

Leaders in Laboratory Medicine

Laboratory Bulletin

DATE:	8 April 2024
то:	Physicians & Staff at the Red Deer & Wetaskiwin Hospitals; Central 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 Red Deer & Wetaskiwin Hospitals, APL Acute Care Laboratories

PLEASE POST OR DISTRIBUTE AS WIDELY AS APPROPRIATE

Key Message

- Commencing 15 April 2024, rapid syphilis and HIV antibody testing will be performed at the acute care APL laboratories at the Red Deer and Wetaskiwin Hospitals.
- 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
 - o Person at risk for syphilis/HIV infection and at risk of loss to follow-up
 - o 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 ≥ 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.
- Four acute care facilities in the Edmonton & North zones are now 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 Red Deer and Wetaskiwin hospitals are the next sites in the provincial rollout of this phased approach.



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- 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 ≥ 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 (<u>kevin.fonseca@albertaprecisionlabs.ca</u>)
- 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 & 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/publications/treatment-guidelines-for-sti-2018

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

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 (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 for both inpatient and outpatient use by order panel or order set.



Syphilis Screening Order/Smart Panel

syphilis/HIV testing only



Suspect Syphilis Order/Smart Set

syphilis/HIV testing, other STBBI testing, syphilis treatment and follow up

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.

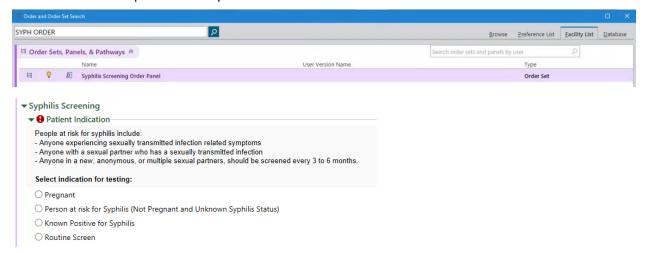
The Rapid Syphilis/HIV test can also be found in the "No Prenatal Care Panel" for these sites. On this panel, it replaces the rapid HIV test.

How to Order - Syphilis Screening Order Panel

Search for the Syphilis Screening Order Panel from the Orders activity tab.



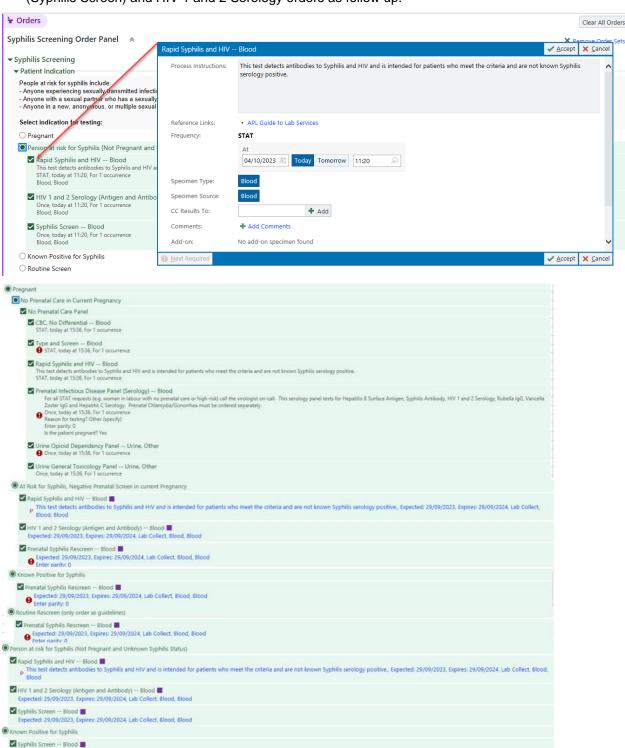
Double-click to open the order panel order set.





Connect Care Quick Start Guide

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.



