can transmit HIV more easily
- Sores can be an entry point for HIV and other STI's to get inside the body
- People with HIV are at higher risk of acquiring syphilis
- Treatment options vary (1 vs 3 weeks of therapy for primary and secondary syphilis)
- Can cause damage faster
- Can be harder to treat

(CATIE, 2016)

Latent Syphilis

Early vs Late Latent.

Early Latent Syphilis

- Asymptomatic
- Infection for less than 1 year

(Public Health Agency of Canada, Dec 2021)

Late Latent

- Asymptomatic infection
- Infection for more than 1 year

(Public Health Agency of Canada, Dec 2021)

Tertiary Syphilis

- Cardiovascular
- Gumma
- Neurosyphilis

(Public Health Agency of Canada, Dec 2021)

Neurosyphilis

- Early (<1 year) and Late Neurosyphilis (> 1 year)
- Neurosyphilis may be asymptomatic or present with:
- Ataxia
- Vertigo
- Dementia
- Headaches
- Personality changes
- Argyll Robertson pupil
- Otic symptoms (e.g. tinnitus, hearing loss)
- Ocular symptoms (e.g. blurred vision, flashing lights, floaters)

(Public Health Agency of Canada, Dec 2021)

Congenital Syphilis

Early congenital syphilis

If present, symptoms often occur before the second year of life. Two-thirds of infection may be asymptomatic. Clinical manifestation includes:

- Anemia
- Neurosyphilis
- Osteochondritis
- Hepatosplenomegaly
- Mucocutaneous lesions
- Fulminant disseminated infection

(Public Health Agency of Canada, Dec 2021)

Late congenital syphilis

Clinical manifestations are usually identified two (2) years after birth and can include:

- Anemia
- Neurosyphilis
- Bone involvement
- Interstitial keratitis
- Lymphadenopathy
- Hepatosplenomegaly
- Dental abnormalities (i.e. Hutchinson's teeth)

(Public Health Agency of Canada, Dec 2021)

Congenital Syphilis

All neonates potentially exposed to syphilis should be assessed at delivery by an infectious disease specialist. If a specialist is not available, consult an experienced colleague knowledgeable in the treatment of congenital syphilis.

Infants should be treated at birth if:

- Symptomatic
- The infant's NTT is at least four (4)-fold higher than their birthing parent at birth
- Maternal treatment was inadequate, did not contain penicillin, is unknown or occurred in the last month of pregnancy, or if maternal serologic response is inadequate
- Adequate follow-up of the infant cannot be ensured
- For recommendations on the treatment of congenital syphilis for neonates exposed to syphilis, refer to the Canadian Paediatric Society article [Congenital syphilis: no longer just of historic interest](#) (see reference)

(Canadian Paediatric Society, Feb 2018)

PRACTICE POINT



Congenital syphilis: No longer just of historical interest

Posted: Apr 1, 2009 | Updated: Feb 8, 2018 | Reaffirmed: Feb 28, 2018

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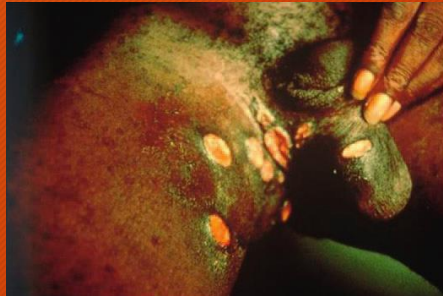
JL Robinson; Canadian Paediatric Society, Infectious Diseases and Immunization Committee

Differential Diagnosis

Differential Diagnosis: Primary Syphilis (Chancre)

Other diseases that cause genital ulcers and lymphadenopathy:

- Chancroid (Syphilitic chancres most closely resemble chancroid lesions)
- Herpes simplex (HSV)
- Behçet's disease
- Lymphogranuloma venereum
- Donovanosis / Granuloma inguinale
- Fixed drug eruption
- Psoriasis



