Notification Timeline:

From Lab/Practitioner to Public Health: Within 48 hours.

From Public Health to Saskatchewan Ministry of Health: Within 2 weeks.

Public Health Follow-up Timeline: Initiate within 72 hours.

Public Health Purpose for Notification

- To prevent congenital syphilis and to minimize mortality and serious morbidity from syphilis;
- To monitor epidemiology trends of syphilis in Saskatchewan including risk factors and distribution;
- To identify locations where increased transmission may be occurring in order to inform other interventions and prevention measures;
- To monitor the effectiveness of prevention and control measures;
- To take timely and evidence informed actions on outbreaks; and
- To inform the public and medical community about syphilis and provide updated recommendations for testing and follow-up based on emerging trends;
- To support physicians/RN(NP)s in contact tracing in order to identify cases early in infection and reduce the risk of further transmission through early treatment or post exposure chemoprophylaxis;
- To identify clusters/outbreaks in order to ramp up control activities.

In the context of the ongoing syphilis epidemic in Saskatchewan and to better understand the epidemiology and to interrupt disease transmission through adequate treatment and contact tracing, "latent syphilis of unknown duration" has been specified as a new stage. ***This should not be used in place of early or late latent****, however when early or late latent cannot be definitively staged, this will enable staging and a conservative management approach as follows:*

- *Treatment of this stage will align with late latent,*
- *Contact tracing will align with early latent, and*
- *Monitoring will align with early latent.*

Table 1. Surveillance Case Definition[1]

Classification	***Stage***	***Laboratory and Clinical Criteria***
Confirmed Case (Public Health Agency of Canada, 2008)	***Primary***	Laboratory confirmation of infection: • identification of *Treponemal pallidum* by dark-field microscopy, fluorescent antibody, nucleic acid testing (PCR/NAAT) or equivalent examination of material from a chancre or a regional lymph node; **OR** • presence of one or more typical lesions (chancres), **and** reactive treponemal[a] serology, regardless of non-treponemal[b] test reactivity, in individuals with no previous history of syphilis; **OR** • presence of one or more typical lesions (chancres) **and** at least a 4-fold (e.g., 1:8 to 1:32) increase in the titre over the last known non-treponemal test in individuals with a past history of syphilis treatment.
Suspect Case (Saskatchewan Ministry of Health, 2024)	***Primary***	Exposure to a sexual partner with confirmed or suspect primary, secondary or early latent syphilis during the past six months[d] **and** <u>at least one</u> of the following: • presence of one or more typical lesions (chancres) during the past three months; • reactive serology (treponemal and non-treponemal tests)[c]; **OR** • reactive result with a syphilis point-of-care test[e] authorized for clinical use.
Confirmed Case (Public Health Agency of Canada, 2008)	***Secondary*** [f]	Laboratory evidence of infection: • identification of *T. pallidum* by dark-field microscopy, fluorescent antibody, nucleic acid testing (PCR/NAAT) or equivalent examination of mucocutaneous lesions, condylomata lata and reactive serology (non-treponemal and treponemal); **OR** • presence of typical mucocutaneous lesions, rash (especially on palmar aspects of hands, soles of feet, trunk), alopecia, loss of eyelashes and lateral third of

[1] Surveillance case definitions ensure uniform reporting to allow comparability of surveillance data. The definition is not intended to be used for clinical or laboratory diagnosis or management of cases. Refer to Section 5-75 Congenital Syphilis for congenital syphilis surveillance case definitions.

Classification	***Stage***	***Laboratory and Clinical Criteria***
		eyebrows, iritis, generalized lymphadenopathy, fever, malaise or splenomegaly, **AND** either a reactive serology (non-treponemal and treponemal) **OR** a four-fold (e.g., 1:8 to 1:32) or greater increase in titre over the last known non-treponemal test.

Suspect Case (Saskatchewan Ministry of Health, 2013)	***Secondary***	• presence of typical signs or symptoms of secondary syphilis (e.g., mucocutaneous lesions, alopecia, loss of eyelashes and lateral third of eyebrows, iritis, generalized lymphadenopathy, fever, malaise or splenomegaly); **AND** reactive serology (non-treponemal and treponemal) with non-treponemal titre >/=1:4.
		OR
		• presence of typical signs or symptoms of secondary syphilis (e.g., mucocutaneous lesions, alopecia, loss of eyelashes and lateral third of eyebrows, iritis, generalized lymphadenopathy, fever, malaise or splenomegaly); **AND** at least one of the following:
		  ◦ exposure to a sexual partner with confirmed or suspect primary, secondary or early latent syphilis in the past nine months[g]
		  ◦ reactive result with a syphilis point-of-care test[e] authorized for clinical use

Confirmed Case (Public Health Agency of Canada, 2008)	***Early Latent Syphilis (< 1 year after infection)***	Laboratory confirmation of infection:
		• An asymptomatic patient with reactive serology (non-treponemal and/or treponemal) who within the past 12 months had <u>one</u> of the following:
		  ◦ non-reactive serology;
		  ◦ symptoms suggestive of primary or secondary syphilis;
		  ◦ exposure to a sexual partner with primary, secondary or early latent syphilis.