Expected: 29/09/2023, Expires: 29/09/2024, Lab Collect, Blood, Blood

Expected: 29/09/2023, Expires: 29/09/2024, Lab Collect, Blood, Blood

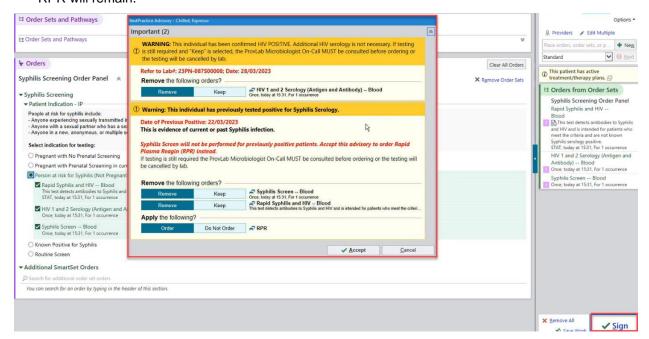
Routine Screen
 Syphilis Screen → Blood ■



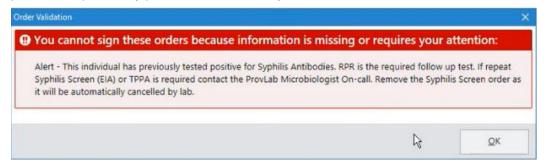
Connect Care Quick Start Guide

4. Sign the order.

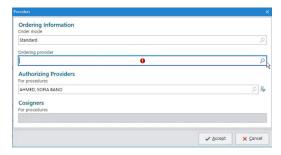
NOTE: a pop-up will appear if the patient was previously positive for Syphilis or HIV. For syphilis, the system will automatically order Rapid Plasma Reagin (RPR) instead. Once a person is confirmed positive for Syphilis, they need the RPR for follow up on the infection status. Accept these changes and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



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.



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







Connect Care Quick Start Guide

Suspect Syphilis Order Set - Inpatient View

To order, search for the Suspect Syphilis Order Set from the Orders activity tab and compete the form.

Suspected Syphilis Adult A

X Remove Order Sets

- ▼ Laboratory Investigations Routine
 - ► Microbiology Click for more
 - ▶ Urine Click for more
- ▼ Medications
 - ▶ Syphilis Treatment (adolescents/adults, non pregnant) Click for more
 - ▶ Syphilis Treatment (adolescents/adults, pregnant) Click for more
- **▼** Consults/Referrals
 - **▼** Consults

Persons known to be previously syphilis positive on serologic testing may remain positive for life.

\$TI Centralized Services (available between 0815h to 1630h Monday to Friday) can provide assistance with:

- · Accessing treatment history for previous cases of syphilis,
- · Arranging testing and treatment of partners

Contact information available at Alberta Referral Directory

In addition, for pregnant patients: Contact Obstetrics/Gynecology AND Maternal Fetal Medicine

In addition, patients with suspect or confirmed syphilis with neurologic symptoms (including eye/ear symptoms) may require a lumbar puncture (test for cell count and differential, protein, glucose, CSF VDRL) and may require consultation by neurology, ophthalmology or ENT.

For advice outside of STI Centralized Services hours: Contact infectious disease on-call

- **▼** Discharge
 - ▶ Follow-Up———Click for more
- ▼ Additional SmartSet Orders

Search for additional order set orders

You can search for an order by typing in the header of this section.





