

# Physician Guide to the Management of Syphilis

updated November 2011

## RISK FACTORS

A diagnosis of syphilis should be considered in anyone with signs or symptoms compatible with syphilis and also in the following individuals:

- Those who have had contact with a known case of syphilis
- Men who have sex with men
- Sex workers
- Injection drug users
- Those with multiple sex partners
- Those with a history of syphilis, HIV and other STIs
- Those originating from or having sex with someone from a country with a high prevalence of syphilis
- Sexual partners of any of the above

In the current outbreak, enhanced surveillance has suggested a number of additional socio-behavioural factors such as inhibitory drugs (alcohol, marijuana, nitrates/poppers), lack of protection during oral sex and rimming, and anonymous and/or casual sex partners.

## GUIDELINES FOR SEXUAL RISK ASSESSMENT

- An accurate sexual history is an important tool in determining risk for syphilis.
- Avoid the use of labels like “straight” or “gay”. Instead – “Do you have sex with men, women or both?” Some straight men have sex with both men and women.
- Be careful while taking a history in making assumptions about behaviour based on age, marital status, disability or other characteristics
- Determine the number of partners, the frequency of condom use and the type of sexual contact (e.g., oral, anal, genital)
- Syphilis, like other sexually transmitted infections, is known to increase the risk of acquisition and transmission of other sexually transmitted infections, including HIV. Therefore, all patients positive for syphilis should be tested for other STIs, including HIV.
- In the province of Nova Scotia, some high risk groups are eligible for publicly funded (free) vaccination with combined hepatitis A and B vaccination (Twinrix). Please speak with a Public Health CDC nurse at 481-5824 for more information about eligibility and ordering.
- Don't forget the women! Keep in mind with your female patients that the risk of syphilis in women remains high.

## TREATMENT

- Expert opinion is advised – refer clients to the CDHA STD Clinic (Dickson Building)
- Treatment is provided at no cost at the CDHA STD Clinic (Dickson Building) only
- The preferred antibiotic for treatment of syphilis is long acting benzathine penicillin G (2.4 million units IM). Please note that this product (Bicillin) is not the same as short acting benzylpenicillin commonly used for other infections (also called Penicillin G).
- Contacts of syphilis should also be tested for syphilis and treated with a single dose of long acting benzathine penicillin G (2.4 million units IM).
- Follow-up serologic testing is essential and depends on the stage of the illness at the time of diagnosis (figure 3). Adequate treatment will result in a reduction in the RPR titre over time (figure 5). Failure of the RPR titre to improve or an increase in the titre suggests treatment failure and should include further investigation to exclude neurosyphilis.

## PREVENTION

- Test patients who are at risk (see risk factors above) and those who request testing
- Counsel patients regarding the risk of anonymous and unprotected sex
- Safer sex practices should be encouraged; this includes not having sexual contact if there are chancres present, use condoms/dental dams for anal, vaginal, and oral sex as well as rimming, change condoms between sexual partners

## CONTACT TRACING

- Public Health will follow-up with all syphilis cases and contacts. Please advise your patient to expect contact from Public Health

### FOR FURTHER INFORMATION CONTACT

Communicable Disease Program  
Public Health Services  
Capital Health  
902-481-5824

STD Clinic – Dickson Centre  
Capital Health  
902-473-2272

## EPIDEMIOLOGY

Over the past 15 years, a gradual increase in the rate of infectious syphilis has been observed in Canada, particularly among men. The infectious syphilis rate is based on 3 stages of syphilis - primary, secondary and early latent. In 1993, the national infectious syphilis rate was 0.6 per 100,000 and was similar among males and females. This rate remained relatively consistent until 2001, at which point, the national rate of infectious syphilis began to increase. A similar trend was seen in Nova Scotia. As shown in Figure 1, the rate of infectious syphilis among males in Capital Health began to increase in the last quarter of 2008. An outbreak was declared in July 2009 and continues to date. Although the outbreak has been limited to males, there is some concern that this outbreak will eventually impact other populations.