Suspect Case (Saskatchewan Ministry of Health, 2024)	***Early Latent Syphilis (< 1 year after infection)***	An asymptomatic patient with reactive serology (non-treponemal and/or treponemal) who has evidence of having acquired the infection within the previous 12 months based on <u>one or more</u> of the following: • first exposure to a sexual partner occurred within the previous 12 months; • four-fold or greater increase in the titre of a non-

Classification	***Stage***	***Laboratory and Clinical Criteria***
		treponemal test within the previous 12 months; • has a RPR titre of ≥ 1:16 **and** is a member of (or has had sexual partners in the previous 12 months from) groups at known increased risk of syphilis infection. **OR** An individual who has had symptoms of primary or secondary syphilis within the past 12 months and at least one of the following: • is a member of (or has had sexual partners in the previous 12 months from) groups at known increased risk of syphilis. • reactive result with a syphilis point-of-care test[e] authorized for clinical use
Confirmed Case (Adapted from Public Health Agency of Canada, 2008)	***Late Latent Syphilis (> 1 year after infection)***	Laboratory confirmation of infection: • An asymptomatic patient with persistently reactive treponemal serology (regardless of non-treponemal serology reactivity) who does not meet the criteria for early latent disease and who has not been previously treated for syphilis, **AND**: • who has evidence of having acquired the infection >12 months ago based on <u>one or more</u> of the following: o last exposure to a sexual partner occurred >12 months ago; o documented seroconversion or four-fold or greater increase in the titre of a non-treponemal test >12 months ago.
Confirmed Case (Adapted from PHAC 2008)	***Latent Syphilis of Unknown duration***	An asymptomatic patient with persistently reactive treponemal serology (regardless of non-treponemal serology reactivity) who does not meet the criteria for suspect or confirmed early latent or late latent disease, **AND** • available information is insufficient to determine the duration of infection.

Classification	***Stage***	***Laboratory and Clinical Criteria***
Confirmed Case (adapted from Public Health Agency of Canada, 2008)	***Neurosyphilis[h]***	Laboratory confirmation of infection: • Meets the case definition for any stage of syphilis **AND** one of the following: ▪ reactive CSF-VDRL (Venereal Disease Research Laboratory) in non-bloody cerebrospinal fluid (CSF); ▪ clinical evidence of neurosyphilis **AND** either elevated CSF leukocytes **OR** elevated CSF protein in the absence of other known causes.
Suspect Case (adapted from BCCDC, 2019)	***Neurosyphilis[h]***	• Meets the case definition for any stage of syphilis; **OR** Reactive treponemal serology (regardless of non-treponemal serology reactivity); • **AND** clinical presentation of neurosyphilis in the absence of other known causes.
Confirmed Case (Public Health Agency of Canada, 2008)	***Tertiary Syphilis Other Than Neurosyphilis***	Laboratory confirmation of infection: • reactive treponemal serology (regardless of non-treponemal test reactivity) together with characteristic abnormalities of the cardiovascular system, bone, skin or other structures, in the absence of other known causes of these abnormalities (*T. pallidum* is rarely seen in these lesions although, when present, is diagnostic); **AND** • no clinical or laboratory evidence of neurosyphilis.

[a] Treponemal test refers to the Treponema pallidum-Particle Agglutination (TPPA). See Lab Results and Interpretation section for more information.
[b] Non treponemal test refers to the Rapid Plasma Reagin (RPR). See Lab Results and Interpretation section for more information.
[c] A second serological sample to identify a RPR titre change has not been taken yet or waiting for results.
[d] Six months allows for sexual contact during a three-month incubation (transmission) period of the source person plus an ensuing three-month incubation period of the case being reported.
[e] INSTI Multiplex HIV-1/HIV-2/Syphilis Antibody Test (INSTI multiplex test) is authorized for use in Canada
[f] NOTE: The possibility of a prozone reaction should be considered in individuals who are suspected of having secondary syphilis but whose non-treponemal test is non-reactive. Prozone reaction is a false negative rapid plasma reagin (RPR) from the presence of excess antibody. The antigen-antibody reaction is blocked. Occurs in approximately 1% of secondary syphilis cases. Lab should be notified if this is a concern.
[g] Nine months allows for sexual contact during a three-month incubation (transmission) period after first contact with a source person plus an ensuing six-month infected period of the case being reported.
[h] Neurosyphilis can be further specified as early or late: Infectious or early Neurosyphilis is < 1 year after infection; non-Infectious or late Neurosyphilis is > 1 year after infection.