Differential Diagnosis: Chancre vs. Chancroid

Clinical Characteristic	Disease	
	Syphilitic Chancre	Chancroid
Mode of Transmission	Mainly sexual	Mainly sexual
Cause	<i>Treponema pallidum</i>	<i>Haemophilus ducreyi</i>
Lesion Type	Pustules that may progress to ulcers	Pustules that may progress to ulcers
Lesion Pain	Typically absent	Typically present
Lesion Location	Typically genitals	Typically genitals; may occur on limbs
Lesion Size	Typically 1-2 cm in diameter	Typically 1-2 cm in diameter
Lesion Number	Multiple	1-4
Lesion Exudate	Typically non-exudative	Typically grey/yellow purulent exudate
Lesion Texture	Typically indurated	Typically soft
Lymphadenopathy	Typically present	Occurs in approx. half of patients

Differential Diagnosis: Secondary Syphilis

Must be differentiated from other causes of rash, mucus lesions, fever, malaise, etc.

- Viral xanthem
- Drug eruption
- HIV (primary infection)
- Monkeypox
- Pityriasis rosea
- Scarlet fever
- Insect bite
- Mononucleosis
- Rocky mountain spotted fever
- Rickettsialpox
- Kawasaki disease
- Yaws
- Stevens-Johnson syndrome

Differential Diagnosis: Tertiary Syphilis

- Other Neurologic Diseases:
 - Brain tumour
 - Seizure disorder
 - Stroke
 - Meningitis
 - Multiple Sclerosis
 - Headaches
- Psychosis
- Dementia
- Uveitis
- Arthritis
- Lymphadenitis
- Hepatitis
- Glomerulonephritis or Nephrotic syndrome
- Other Cardiovascular Diseases:
 - CHF
 - Aortic aneurysm
 - Aortic regurgitation
 - Coronary artery ostial stenosis

Staging

- Staging of syphilis can be difficult/complex depending on the patient's clinical symptoms, sexual history, risk factors, previous bloodwork, etc
- There are algorithms and resources to assist you.
- We utilize the Ontario Public Health Standards: Syphilis Protocol for staging and requirements for follow-up.
- If you are unsure, please call 625-8347 TBDHU Sexual Health line for assistance or refer your client to the Sexual Health Clinic.
- Syphilis is a reportable infection and you are required to complete a Health Care Reporting form to be submitted to TBDHU as per the Health Promotion and Protection Act Section 25 & 26.

(Ontario Public Health Standards, May 2022)