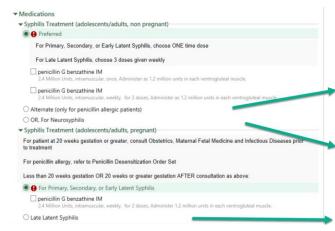
Quick Start Guide

Laboratory Investigations - Routine ▼ Microbiology Syphilis Screening Panel 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 m Select indication for testing: Pregnant Person at risk for Syphilis (Not Pregnant and Unknown Syphilis Status) Known Positive for Syphilis Routine Screen Teponema pallidum (Syphilis) NAT Vesicle or Lesion (Specimen: Skin swab) Other Syphilis Infection (Specimen: Blood, CSF, Tissue) Herpes Simplex (HSV) and Varicella Zoster (VZV) Virus NAT	nonths.
Syphilis Screening Panel 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 m Select indication for testing: Pregnant Person at risk for Syphilis (Not Pregnant and Unknown Syphilis Status) Known Positive for Syphilis Routine Screen Treponema pallidum (Syphilis) NAT Vesicle or Lesion (Specimen: Skin swab) Other Syphilis Infection (Specimen: Blood, CSF, Tissue)	nonths.
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 ◯ Known Positive for Syphilis ◯ Routine Screen ☑ ③ Treponema pallidum (Syphilis) NAT ☐ Vesicle or Lesion (Specimen: Skin swab) ☐ Other Syphilis Infection (Specimen: Blood, CSF, Tissue) 	
○ Routine Screen ☑ ① Treponema pallidum (Syphilis) NAT □ Vesicle or Lesion (Specimen: Skin swab) □ Other Syphilis Infection (Specimen: Blood, CSF, Tissue)	
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☐ Vesicle or Lesion (Specimen: Skin swab) ☐ Other Syphilis Infection (Specimen: Blood, CSF, Tissue)	
Other Syphilis Infection (Specimen: Blood, CSF, Tissue)	
Trespes simplex (154) and variceia 20ster (424) viras 1441	
What two of USV or V7V infection is suspected?	
What type of HSV or VZV infection is suspected?	
Eye Infection (Specimen: Vitreous or Aqueous fluid)	
☐ Eye Infection (Specimen: Eye swab or Corneal scrapings) ☐ Oral Infection (Specimen: Mouth or lip swab)	
Vesicle or Lesion (Specimen: Skin swab)	
Gastrointestinal Infection (Specimen: Tissue (GI))	
Respiratory Infection (Specimen: Tissue)	
Respiratory Infection (Specimen: BAL, BW, or Pleural fluid)	
CNS Infection (Specimen: CSF)	
☐ Diseminated Infection (Specimen: Blood)	
Other HSV or VZV Infection (Specimen: Bone marrow, Tissue (except GI or Respiratory))	
✓ 1 Mpox Virus	
What type of Mpox infection is suspected?	
Skin (non-genital) Vesicle or Lesion (Specimen: Swab)	
Genital infection (Specimen: Swab)	
Oral infection (Specimen: Mouth or Lip Swab)	
Eye infection (Specimen: Cornea or Conjunctiva Swab)	
CNS infection (Specimen: CSF)	
☐ Other (Specimen: Nasopharynx, Tissue, Other) ☐ Chlamydia and Gonorrhea Screen	
Once, Swab, Throat	
Chlamydia and Gonorrhea Screen Once, Urine, Urine, First Catch	
Chlamydia and Gonorrhea Screen Once, Swab, Rectal	
Chlamydia and Gonorrhea Screen Once, Swab, Cervix	
Chlamydia and Gonorrhea Screen Once, Swab, Vagina	
Trichomonas Vaginalis Screen Once, Swab, Vagina	
Hepatitis B Virus Surface Antigen Once, Blood, Blood	
Hepatitis B Surface Antibody Once, Blood, Blood	
Hepatitis B Core Antibody, Total	
Hepatitis C Virus Serology Once, Blood, Blood	
Hepatitis C Virus (HCV) NAT Once, Blood, Blood	
☐ HIV 1 and 2 Serology (Antigen and Antibody) Once, Blood, Blood	
HIV 1 NAT Once, Blood, Blood	





Quick Start Guide





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Quick Start Guide

Suspect Syphilis Order Set – Outpatient View

To order, search for the **Suspect Syphilis Order Set** and compete the form.

Suspected Syphilis Smart Set (non STI Clinic) Adult ≈

- ▼ Visit Diagnosis
- ▶ Visit Diagnosis Click for more
- ▼ Laboratory
- ▶ Microbiology Click for more
- ▶ Urine Click for more
- ▼ Diagnostic Imaging
- ▶ Ultrasound Click for more
- ▼ Clinic Administered/Dispensed Medications

Consult Alberta Treatment Guidelines for Sexually Transmitted Infections (<u>Alberta treatment guidelines for sexually transmitted infections (STI) in adolescents and adults, 2018 - Open Government</u>) prior to treatment selection.

- Syphilis Treatment adolescents/adults (non pregnant)
- Click for more

Syphilis Treatment adolescents/adults (pregnant)

Click for more

- ▼ Referrals
- ▼ Referrals

Persons known to be previously syphilis positive on serologic testing may remain positive for life.

STI Centralized Services (available between 0815h to 1630h Monday to Friday) can provide assistance with:

- · Accessing treatment history for previous cases of syphilis,
- · Arranging testing and treatment of partners

Contact information available at Alberta Referral Directory

In addition, for pregnant patients: Contact Obstetrics/Gynecology AND Maternal Fetal Medicine

In addition, patients with suspect or confirmed syphilis with neurologic symptoms (including eye/ear symptoms) may require a lumbar puncture (test for cell count and differential, protein, glucose, CSF VDRL) and may require consultation by neurology, ophthalmology or ENT.