Table 1a. Additional Definitions for Surveillance and Indicator Monitoring

Reinfection (PHAC, unpublished)	A person previously diagnosed with and appropriately treated for syphilis who has: • identification of *T. pallidum* by nucleic acid detection (PCR or equivalent), fluorescent antibody or equivalent examination of a mucocutaneous lesion OR • a four-fold or greater increase in titre over the previous known non-treponemal titre [a] OR • new clinical symptoms suggestive of acute syphilis infection (e.g., new chancre or rash) AND insufficient reduction in non-treponemal titres OR • exposure to a sexual partner with primary, secondary or early latent syphilis AND insufficient reduction in non-treponemal titres

[a] Caution must be taken when interpreting if serology was not drawn at time of treatment as it may look like the titer is rising when in fact it is down from treatment day.

Refer to Attachment – Documenting Syphilis Site and Stage in Panorama for reference.

Epidemiology and Occurrence

Infectious syphilis is the least common of the three nationally reportable sexually transmitted infections (STIs) (i.e. syphilis, chlamydia, and gonorrhea). Risk factors for acquiring infectious syphilis differ among clients but are similar to those acquiring the more common STIs, chlamydia and gonorrhea. In Canada, most of the clusters have been related to the sex trade and in men who have sex with men (MSM). Injection drug use was seldom reported by infectious syphilis cases. Saskatchewan's main risk factors for contracting syphilis between 2018 and 2022 include not using condoms, having a previous STI, alcohol and drug use, and having multiple sexual partners. The frequency of MSM and anonymous partners has decreased in the same timeframe.

Prior to 2018 in Saskatchewan, most syphilis cases occurred among men who have sex with men, however in 2018, there was an increase in cases in women of childbearing age, including pregnant women. Syphilis in pregnancy is of concern because of the risk of passing the infection to the baby in utero or possibly during delivery. The first congenital syphilis cases in Saskatchewan since 2011 were reported in 2019.

Additional Background Information

Infectious Agent

Treponema pallidum, a spirochete bacterium.

After initial invasion, the syphilis organism multiplies rapidly and disseminates widely. The organism spreads through the perivascular lymphatics and then the systemic circulation before clinical development of the primary lesion. When untreated, syphilis is a lifelong infection that progresses through 4 stages (primary, secondary, latent, and tertiary) (Euerle, 2012).

Signs and Symptoms

Table 2. Clinical Manifestations by Stage

Stage	Infectiousness	Clinical Manifestations	Incubation Period
Primary	**Infectious**	Chancre, regional lymphadenopathy (localized reaction)	3 weeks (3-90 days)
Secondary		Rash (especially on palmar aspects of hands, soles of feet, trunk) fever, malaise, lymphadenopathy, mucosal lesions, condylomata lata, alopecia, meningitis, headaches, uveitis, retinitis (systemic reaction)	2-12 weeks (2 weeks to 6 months)
Early Latent		Asymptomatic	
Neurosyphilis	**Infectious** < 1 year **Non-infectious** >1 year	Ranges from asymptomatic to symptomatic with headaches, vertigo, personality changes, dementia, ataxia, presence of Argyll Robertson pupil, otic symptoms (e.g. hearing loss), ocular symptoms (e.g. visual disturbances). Early neurosyphilis (<1 year- infectious) manifestations include meningitis, ocular involvement, and meningovascular disease. Late neurosyphilis (>1 year – non-infectious) manifestations may include general paresis or tabes dorsalis.	Can occur at any stage, up to 20 years or more after infection if not treated

Stage	Infectiousness	Clinical Manifestations	Incubation Period
Latent syphilis unknown duration	May be infectious or non-infectious[2]	Asymptomatic	
Late Latent	**Non-infectious** >1 year	Asymptomatic	
Tertiary		Cardiovascular syphilis may include aortic aneurysm, aortic regurgitation, coronary artery ostial stenosis	10-20 years
		Gumma includes tissue destruction of any organ; manifestations depend on site involved	1-46 years (average or median 15 years)

Source: Adapted from Canadian Guidelines on Sexually Transmitted Infections, 2022 and BCCDC, 2020.

Reservoir
Humans. Previous infection with syphilis does not induce long-term immunity; re-infection is possible.

Incubation Period
Can be between 3 days to 3 months, most commonly 3 weeks. See Table 1 above.

Period of Communicability
Communicability exists when moist mucocutaneous lesions of primary and secondary syphilis are present. The distinction between the infectious primary and secondary stages and the non-infectious early latent stage of syphilis is somewhat arbitrary with regard to communicability, since primary and secondary stage lesions may not be apparent to the infected individual. Lesions of secondary syphilis may recur with decreasing frequency up to 4 years after infection, but transmission of infection is rare after the first year.

In many countries, infectious early syphilis is usually defined as ending after the first year of infection.

[2] Latent syphilis of unknown duration is used when clinicians are not able to distinguish between early and late latent due to unclear clinical and exposure history. Individuals who are considered latent syphilis of unknown duration should be treated for late latent and contact traced as early latent. Post-treatment serology in accordance with early latent with an additional test at 24 months.