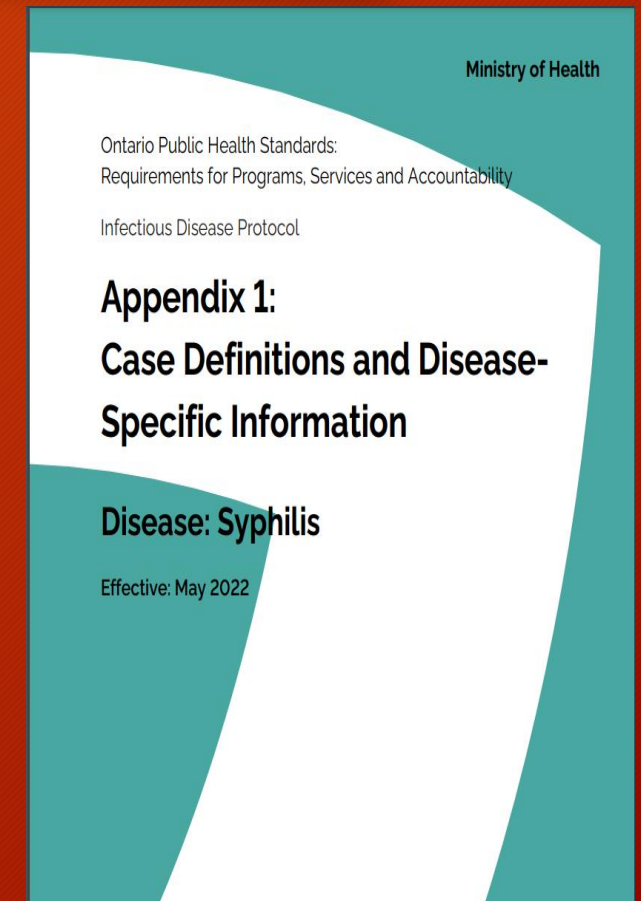
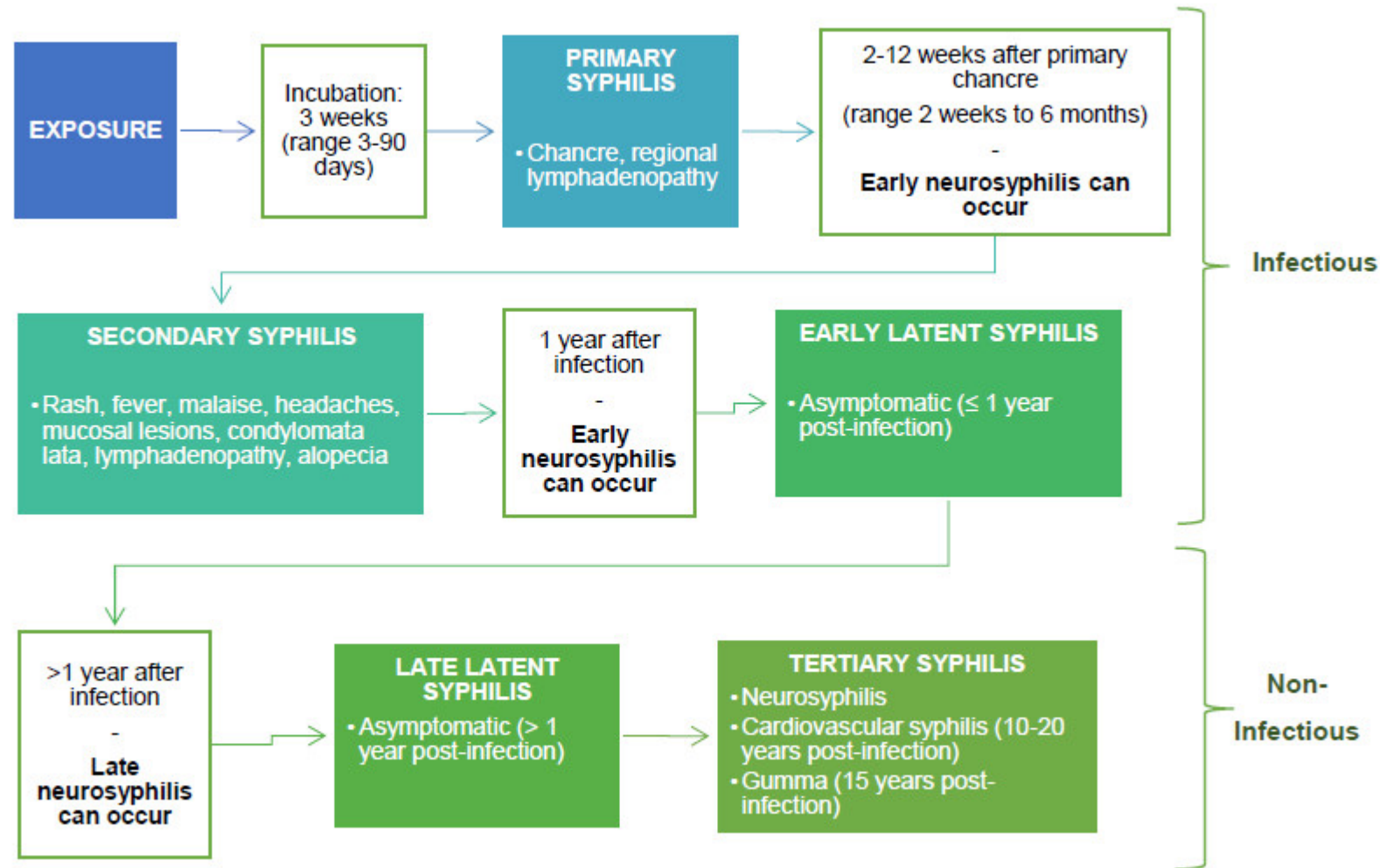