For advice outside of STI Centralized Services hours: Contact infectious disease on-call

- ▼ Follow-up
- Follow Up Click for more
- ▼ Additional SmartSet Orders



Quick Start Guide

▼ Laboratory
▼ Microbiology
✓ Syphilis Screening Panel
People at risk for syphilis include: - Anyone experiencing sexually transmitted infections 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:
O Pregnant
O Person at risk for Syphilis (Not Pregnant and Unknown Syphilis Status)
O Known Positive for Syphilis
O Routine Screen
✓ ① Treponema pallidum (Syphilis) NAT
Vesicle or Lesion (Specimen: Skin swab)
Other Syphilis Infection (Specimen: Blood, CSF, Tissue)
✓
What type of HSV or VZV infection is suspected?
Eye Infection (Specimen: Vitreous or Aqueous fluid)
Eye Infection (Specimen: Eye swab or Corneal scrapings)
Oral Infection (Specimen: Mouth or lip swab)
Vesicle or Lesion (Specimen: Skin swab)
Gastrointestinal Infection (Specimen: Tissue (GI))
Respiratory Infection (Specimen: Tissue)
Respiratory Infection (Specimen: BAL, BW, or Pleural fluid)
CNS Infection (Specimen: CSF)
☐ Diseminated Infection (Specimen: Blood)
Other HSV or VZV Infection (Specimen: Bone marrow, Lesion swab, or Tissue (except GI or Respiratory))
✓
Skin (non-genital) Vesicle or Lesion (Specimen: Swab)
Genital infection (Specimen: Swab)
Oral infection (Specimen: Mouth or Lip Swab)
Eye infection (Specimen: Cornea or Conjunctiva Swab)
CNS infection (Specimen: CSF)
Other (Specimen: Nasopharynx, Tissue, Other)
Chlamydia and Gonorrhea Screen Urine, Urine, First Catch
Chlamydia and Gonorrhea Screen Swab, Throat
Chlamydia and Gonorrhea Screen Swab, Rectal
Chlamydia and Gonorrhea Screen Swab, Cervix
Chlamydia and Gonorrhea Screen Swab, Vagina
Trichomonas Vaginalis Screen Swab, Vagina
Hepatitis B Virus Surface Antigen Blood, Blood
Hepatitis B Surface Antibody Blood, Blood
Hepatitis B Core Antibody, Total Blood, Blood
Hepatitis C Virus Serology Blood, Blood
Hepatitis C Virus (HCV) NAT Blood, Blood
HIV 1 and 2 Serology (Antigen and Antibody) Blood, Blood
HIV 1 NAT Blood, Blood
▼ Urine
Pregnancy Test, Urine Urine, Urine, Midstream
▼ Diagnostic Imaging ▶ Ultrasound
▼ Clinic Administered/Dispensed Medications



Quick Start Guide

▼ Syphilis Tre	eatment - adolescents/adults (non pregnant)
For Neurosy	yphilis treatment
Preferred tre	atment for neurosyphilis is penicillin G 4 million units IV every 4 hours for 10-14 days
	order cefTRIAXone (2g IV every 24 hours for 10-14 days) use the Antimicrobial Adult Once Daily n and consult Infectious Diseases
For Calgary	zone, refer to Home Parenteral Therapy Program
For non-Neu	prosyphilis treatment, choose preferred or alternate below
OPreferred	
Alternate	(only for penicillin allergic patients)
Syphilis Tr	eatment adolescents/adults (pregnant)
	at 20 weeks gestation or greater, consult Obstetrics, Maternal Fetal Medicine, and Infectious or to treatment
	n weekly are recommended in pregnancy for Primary, Secondary, and Early Latent Syphilis. 3 weekly are recommended for Late Latent Syphilis. Ensure follow up is arranged for subsequent
For Penicillin	allergy, refer to Penicillin Desensitization Smart Set
Less than	20 weeks gestation or 20 weeks or greater gestation after consultation as above
Referrals	
▼ Referrals	

