

DATE:	24 June 2024
TO:	Physicians & Staff at the Peter Lougheed Hospital; Calgary Zone Medical Officers of Health; Chief Medical Officer of Health, Alberta Health
FROM:	Alberta Precision Laboratories (APL) – Public Health Laboratory
RE:	Implementation of Rapid Syphilis & HIV antibody testing at Peter Lougheed Hospital, APL Acute Care Laboratory

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Key Message

- Commencing 27 June 2024, rapid syphilis and HIV antibody testing will be performed at the acute care APL Laboratory at the Peter Lougheed Hospital.
- Rapid syphilis testing is intended to assist with the clinical diagnosis to provide treatment while the patient is in the Emergency Department (ED) or an inpatient or at select ambulatory clinics.
- Rapid testing is recommended for persons with unknown syphilis status or who have previously tested negative and have one of the following indications:
 - *Pregnant person with unknown status*
 - *Pregnant with ongoing risk factors and a negative syphilis test in the current pregnancy*
 - *Person at risk for syphilis/HIV infection and at risk of loss to follow-up*
 - *Recent contact with a person with suspected and/or HIV infection*
 - *Person with syphilis and/or HIV in the differential diagnosis*
- At the participating hospitals, the syphilis orderable “Syphilis Screen” has been replaced with the “Syphilis Screening Order Panel”, which can be found by searching for order sets in the facility list, the ED quick picks and other order sets. The screens will guide the ordering provider to order the appropriate tests (including Rapid Syphilis/HIV) based on the testing indication.
- In the “No Prenatal Care” order panel, “rapid HIV” testing will be replaced by “rapid Syphilis and HIV”.
- The positive predictive value (PPV) of this test in persons with a rapid plasmin reagin (RPR) antibody titre of $\geq 1:8$ is 99.1% (95% CI 96.9 to 99.8%). These RPR titres are usually found in primary, secondary, and early latent syphilis infections, when the infection is most transmissible.
- This test is not recommended for patients with previous positive syphilis serology and will be automatically cancelled by a Best Practice Advisory (BPA) rule during the ordering process.
- A positive rapid syphilis result is a strong indication to treat.

Background

- In July 2021, a provincial syphilis outbreak was declared with the highest rates recorded in the Edmonton & North zones, with >10% of female cases occurring in pregnant persons in 2021. In 2022, over 3,300 new cases were reported. Since 2014, 338 cases of congenital syphilis cases in babies have been recorded, the expected number of congenital syphilis cases in a first world country should



be zero ([Syphilis Outbreak | Alberta Health Services](#)). Treating infected persons early in their pregnancy can significantly reduce the later adverse manifestations of a congenital syphilis infection.

- Presently, six acute care facilities in the Edmonton, North & Central zones are providing rapid testing in the first phase of a provincial rollout, in response to the high numbers of congenital syphilis babies and persons diagnosed with infectious syphilis. The Peter Lougheed hospital is the next site in the provincial rollout of this phased approach.
- Many of these infected persons come to EDs for unrelated medical issues and outpatient follow-up of positive results from standard syphilis & HIV testing in this population can be difficult due to the 2-to-3-day turnaround time to a result. Therefore, the availability of rapid syphilis testing in hospitals managing persons with high-risk behaviors for sexually transmitted and bloodborne infections is intended to identify and treat infected persons immediately.
- The rapid test offers a one-hour turnaround time to a result after the blood is received at the site laboratory. A clinical evaluation of this rapid assay showed that a positive result correlated very closely with RPR titres of $\geq 1:8$ dilutions, that are documented in primary, secondary and early latent syphilis. The PPV and specificity are 99.1% (95% CI 96.9-99.8%) and 99.8% (95% CI 99.2-99.9) respectively (Singh *et al.*, 2023), therefore making the decision to treat a practical approach while the person is still in the ED or a short stay inpatient. Positive rapid results will be phoned to the ordering healthcare provider to facilitate the evaluation for immediate treatment.
- The rapid test is not recommended for patients with previous positive syphilis serology and will be automatically cancelled by a BPA rule during the ordering process. The rule will place an order for RPR instead. All rapid Syphilis and HIV orders must be accompanied by a Syphilis Screen and HIV 1 and 2 Serology, which will be automatically selected if you order using the “Syphilis Screening Order Panel”.
- In non-pregnant adults, including HIV-infected persons, with primary, secondary, or early latent syphilis, a single dose of long acting benzathine penicillin G is the preferred treatment.
<https://open.alberta.ca/publications/treatment-guidelines-for-sti-2018>
- Treatment of pregnant persons and children should be in consultation with STI Centralized Services or Pediatrics Infectious Disease Specialist (Refer to Alberta STI Treatment Guidelines or the “Suspect Syphilis” order/smart sets in Connect Care) as applicable.

Action Required

- The responsible healthcare provider should determine if the patient is at-risk for syphilis and other STI/Bloodborne infections and exposures.
- Order Syphilis and other STI/Bloodborne infection tests (HIV, HCV, HBV, CT/GC) for patients at risk.
- If the rapid Syphilis/HIV test is positive in a person at risk and not previously syphilis positive, then treat the patient. Waiting for confirmatory testing and a RPR result is not necessary.
- Refer to the “Suspect Syphilis Order Set” for guidance on testing and treatment for inpatients (ED and inpatient). Use the “Suspect Syphilis Smart Set” for ambulatory patients.
- Review the Connect Care tip sheet on ordering syphilis for sites going live (see below)



Questions/Concerns

- Dr. Kevin Fonseca, Clinical Virologist, APL - Public Health Microbiology (kevin.fonseca@albertaprecisionlabs.ca)
- Dr. Hong Yuan Zhou, Medical Microbiologist, APL – Public Health Microbiology (hong.zhou@albertaprecisionlabs.ca)
- Dr. William Stokes, Medical Microbiologist – Public Health Microbiology (william.stokes@albertaprecisionlabs.ca)
- Dr. Cari Egan, Lead, Provincial Population & Public Health, Alberta Health Services (cari.egan@albertahealthservices.ca)

Approved by

- Dr. Graham Tipples, Medical-Scientific Director, Public Health, APL
- Dr. Dylan Pillai, Medical Director, South Sector, APL

References, Guidelines, Educational

Singh AE, Ives N, Gratrix J, Vetland C, et al., Sensitivity and specificity of two investigational Point of care tests for Syphilis and HIV (PoSH Study) for the diagnosis and treatment of infectious syphilis in Canada: a cross-sectional study.

Clin Microbiol Infect, 2023;29(7):940.e1-940.e7. <https://doi.org/10.1016/j.cmi.2023.02.015>

Alberta Treatment Guidelines for Sexually Transmitted Infections (STI) in Adolescents and Adults (2018) <https://open.alberta.ca/publications/treatment-guidelines-for-sti-2018>

Alberta Public Health Disease Management Guidelines: Congenital syphilis <https://open.alberta.ca/publications/congenital-syphilis>

For AHS/Connect Care Users - The Connect Care Education Materials Library is located on the main Connect Care page on AHS InSite:

(Go To insite.ahs.ca > Teams > Connect Care > Resources > Education Materials Library > enter “Syphilis” into the search box to locate the Quick Start Guide)

Effective September 1, 2023, APL has become the sole provider of all public lab services in Alberta. As a result, community lab services formally provided by DynaLIFE Medical Labs will become the responsibility of Alberta Precision Labs (APL). This change impacts all zones.