Figure 1. Summary of the natural history of untreated syphilis and its associated clinical manifestations

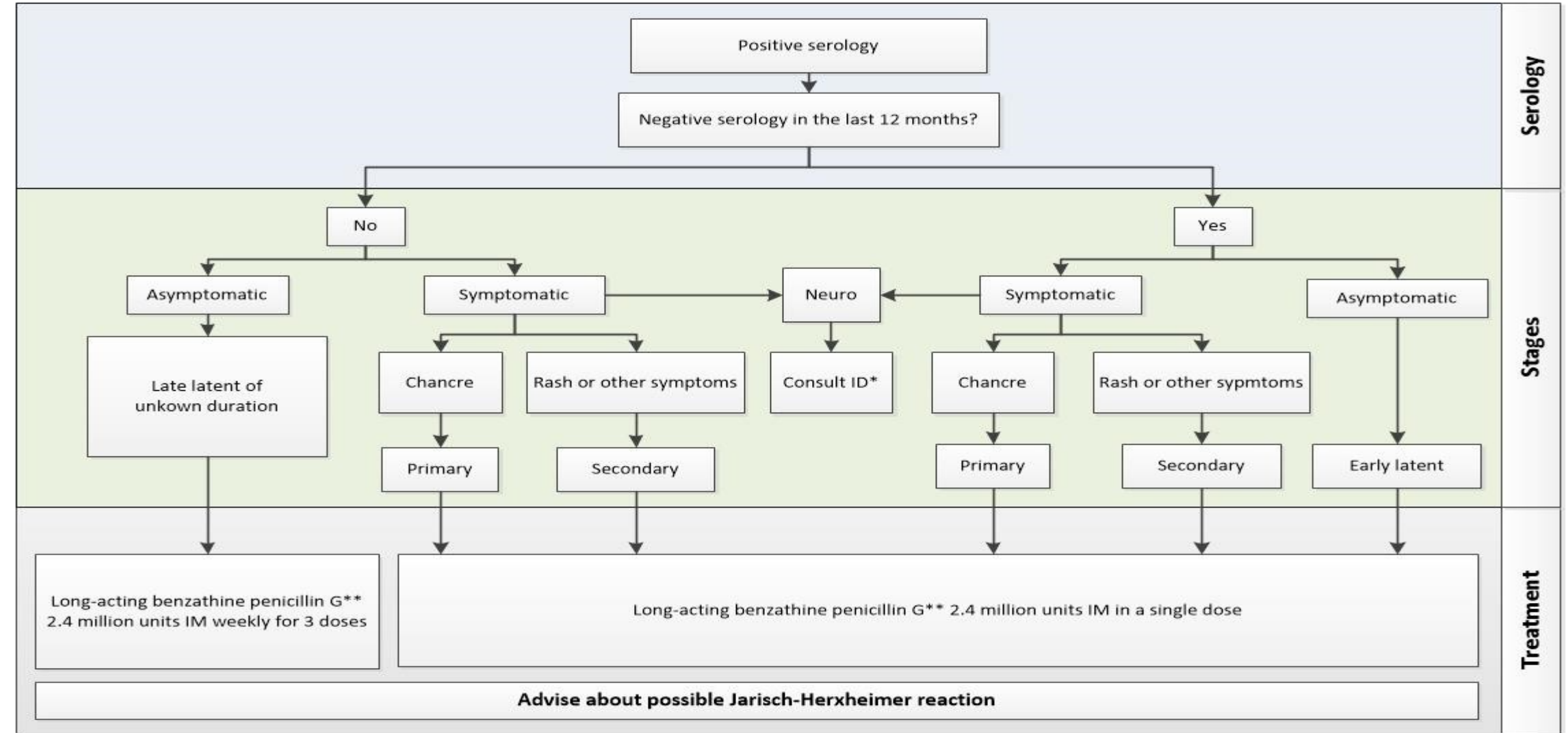


► Figure 1 - Text description

Clinical Algorithm for Syphilis Staging & Treatment

Appendix A: Clinical algorithm for syphilis staging and treatment

Figure: Clinical algorithm for syphilis staging and treatment



Treatment

- TBDHU can provide you with Benzathine penicillin G LA (Bicillin) upon request. Information for how to request treatment is also found in the provider letter that you receive from us.

Recommended treatment of syphilis in non-pregnant adults

Stage	Preferred treatment	Alternative treatment for people with penicillin allergies
Primary, secondary and early latent syphilis	Benzathine penicillin G-LA 2.4 million units IM as a single dose [A-II] 2 , 3 , 4 , 5 , 6 , 7 .	<ul style="list-style-type: none">• Doxycycline 100 mg PO BID for 14 days [B-II] 8, 9• In exceptional circumstances and when close follow-up is assured:<ul style="list-style-type: none">◦ Ceftriaxone 1 g IV or IM daily for 10 days [B-II] 10
Latent, late latent, cardiovascular syphilis and gumma	Benzathine penicillin G-LA 2.4 million units IM weekly for three (3) doses [AII] 11 , 12	<ul style="list-style-type: none">• Consider penicillin desensitization<ul style="list-style-type: none">◦ Doxycycline 100 mg PO BID for 28 days [B-II] 13• In exceptional circumstances and when close follow-up is assured:<ul style="list-style-type: none">◦ Ceftriaxone 1 g IV or IM daily for 10 days [C-III] 14
