

DATE:	22 January 2024
TO:	Physicians & Staff at the Misericordia and Grey Nuns Hospitals; Edmonton and North 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 Misericordia and Grey Nuns Hospital, APL Acute Care Laboratories

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Key Message

- Commencing 15 January 2024, rapid syphilis and HIV antibody testing will be performed at the acute care APL laboratories at the Misericordia and Grey Nuns Hospitals, Edmonton.
- 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, 290 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.



- With the addition of the Misericordia and Grey Nuns hospitals, a total of four acute care facilities 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.
- 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 blood collection. 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. 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 pdf 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. Byron Berenger, Medical Microbiologist and Provincial Microbiology Section Chief, APL
- Dr. Michael Mengel, Medical Director, North Sector, APL

References, Guidelines & Connect Care Tip Sheet:

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/dataset/93a97f17-5210-487d-a9ae-a074c66ad678/resource/bc78159b-9cc4-454e-8dcd-cc85e0fcc435/download/sti-treatment-guidelines-alberta-2018.pdf>

Connect Care Tip sheet: **Attached**

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.



Syphilis Screening Order Panel (Rapid Syphilis/HIV)

Background

Effective on October 10, 2023, rapid testing for syphilis will be made available at the Royal Alexandra Hospital with more sites to follow.

The “Syphilis Screening Order Panel” order set will replace the “Syphilis Screen” order for these sites. This order set will guide the user to order the appropriate test based on the indication for testing.

The Rapid Syphilis/HIV test can also be found in the “No Prenatal Care Panel” for these sites. On this panel, it replaces the rapid HIV test.

How to Order

1. Search for the **Syphilis Screening Order Panel** from the Orders/Order Sets activity tab.

The screenshot shows the 'Order Sets' tab in the Connect Care interface. The 'Syphilis Screening Order Panel' is listed under 'Search Results'. A red box highlights the 'Standard' option in the 'Providers' section.

2. Double-click to open the order set.

The screenshot shows the 'Syphilis Screening Order Panel' form. It includes a search bar, a table of order sets, and a section for 'Patient Indication' with a list of options.

Name	User Version Name	Type
Syphilis Screening Order Panel		Order Set

▼ Syphilis Screening

▼ Patient Indication

People at risk for syphilis include:

- Anyone experiencing sexually transmitted infection related symptoms
- Anyone with a sexual partner who has a sexually transmitted infection
- Anyone in a new, anonymous, or multiple sexual partners, should be screened every 3 to 6 months.

Select indication for testing:

- ☐ Pregnant with No Prenatal Screening
- ☐ Pregnant with Prenatal Screening in current Pregnancy
- ☐ Person at risk for Syphilis (Not Pregnant and Unknown Syphilis Status)
- ☐ Known Positive for Syphilis
- ☐ Routine Screen



3. Select an indication for testing. All required tests will be pre-selected. Users can de-select tests that are not needed. Note that all rapid syphilis/HIV tests require additional Syphilis serology (Syphilis Screen) and HIV 1 and 2 Serology orders as follow up.

Orders Clear All Orders

Syphilis Screening Order Panel

Syphilis Screening

Patient Indication

People at risk for syphilis include:

- Anyone experiencing sexually transmitted infection
- Anyone with a sexual partner who has a sexually transmitted infection
- Anyone in a new, anonymous, or multiple sexual relationship

Select indication for testing:

☐ Pregnant

☒ Person at risk for Syphilis (Not Pregnant and Unknown Syphilis Status)

☒ Rapid Syphilis and HIV -- Blood
This test detects antibodies to Syphilis and HIV and is intended for patients who meet the criteria and are not known Syphilis serology positive.

☒ HIV 1 and 2 Serology (Antigen and Antibody) -- Blood
Once, today at 11:20, For 1 occurrence

☒ Syphilis Screen -- Blood
Once, today at 11:20, For 1 occurrence

☐ Known Positive for Syphilis

☐ Routine Screen

Rapid Syphilis and HIV -- Blood Accept Cancel

Process Instructions: This test detects antibodies to Syphilis and HIV and is intended for patients who meet the criteria and are not known Syphilis serology positive.

Reference Links: [APL Guide to Lab Services](#)

Frequency: **STAT**

At: 04/10/2023 Today Tomorrow 11:20

Specimen Type: **Blood**

Specimen Source: **Blood**

CC Results To: + Add

Comments: + Add Comments

Add-on: No add-on specimen found

Next Required Accept Cancel

Pregnant

☒ No Prenatal Care in Current Pregnancy

☒ No Prenatal Care Panel

☒ CBC, No Differential -- Blood
STAT, today at 15:36, For 1 occurrence

☒ Type and Screen -- Blood
STAT, today at 15:36, For 1 occurrence

☒ Rapid Syphilis and HIV -- Blood
This test detects antibodies to Syphilis and HIV and is intended for patients who meet the criteria and are not known Syphilis serology positive.