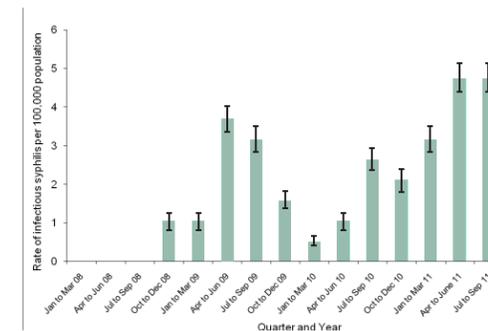


Figure 1. Capital Health infectious syphilis rate in males, January 1, 2008 – September 30, 2011 (n=56)\*

## SYPHILIS IS BACK!

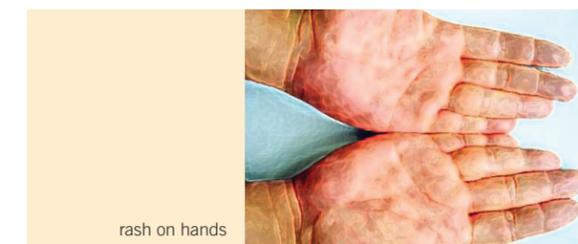
In 3 years we have gone from no cases (Sept 2008) to 56 cases (Sept 2011). We need your help to identify cases early and refer to the STD Clinic for treatment. Ask your patients about their sexual activity (see guidelines for sexual risk assessment on page 4) and let them know that syphilis is on the rise. For the most current information, please refer to the Canadian Guidelines on Sexually Transmitted Infections (<http://www.phac-aspc.gc.ca/std-mts/sti-its/guide-lignesdir-eng.php>)

## TRANSMISSION

Syphilis is transmitted through sexual contact (genital-genital, genital-oral, genital-anal or anal-anal) with an infected person. Syphilis is also spread from an infected mom to her unborn baby across the placenta (can lead to miscarriage, stillbirth or congenital transmission). There is a possibility of transmission through fresh human blood and through accidental inoculation.

## COMMUNICABILITY

Syphilis is communicable from the onset of symptoms in the primary stage until the individual is successfully treated. The most infectious period is during the primary, secondary and early latent. The individual becomes gradually less infectious as time goes on.



rash on hands

## CLINICAL FEATURES

Syphilis can have varied clinical manifestations according to the following stages (from Canadian Guidelines on Sexually Transmitted Infections).

Stage	Clinical Manifestations	Incubation Period
Primary	Chancre, regional lymphadenopathy (note: a high proportion of individuals fail to recall a primary chancre)	3 weeks (3 to 90 days)
Secondary	Rash, fever, malaise, lymphadenopathy, mucus lesions, condyloma lata, patchy or diffuse alopecia, meningitis, headaches, uveitis, retinitis	2 to 12 weeks (2 weeks to 6 months)
Latent	Asymptomatic	Early: < 1 year Late: > 1 year
Tertiary	<ul style="list-style-type: none"> <li>Cardiovascular syphilis: Aortic aneurysm, aortic regurgitation, coronary artery ostial stenosis</li> <li>Neurosyphilis: Ranges from asymptomatic to symptomatic with headaches, vertigo, personality changes, dementia, ataxia, presence of Argyll Robertson pupil</li> <li>Gumma: Tissue destruction of any organ; manifestations depend on site involved</li> </ul>	10 to 30 years  <2 years to 20 years  1 to 46 years (most cases 15 years)

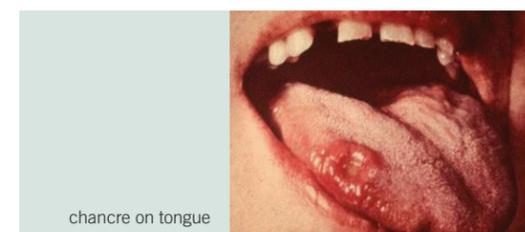


## DIAGNOSIS

Serology is the primary method for diagnosis. Dark field microscopy is not available.