All adults: Neurosyphilis	<ul style="list-style-type: none">• Refer to a neurologist or infectious disease specialist	

Treatment- Pregnancy

- A single dose of Bicillin is effective in most cases of early syphilis
- Some experts recommend two doses of Bicillin a week apart for primary, secondary and early latent; especially in the third trimester with the rationale: difficult to stage; altered pharmacokinetics in pregnancy; effectiveness of additional doses is unknown

Recommended treatment for infectious syphilis in pregnancy

Preferred treatment	Alternative treatment for people with penicillin allergies
Benzathine penicillin G-LA 2.4 million units IM as a single dose [B-II] or Benzathine penicillin-LA G 2.4 million units IM as a single dose weekly for two (2) doses [C-III]	<ul style="list-style-type: none">• Strongly consider penicillin desensitization followed by treatment with penicillin [A-III]• There is no satisfactory alternative to penicillin for the treatment of syphilis in pregnancy. Insufficient data exist to recommend ceftriaxone in pregnancy

Syphilis Follow-Up Form Please fax back to :807-625-4866

Date:	Clinic:
Physician/NP/Midwife:	Clinic fax:
Client demographics: please confirm current address and telephone number(s)/email by filling in information below or affixing label.	
Name:	Telephone #:
Gender: AFFIX LABEL HERE	Email:
DOB (yyyy/mm/dd):	Address:

Reason for Testing		
<input type="checkbox"/> Routine	<input type="checkbox"/> Contact Tracing	<input type="checkbox"/> Prenatal <input type="checkbox"/> Immigration
<input type="checkbox"/> Symptomatic (please describe):		
Does the client have a history of previously treated syphilis infection? <input type="checkbox"/> No <input type="checkbox"/> Yes		
If YES, date of treatment:		
If YES, is reinfection suspected?		
<input type="checkbox"/> No (do NOT complete rest of form) <input type="checkbox"/> Yes (complete form)		
Has the client had previous bloodwork for syphilis?		
<input type="checkbox"/> No <input type="checkbox"/> Yes		
If YES, date of last test:		
Risk Factors (Select all that apply):		
<input type="checkbox"/> Pregnant	<input type="checkbox"/> No condom used	<input type="checkbox"/> Condom breakage
<input type="checkbox"/> Repeat infection	<input type="checkbox"/> New partner in last 2 months	<input type="checkbox"/> More than 1 partner in last 6 months
<input type="checkbox"/> Under housed	<input type="checkbox"/> Substance misuse	<input type="checkbox"/> Sex trade work
<input type="checkbox"/> Sex with opposite sex	<input type="checkbox"/> Sex with same sex	<input type="checkbox"/> Not discussed with client
<input type="checkbox"/> Incarceration	<input type="checkbox"/> Travel	
<input type="checkbox"/> Other:		

Client aware to complete follow-up serology at:

☐ 1 month ☐ 3 months ☐ 6 months ☐ 12 months ☐ 24 months

Staging and Partner Notification	Preferred Treatment	Alternative Treatment
<input type="checkbox"/> Primary <i>Notify partners from past 3 months</i> <input type="checkbox"/> Secondary <i>Notify partners from past 6 months</i> <input type="checkbox"/> Early latent <i>Notify partners from past 1 year</i>	Long-acting benzathine penicillin G 2.4 million units IM as a single dose Administered on:	Doxycycline 100 mg PO BID x 14 days Administered on:
<input type="checkbox"/> Late latent <i>Notify long-term partners and children as appropriate</i>	Long-acting benzathine penicillin G 2.4 million unit IM weekly for three (3) doses Administered on: (1) _____ (2) _____ (3) _____	Doxycycline 100mg PO BID x 28 days Administered on:
Other Stage/Treatment:		
Counseling		
Client is aware of diagnosis: <input type="checkbox"/> No <input type="checkbox"/> Yes		
In all cases, clients are to be advised to notify all contacts based on staging as above.		
<input type="checkbox"/> Client is comfortable notifying partner(s)		<input type="checkbox"/> Healthcare provider to notify partner(s)
<input type="checkbox"/> Client does not know partner(s)		<input type="checkbox"/> Public Health to help notify partner(s).
LIST PARTNER INFO HERE	LIST PARTNER INFO HERE	
LIST PARTNER INFO HERE	LIST PARTNER INFO HERE	
Advise client of all of the following:		
<input type="checkbox"/> No sexual contact for 7 days post treatment & until all sores/rashes healed	<input type="checkbox"/> No sexual contact with un-treated partner(s)	
<input type="checkbox"/> Transmission and risk factors for other STBBIs	<input type="checkbox"/> Risk reduction with condom use.	

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If you do not have first-line therapy in stock at your facility you can call the Sexual Health Clinic at 625-8347 or 1-888-294-6630 to obtain medication.

Jarisch-Herxheimer Reaction (JHR)

- Advise your client that they may feel unwell after the Bicillin injection, but normally resolves within 24 hours
- Symptoms include: headache, myalgia, chills and rigors.
- More common in secondary syphilis
- Not clinically significant unless neurologic/ophthalmic involvement or in pregnancy may cause premature labor or fetal distress.

Follow-up Serial Serology-

Recommended serological test follow-up after treatment

Stage	Frequency of post treatment serology test
Primary, secondary and early latent	<ul style="list-style-type: none">• 3, 6 and 12 months
Late latent and tertiary syphilis (except neurosyphilis)	<ul style="list-style-type: none">• 12 and 24 months
Neurosyphilis	<ul style="list-style-type: none">• 6, 12 and 24 months
Co-infected with HIV	<ul style="list-style-type: none">• 3, 6, 12 and 24 months and yearly thereafter regardless of stage

Base post treatment serology testing in previously treated pregnant people on the stage and time of previous treatment. Additional testing may be warranted if the stage of diagnosis is uncertain or there are concerns about re-infection.