☒ Prenatal Infectious Disease Panel (Serology) -- Blood
For all STAT requests (e.g. woman in labour with no prenatal care or high-risk) call the virologist on-call. This serology panel tests for Hepatitis B Surface Antigen, Syphilis Antibody, HIV 1 and 2 Serology, Rubella IgG, Varicella Zoster IgG and Hepatitis C Serology. Prenatal Chlamydia/Gonorrhea must be ordered separately.
Once, today at 15:36, For 1 occurrence
Reason for testing? Other (specify)
Enter parity: 0
Is the patient pregnant? Yes

☒ Urine Opioid Dependency Panel -- Urine, Other
Once, today at 15:36, For 1 occurrence

☒ Urine General Toxicology Panel -- Urine, Other
Once, today at 15:36, For 1 occurrence

At Risk for Syphilis, Negative Prenatal Screen in current Pregnancy

☒ Rapid Syphilis and HIV -- Blood
This test detects antibodies to Syphilis and HIV and is intended for patients who meet the criteria and are not known Syphilis serology positive, Expected: 29/09/2023, Expires: 29/09/2024, Lab Collect, Blood, Blood

☒ HIV 1 and 2 Serology (Antigen and Antibody) -- Blood
Expected: 29/09/2023, Expires: 29/09/2024, Lab Collect, Blood, Blood

☒ Prenatal Syphilis Rescreen -- Blood
Expected: 29/09/2023, Expires: 29/09/2024, Lab Collect, Blood, Blood
Enter parity: 0

Known Positive for Syphilis

☒ Prenatal Syphilis Rescreen -- Blood
Expected: 29/09/2023, Expires: 29/09/2024, Lab Collect, Blood, Blood
Enter parity: 0

Routine Rescreen (only order as guidelines)

☒ Prenatal Syphilis Rescreen -- Blood
Expected: 29/09/2023, Expires: 29/09/2024, Lab Collect, Blood, Blood
Enter parity: 0

Person at risk for Syphilis (Not Pregnant and Unknown Syphilis Status)

☒ Rapid Syphilis and HIV -- Blood
This test detects antibodies to Syphilis and HIV and is intended for patients who meet the criteria and are not known Syphilis serology positive, Expected: 29/09/2023, Expires: 29/09/2024, Lab Collect, Blood, Blood

☒ HIV 1 and 2 Serology (Antigen and Antibody) -- Blood
Expected: 29/09/2023, Expires: 29/09/2024, Lab Collect, Blood, Blood

☒ Syphilis Screen -- Blood
Expected: 29/09/2023, Expires: 29/09/2024, Lab Collect, Blood, Blood

Known Positive for Syphilis

☒ Syphilis Screen -- Blood
Expected: 29/09/2023, Expires: 29/09/2024, Lab Collect, Blood, Blood

Routine Screen

☒ Syphilis Screen -- Blood
Expected: 29/09/2023, Expires: 29/09/2024, Lab Collect, Blood, Blood



4. Sign the order.

NOTE: a pop-up will appear if the patient was previously positive for Syphilis or HIV. For syphilis, the system will automatically order Rapid Plasma Reagin (RPR) instead. Once a person is confirmed positive for Syphilis, they need the RPR for follow up on the infection status. Accept these changes and the Syphilis Screen (antibody screen) order will be removed and the RPR will remain.

The screenshot shows the 'Syphilis Screening Order Panel' in the Connect Care system. A warning pop-up is displayed, titled 'Important (2)', with the following content:

- WARNING:** This individual has been confirmed HIV POSITIVE. Additional HIV serology is not necessary. If testing is still required and "Keep" is selected, the ProvLab Microbiologist On-Call MUST be consulted before ordering or the testing will be cancelled by lab.
- Refer to Lab#:** 23PN-087500008; **Date:** 28/03/2023
- Remove the following orders?** (Buttons: Remove, Keep)
 - HIV 1 and 2 Serology (Antigen and Antibody) -- Blood (Once, today at 15:31, For 1 occurrence)
- Warning:** This individual has previously tested positive for Syphilis Serology.
- Date of Previous Positive:** 22/03/2023
- This is evidence of current or past Syphilis infection.**
- Syphilis Screen will not be performed for previously positive patients. Accept this advisory to order Rapid Plasma Reagin (RPR) instead.**
- Remove the following orders?** (Buttons: Remove, Keep)
 - Syphilis Screen -- Blood (Once, today at 15:31, For 1 occurrence)
 - Rapid Syphilis and HIV -- Blood (This test detects antibodies to Syphilis and HIV and is intended for patients who meet the criteria...)
- Apply the following?** (Buttons: Order, Do Not Order)
 - RPR (This test detects antibodies to Syphilis and HIV and is intended for patients who meet the criteria...)

At the bottom of the pop-up are 'Accept' and 'Cancel' buttons. In the background, the 'Syphilis Screening Order Panel' shows various testing options, and the 'Orders from Order Sets' section lists the selected orders.

NOTE: if you choose to keep the current orders, another pop-up will appear to alert you that the patient was previously positive and to advise you on what to do.

The screenshot shows the 'Order Validation' pop-up with the following message:

You cannot sign these orders because information is missing or requires your attention:

Alert - This individual has previously tested positive for Syphilis Antibodies. RPR is the required follow up test. If repeat Syphilis Screen (EIA) or TPPA is required contact the ProvLab Microbiologist On-call. Remove the Syphilis Screen order as it will be automatically cancelled by lab.

An 'OK' button is located at the bottom right of the pop-up.

5. Enter in a name for the ordering provider to proceed to place the RPR order.



Providers

Ordering Information

Order mode
Standard

Ordering provider
[Redacted]

Authorizing Providers
For procedures
AHMED, SOFIA BANO

Cosigners
For procedures
[Redacted]

Accept Cancel