Mode of Transmission
The primary mode of transmission is by vaginal, anal and oral sexual contact. Primary, secondary and early latent stages are considered infectious, with an estimated risk of transmission per partner of around 60%. Early latent syphilis is considered infectious because there is a 25% chance of relapse to the secondary stage. Kissing, sharing of needles and injection equipment, blood transfusion or receipt of donated tissue, and accidental inoculation have rarely been reported as routes of transmission.
Breastfeeding by mothers with primary or secondary lesions of syphilis carries a theoretical risk of transmission of syphilis to the baby.
Syphilis can also be transmitted vertically from an infected pregnant woman to the fetus. The majority of infants with congenital syphilis are infected in utero, but they can also be infected by contact with an active genital lesion at the time of delivery.

Risk Factors
Risk factors that are most often associated with syphilis include:

- Unprotected sexual activity involving contact with oral, genital, or anal mucosa;
- men who have sex with men (MSM);
- contact with a known case;
- street involvement;
- sex trade (providing or receiving food, shelter, money or drugs in exchange for sex);
- substance use including injection or non-injection drugs;
- multiple sexual partners (>2 in past 3 months);
- history of previous diagnosis of syphilis, other STIs or HIV;
- E-partnering (using sex apps); and
- Unknown or anonymous liaisons.

Specimen Collection and Transport

Refer to the RRPL Compendium of Tests https://rrpl-testviewer.ehealthsask.ca/

Lab Reports and Interpretation
The diagnosis of syphilis is primarily performed through a combination of treponeme-specific and treponeme non-specific serology tests, correlated with clinical presentation and treatment history.

A positive Treponemal test is necessary to establish a diagnosis of syphilis. These tests measure antibodies specific for *T. pallidum*, become positive soon after infection, and typically remain positive for life with or without adequate treatment. Unfortunately,

these tests do not differentiate between *T. pallidum* subspecies *pallidum* which causes syphilis, and other endemic trepanematoses such as yaws, pinta and bejel (important for follow up of immigrants).

Nontreponemal tests are useful to monitor treatment response, to determine the stage of infection, and to detect a reinfection in previously treated individuals. These nonspecific antibodies develop 4-8 weeks following infection, with seroreactivity occurring in 70% of patients within 2 weeks of developing a chancre and in 100% of patients with secondary and latent disease. The semi-quantitative titers from non-treponemal tests involve a subjective interpretation and should be considered +/- 1 dilution (i.e. a change of 1 dilution between tests should be considered non-significant).

In Saskatchewan, a 'reverse algorithm' is used to test for syphilis. This means all serology samples undergo a treponeme-specific test first (*T. pallidum* total antibody test or "Syphilis Screen"). If this test is positive, the sample will automatically be tested for the nontreponemal Rapid Plasma Reagin (RPR). If the RPR is reactive, it will be diluted to determine a semi-quantitative titers. If the RPR is non-reactive, any newly positive case will have a second treponeme-specific test (*Treponema pallidum*-Particle Agglutination, or TP-PA) performed to rule out a false positive screening test result. The TP-PA is always performed on samples from patients <18 months of age.

Refer to the RRPL Syphilis Laboratory Testing Algorithm at https://rrpl-testviewer.ehealthsask.ca/ for the interpretation of potential test result combinations.

On March 27, 2023, Health Canada authorized the use of Biolytical's INSTI® Multiplex HIV-1/2 Syphilis Antibody Test which is the first syphilis point of care test (POCT) approved in Canada. All POCT results are considered preliminary and further in-lab testing is required to confirm these results. These tests are similar to the initial Syphilis Screen performed in the laboratory, but are approximately 85-95% as sensitive. One of the challenges of the syphilis POCTs is that a positive test result cannot distinguish between a new and an old (previously treated or late stage, untreated) infection. In order to confirm the diagnosis and stage the infection, POCT results require subsequent laboratory-based testing. Before providing treatment based on a syphilis POCT result, a number of other pieces of information need to be taken into consideration, including the presence of any symptoms of syphilis, previous history of treatment for syphilis, and previous laboratory test results.

Direct detection of *T. pallidum* organisms is possible using molecular testing (i.e. polymerase chain reaction, PCR) or histopathology examination. Darkfield microscopy is no longer available. Histopathology can be performed on biopsies of primary or

secondary syphilis lesions, and on tissue from the placenta, umbilical cord, or autopsy samples from a suspected stillbirth. PCR can be performed on swabs from moist mucocutaneous lesions of primary or secondary syphilis, nasopharyngeal swabs of suspected congenital cases, or on samples from a suspected still birth. These direct detection methods are highly specific when positive, but lack sensitivity so negative results do not rule out infection.

Public Health Investigation

I. Case

Investigation and follow up required of all confirmed and suspect cases.
Refer to Attachment – Syphilis Data Collection Worksheet to assist.

History

- Key elements to inquire about include:
  - Onset of illness and current signs and symptoms;
  - Determine if pregnant in the case of women of childbearing age.
  - Determine incubation period and period of communicability which helps to identify contacts to be followed – accurate staging of illness is important to determine period of communicability.
  - Underlying medical conditions and severity of illness (e.g. if hospitalization was required).
  - Treatment details (with what and when as it may alter period of communicability)
  - Identify contacts (refer to Table 4 – Definitions of Contacts)
  - History of travel may be of significance in contact tracing as well as it may be useful in determining potential source and exposure locations.