People treated during pregnancy

Stage	Frequency of post treatment serology test
Primary, secondary and early latent syphilis	<ul style="list-style-type: none">• Monthly until delivery if at high risk of re-infection• 1, 3, 6 and 12-months post treatment
Late latent syphilis	<ul style="list-style-type: none">• At time of delivery and 12 and 24 months

(Public Health Agency of Canada, July 2022)

Adequate serologic response

- Earlier stages more likely to come down to non-reactive, and decline four-fold
- Titres may decline slower in people with previously treated syphilis

Stage	Adequate serologic response
Primary syphilis	<ul style="list-style-type: none">• 4-fold drop at 6 months• 8-fold drop at 12 months
Secondary syphilis	<ul style="list-style-type: none">• 8-fold drop at 6 months• 16-fold drop at 12 months
Early latent syphilis	<ul style="list-style-type: none">• 4-fold drop at 12 months

(Public Health Agency of Canada, July 2022)

Partner Notification

People diagnosed with syphilis and partners should abstain from condomless intercourse until treatment of the index case and (if indicated) all current partners is complete and ideally for seven (7) days after completion of treatment.

Stage	Trace back period
Primary syphilis	<ul style="list-style-type: none">• 3 months
Secondary syphilis	<ul style="list-style-type: none">• 6 months
Early latent syphilis	<ul style="list-style-type: none">• 1 year
Late latent/tertiary	<ul style="list-style-type: none">• Assess other long-term partners and children as appropriate. The decision to test these contacts depends on estimated duration of infection in the index case. If the stage in the index case is undetermined, consult a colleague experienced in syphilis management

Extend the length of time for partner notification to include additional time up to the date of treatment as follows:

- If the index case states that there were no partners during the recommended trace-back period, notify the last partner
- If all partners traced (according to recommended trace-back period) test negative, notify all partners prior to the trace-back period

Case 1 Resolution: 70 yo M

- Staged as Primary Syphilis
- Treated w/ Bicillin LA 2.4 million units single dose
- Advised to abstain for 7 days / until ulcer is healed
- Dark field sample collected (+ *Treponema pallidum* / syphilis organisms present)
- Contact tracing of partner from 2 months ago
- Advised to have f/u labs at 3, 6, and 12 months
- At 3 months RPR had come down to 1:1
- RPR 1:1 at 6 months
- 12 month serology pending

Case 2 Resolution: 19 yo F

- Staged as Secondary Syphilis
- Treated with Doxycycline 100 mg bid x 14 days (due to penicillin allergy as well as needle phobia)
- Advised to abstain until 7 days after treatment complete
- Only sexual partner in past 6 months was already dx'd and treated
- Syphilis Serology at diagnosis came back as Reactive with RPR 1:512
- Advised to have f/u labs at 3, 6, and 12 months
- At 3 months RPR had come down to 1:16
- 6 and 12 month serology pending

Key Takeaways

- Keep syphilis on your radar!!!
- Do a dark field on lesions that could be in keeping with a chancre
- Stage patients with syphilis in order to treat them appropriately
- Physicians can order Bicillin L-A from the Health Unit to treat patients with syphilis on a case by case basis
- Warn patients about possible Jarisch-Herxheimer Reaction (JHR) with treatment
- Counsel patients on partner notification and abstaining 7 days after treatment complete and resolution of symptoms (i.e. sore/rash)
- Follow serology after treatment
- When in doubt refer to the Public Health Agency of Canada Guidelines or contact your friendly public health nurses

Contacting Health Unit

- Any questions, or concerns, please call 807-625-8347 to speak to a Public Health Nurse
- You can order Syphilis/STI treatment by calling us or ordering online (form available on our TBDHU website: STI Medication Order form).
https://www.tbdhu.com/contact/sti_medication_order_form

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