Traditionally syphilis serology is a two step algorithm where the patient's serum is initially screened with a non-treponemal test (e.g. RPR) followed by a confirmatory treponemal test (e.g. Treponemal pallidum Particle Agglutination (TPPA)). The RPR can be quantitative and the titre is important to follow over time to ensure that the patient has responded to treatment

Recently more laboratories are moving away from the classic algorithm in favor of testing serum with an EIA that detects IgM and IgG to Treponema. Although slightly more sensitive for early infection, false positives can occur and confirmation can be more challenging.



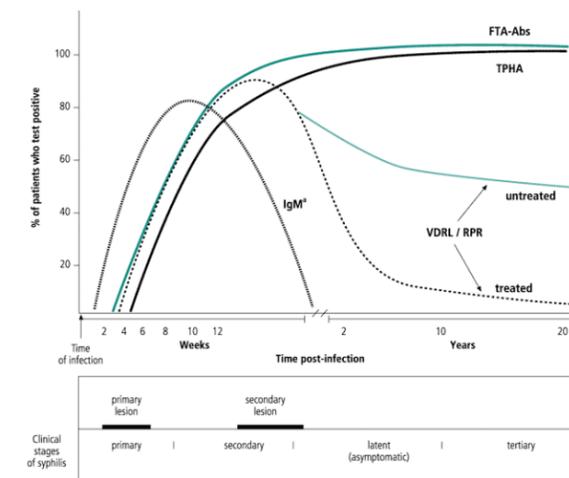
## HIV AND SYPHILIS

- The presence of HIV infection may result in an atypical presentation of syphilis.
- Direct sexual contact in the presence of genital ulcers increases the risk of HIV transmission 3 to 5 times.
- There is some evidence that individuals with HIV who are co-infected with syphilis are at an increased risk of neurosyphilis during the infectious stage (less than one year after infection).
- Referral of individuals with HIV who are co-infected with syphilis to an Infectious Disease Physician is recommended.

## DIAGNOSIS cont...

Important caveats for serologic diagnosis:

- Serology may be falsely negative in early syphilis.** As outlined in figure 2, serology can be falsely negative in the first 4 weeks of infection. In addition, the RPR may lag behind the TPPA. Therefore if someone has clinical features suggestive of primary infection both RPR and TPPA need to be ordered (if you order syphilis serology only, the RPR will only be performed). If both tests are negative and there is a high index of suspicion then the tests should be repeated in 2-4 weeks.



- False negative RPR can occur late in the tertiary phase.** In this situation a TPPA should be ordered

- Patients may remain serofast.** Although the reactivity to the RPR will disappear in the majority of patients who are successfully treated with benzathine penicillin, a small majority will have a persistent low titre (e.g. 1/8)

Stage	When to Test	Expected Drop in RPR Titre
Primary	1, 3, 6, 12 months post treatment (add another test at 24 months if not 0)	4 fold (2 tube) drop by 6 months 8 fold (3 tube) drop by 12 months 16 fold (4 tube) drop by 24 months
Secondary	1, 3, 6, 12 months post treatment (add another test at 24 months if not 0)	8 fold (3 tube) drop by 6 months 16 fold (4 tube) drop by 12 months
Early Latent	1, 3, 6, 12 months post treatment (add another test at 24 months if not 0)	4 fold (2 tube) drop by 12 months
Late latent/ tertiary	12 and 24 months post treatment	4 fold (2 tube) drop by 12 months
Neurosyphilis	6, 12 and 24 months post treatment	Case by case. Consult infectious diseases

- False positive RPRs can occur.** Because the RPR does not measure antibodies to the Treponemal pathogen, other syndromes can cause false positive reactions. These are outlined in figure 3.

### Causes of false positive RPR

- Pregnancy
- IV drug use
- Viral infections
  - EBV
  - Hepatitis
  - Varicella
  - Measles
  - Tuberculosis
- Malaria
- Connective tissue disease
- Lymphoma

Figure 3. Causes of false positive RPR

- Patients from areas where other treponemal diseases (Pinta, Yaws, Bejel) may have false positive TPPA.** Figure 4 depicts regions with "endemic treponemal" diseases. It would be reasonable to seek expert advice if a patient from these regions presents with a positive test.