Public Health Interventions

Assessment

- It is important to know if the client is aware of their diagnosis or if the testing provider has not yet been able to notify the case.
- Assess for contacts.

Communication

- The ordering practitioner should be contacted to discuss circumstances of the case and follow up completed such as staging, treatment, contact tracing, etc if this detail has not been communicated to public health.
- Provide communications to those serving at-risk populations or sites known to be frequented by cases (e.g. dating apps, bars, social media)
- Individuals may be difficult to reach. Make several attempts to contact individuals using various methods (phone, text, home visit) at different times of the day. Some

individuals' mobile service contracts only allow for text messaging. It is important to have policies and procedures that support the use of alternate modes of communication to assist in case follow-up.

Education

- All cases should be provided disease information as well as information on prevention and control measures including:
  - Safer sex practices;
  - Period of abstinence to prevent reinfection;
    - To prevent continued spread of infection, people diagnosed with syphilis and their sexual partners should abstain from sexual contact until treatment of the index case and (if indicated) all current partners is complete and ideally for seven days after completion of treatment (multiple doses may be required – i.e., co-infected with HIV, etc). If the client has any lesions, abstinence should be extended until all lesions have healed.
  - Blood donation deferral periods;
  - Partner notification;
  - Follow-up testing frequency – As per Table 2.

Immunization

- There is currently no vaccine available for syphilis prevention.
- Cases and contacts should be offered any immunizations (e.g., hepatitis B vaccine, etc.) they may be eligible for based on the Saskatchewan Immunization Manual, Chapter 7.[3]

Referral

Cases should be referred to:

- Physician for staging, treatment, follow up serology, and any other necessary follow-up.
- Social programs as agreed to by client or harm reduction programs for needle exchange services and related health services if appropriate;
- Canadian Blood Services (CBS) if the case has a history of donation or receipt of blood or blood products. See Appendix K – Notification to Canadian Blood Services.
- Saskatchewan Transplant Program if the cases has a history of donation or receipt of tissues. See Appendix M – Notification to the Saskatchewan Transplant Program.

[3] http://www.ehealthsask.ca/services/manuals/Documents/sim-chapter7

Testing (Public Health Agency of Canada, 2023)

- Follow-up serology (non-treponemal tests [RPR]) is important to ensure that treatment has been effective. The following tables indicate the recommended timeframes for post-treatment serology and adequate serologic response.
- To ensure that NTT titre is not rising, some experts recommend follow-up testing start one month after treatment for those with primary, secondary, early latent syphilis and for those co-infected with HIV.
- Additional testing may be warranted if stage of diagnosis is uncertain or there are concerns about re-exposure or re-infection.

Table 3. Recommended serological test follow-up after treatment

Stage	Frequency of post-treatment serology test
Primary, secondary, early latent	1, 3, 6, 12 months after treatment. If treated during pregnancy, test monthly until delivery if at high risk of re-infection and 1, 3, 6 and 12 months after treatment.
Latent syphilis of unknown duration	1, 3, 6, 12 and 24 months after treatment is recommended. If treated during pregnancy, test monthly until delivery.
Late latent, tertiary	12 and 24 months after treatment. If late latent and treated during pregnancy, test at time of delivery, 12 and 24 months after treatment.
Neurosyphilis	If infectious, testing should be done at 1, 3, 6, 12, and 24 months after treatment. If non-infectious, testing should be done at 6, 12 and 24 months after treatment. Patients with CSF abnormalities require follow up CSF at 6 monthly intervals until normalization of CSF parameters. Other clinical follow up may be indicated on a case by case basis.
HIV-infected (any stage)	1, 3, 6, 12 and 24 months after treatment and yearly thereafter.

Source: Adapted from Canadian Guidelines on Sexually Transmitted Infections, 2022.

Table 4. Adequate serologic response in infectious syphilis following treatment

Stage	**Adequate serologic response following last dose of treatment**
Primary syphilis	4-fold drop at 6 months 8-fold drop at 12 months
Secondary syphilis	8-fold drop at 6 months 16-fold drop at 12 months
Early latent syphilis	4-fold drop at 12 months
Latent syphilis of unknown duration	4-fold drop at 12-24 months or stable low titer (e.g., <1:4). If >32 dilutions; it should decrease by at least 4-fold by 12-24 months post-treatment.

Source: Adapted from Canadian Guidelines on Sexually Transmitted Infections, 2022 and New York City Department of Health and Mental Hygiene Bureau of Sexually Transmitted Infections, 2019

Treatment

See Attachment – STI Treatment Guidelines for reference, however, refer to the latest version of the Canadian Guidelines on Sexually Transmitted Infections for current treatment guidelines.

- Persons co-infected with HIV may require a longer course of treatment, as well as closer and longer follow-up.
- Consider consultation with an infectious diseases specialist for any complicated cases, all cases of neurosyphilis, or if additional assistance required.

II. Contact/Contact Investigation

Contact Definition

Contacts to syphilis are identified based on the stage of syphilis in the index case and include any sexual or perinatal contacts of the case that occurred within the following timeframes (Table 5). Although transmission through needle-sharing is rare, follow-up of needle-sharing partners should be considered, as social contacts from similarly vulnerable populations may share sexual networks. To prevent further transmission, attempts must be made to identify, locate, test and treat contacts per Table 6.

Table 5. Partner Notification

Stage of syphilis (Index Case)	**Time Period**
Primary syphilis	3 months prior to the onset of symptoms.

Secondary syphilis	6 months prior to the onset of symptoms.
Early latent	1 year prior to the diagnosis.
Latent syphilis of unknown duration	1 year prior to the diagnosis, marital and other long-term partners and children as appropriate.
Late latent	Assess marital or other long-term partners and children as appropriate.
Early neurosyphilis	1 year prior to the diagnosis.

Source: Adapted from Canadian Guidelines on Sexually Transmitted Infections, 2022.

Partner notification should include partners up to the date or treatment.

- 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 (Public Health Agency of Canada, 2023).

Public Health Interventions

Assessment

- Assess for symptoms.

Education

All contacts should receive counselling regarding:

- communicability, incubation period, transmission, and signs and symptoms of syphilis;
- the risk for re-exposure;
- ways to reduce their future risk of exposure;
- the importance of abstinence during entire incubation period and until serologic testing at the end of the incubation period has been confirmed to be non-reactive;
- the need for and timing of follow-up serology;
- the follow-up recommended in the event that they develop signs and symptoms including abstaining from sexual contact until they have seen a primary care provider for re-assessment.

Referral

- Refer symptomatic individuals to their primary care provider

Prophylaxis/Abstinence/Follow-up Testing

All contacts should be tested for syphilis to determine their baseline status. Follow-up serology should be based on the date of last sexual exposure to the index case[4]. This date should be included on Contact Referral forms when referring a contact to an outside health authority or jurisdiction.

[4] The date of exposure should be included on the contact referral form. If this date is unknown date of contact notification should be used.

Table 6. Management of Contacts to a Lab Confirmed Case of Infectious Syphilis

Sexual contact with case occurred in the last 90 days:	
Treatment	These contacts should all be offered epidemiologic (presumptive) *treatment* with a single dose of bicillin (if no penicillin allergy) at the same time their baseline serology is collected (this should be done at their first appointment).
Period of Abstinence	• Clients should be encouraged to abstain from all sexual contact with others for 7 days following the completion of treatment. • Condoms should be advised and encouraged for all sexual encounters.
Follow-up Serology	• Treated contacts should be asked to return for *follow-up serology* at **30** days post exposure (unless their initial baseline testing was conducted close to 30 days post exposure) and again at **90** days after their last encounter with the index case.

If exposure was more than 90 days ago, individuals who are found to have non-reactive serology and do not have any signs or symptoms can be considered to be uninfected (New York City Department of Health and Mental Hygiene Bureau of Sexually Transmitted Infections and the New York City STD Prevention Training Center, 2019).

Management of infants born to pregnant women with reactive treponemal tests during pregnancy is complex. Refer to Sec 5-75 Congenital Syphilis for guidance.

Special Considerations

HIV infection (Manitoba Health, 2022)

- Syphilis can increase the risk of acquisition of HIV, similar to other ulcer-causing infections.
- Persons with HIV infection who have early syphilis might be at increased risk for neurologic complications and can progress from primary to tertiary syphilis over several years.
- Co-infected individuals should be managed in consultation with an infectious disease specialist or physician knowledgeable in HIV.

Pregnancy

- All women newly diagnosed with syphilis during pregnancy should receive treatment appropriate to their stage of disease. Some experts recommend that primary,

secondary, and early latent cases in pregnancy be treated with two doses of benzathine penicillin G 2.4 million units 1 week apart; the efficacy of this regimen in preventing fetal syphilis is not known. Despite the administration of the recommended penicillin regimen, the highest risk of fetal treatment failure exists with maternal secondary syphilis (Alexander, et al, 1999).

- Retreatment during pregnancy is not necessary unless there is clinical or serologic evidence of new infection (four-fold rise in a non-treponemal test titre) or history of recent sexual contact with early syphilis.
- Intramuscular, long-acting benzathine penicillin G (or aqueous crystalline penicillin G, in cases of ocular, otic or neurosyphilis) remains the only regimen with documented efficacy against syphilis during pregnancy and for the prevention of congenital syphilis. Pregnant patients who are penicillin-allergic should be referred for desensitization followed by treatment with penicillin.
- There is no recommended alternative to penicillin for the treatment of syphilis in pregnancy. Erythromycin is the least effective agent for the treatment of syphilis and does not penetrate the CSF or placental barrier well. Doxycycline is contraindicated in pregnancy due to concerns of possible musculoskeletal and dental defects in the fetus and hepatotoxicity in the mother.
- If the mother is > 20 weeks gestation, an ultrasound should be performed and she should be managed with an obstetrician/maternal-fetal medicine specialist; if fetal abnormalities are identified, the mother should be hospitalized for treatment and fetal monitoring commenced.
- All babies born to mothers diagnosed with syphilis should be assessed at delivery by a pediatrician or pediatric specialist (e.g., infectious diseases), and if a maternal non-penicillin regimen was used, consideration should be given to treating the baby empirically for congenital syphilis.
- In cases where a child is born to a mother who was diagnosed with syphilis in pregnancy, and where the child is placed under the care of child protection services, medical information about the mother's diagnosis may be critical to the ongoing protection and monitoring of the infant's health. It is important to facilitate the collection and disclosure of relevant health information, in accordance with provincial/territorial requirements, in order to allow appropriate follow-up care.
- Refer to Section 5-75 Congenital Syphilis for more information.

Jarisch-Herxheimer reaction (Post-treatment reaction)

- Patients should be made aware of this possible reaction to treatment, especially with penicillin.
- An acute febrile illness with headache, myalgia, chills, rigours generally occurring within 8-12 hours and resolving within 24 hours.

- Common in early syphilis, but usually not clinically significant unless there is neurologic or ophthalmic involvement or in pregnancy where it may cause fetal distress and premature labour.
- It is not a drug allergy.
- Can be treated with antipyretics.
- Steroids may be indicated for the management of severe reactions but should be used in consultation with a colleague experienced in this area.

III. Outbreak

During an outbreak enhanced surveillance information on both cases and contacts and the risk factors associated with transmission should be captured.

IV. Epidemic Measures

It may be prudent to intensify prevention and control measures.

- At-risk populations may require alternate modes of intervention to reach them.
- Increase communication between primary care providers, outreach services, and/or community based organization to reach at-risk populations;
- Engage and educate primary care providers in case staging, treatment, follow up serology, and contact tracing;
- Partner notification alone is unlikely to control an outbreak of syphilis, particularly when some persons have partners who they cannot identify;
- Increase testing among at-risk populations with targeted communication strategies;
- Contact tracing should be extended to include non-sexual contacts who are thought by patients or their partners to possibly benefit from syphilis screening;
- Identify missed opportunities for testing and treatment to improve the prenatal and postpartum continuum of care.

Prevention Measures

The Sexually Transmitted Infections Introduction and General Considerations section of the manual highlights topics for client education that should be considered as well as provides information on high-risk groups and activities.

Education

- Educate the public about the disease: transmission, symptoms, and preventive measures
- Provide messaging to health care facilities and providers to provide information on current epidemiology, management and follow up of cases. The Ministry of Health will assist in dissemination of information via the Saskatchewan Medical Association and College of Physicians and Surgeons

Revisions

Date	Change
March 2024	• Added preamble to page 1 regarding the intent of adding Latent Syphilis of Unknown Duration as a new stage as well as practice implications. • Added POC test to suspect primary and secondary case definitions. • Modified secondary suspect case definition. • Modified early latent suspect case definition. • Reformatted and revised late latent confirmed definition to accommodate the new stage of latent syphilis of unknown duration. • Added confirmed latent syphilis of unknown duration case definition. • Added Attachment – Documenting Syphilis Site and Stage in Panorama. • Added reinfection definition for surveillance and indicator monitoring. • Updated Epi and Occurrence section to reflect most recent epi analysis. • Reformatted Table 2 to accommodate inclusion of latent syphilis of unknown duration. • Updated Tables 3, 4 and 5 to incorporate latent syphilis of unknown duration. • Added consideration for contact tracing of needle-sharing partners as similarly vulnerable populations that may share sexual networks. • Added language under epidemic measures. • Updated Notification Form completed and posted as pdf-fillable form. •
July 27, 2023	• Removed congenital syphilis case definitions and follow up directions as a new congenital syphilis chapter created (Sec 5-75) • Neurosyphilis case definition simplified and neurosyphilis suspect case definition added • Epidemiology and Occurrence section updated • Table 1 Clinical manifestations re-formatted with addition of infectious/non-infectious column • Specimen Collection and Transport section updated to refer to RRPL compendium • Laboratory Results and Interpretation section created and link added to RRPL 2022 Syphilis Laboratory testing algorithm

	• Added statement to case investigation that investigation and follow up required of all confirmed and suspect cases • Updated Table 2 Recommended serological test follow-up after treatment • Added Table 3 Adequate serologic response in infectious syphilis following treatment • Amended period of abstinence post treatment to 7 days after the completion of treatment per Canadian STI guidelines • Added information to Special Considerations HIV infection • Amended Epidemic Measures • Archived Attachment - Risk Assessment Questionnaire • Updated references
November 2019	• Updated the early congenital syphilis case definition to ensure timely confirmation of cases and alignment with Manitoba's classification.
October 2018	• Corrected typo on page 10 from PRP to RPR.
September 2018	• Updated to align with Panorama configuration; • Clarified the purpose for notification of cases to public health; • Incorporated an Epidemiology and Occurrence section into the chapter as a placeholder; • Incorporated Syphilis Data Collection Worksheet; • Rearranged and updated the style into the new format of the Manual. • Incorporated case definition and contact management (abstinence, treatment and follow-up serology into tables).

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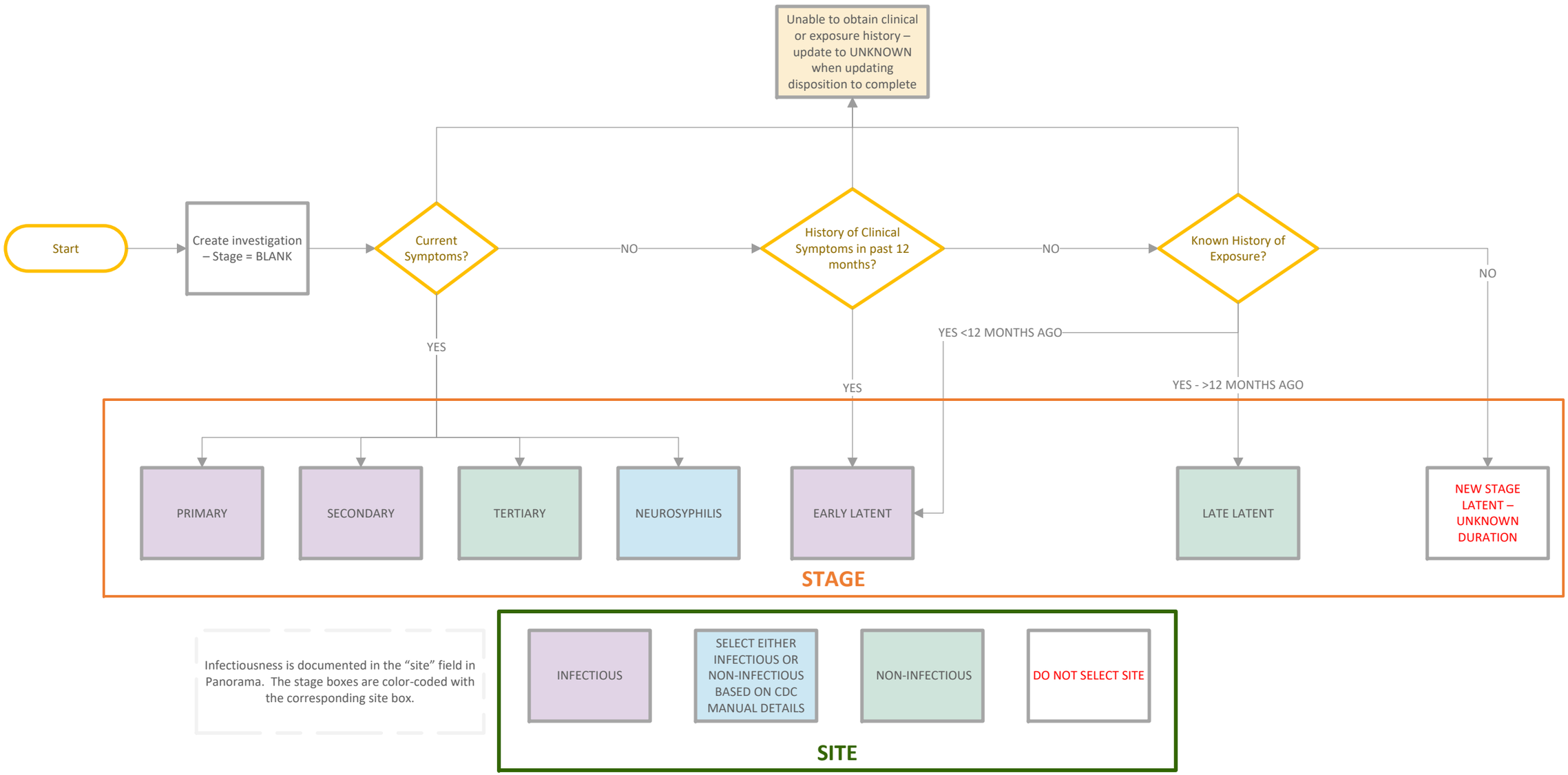
Start
Create investigation – Stage = BLANK
Current Symptoms?
NO
History of Clinical Symptoms in past 12 months?
NO
Known History of Exposure?
NO
Unable to obtain clinical or exposure history – update to UNKNOWN when updating disposition to complete
YES
YES
YES <12 MONTHS AGO
YES - >12 MONTHS AGO
PRIMARY
SECONDARY
TERTIARY
NEUROSYPHILIS
EARLY LATENT
LATE LATENT
NEW STAGE LATENT – UNKNOWN DURATION
STAGE
Infectiousness is documented in the "site" field in Panorama. The stage boxes are color-coded with the corresponding site box.
INFECTIOUS
SELECT EITHER INFECTIOUS OR NON-INFECTIOUS BASED ON CDC MANUAL DETAILS
NON-INFECTIOUS
DO NOT SELECT SITE
SITE