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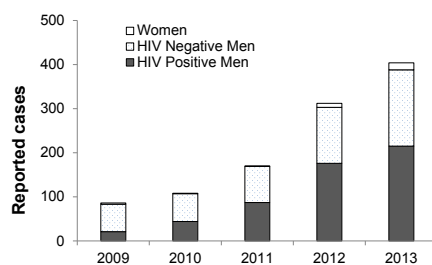
**SYPHILIS SCREENING: MORE THAN MEETS THE EYE**

**K**now syphilis in all its manifestations and relations, and all other things clinical will be added unto you.

—Dr. Wm. Osler<sup>1</sup>

Unfortunately, little has changed since the last *CD Summary* focusing on syphilis was published in September 2012. Infectious (primary, secondary and early latent infection) syphilis in Oregon continues to rise. During 2013, 404 (10.3 per 100,000 population) reported cases of early syphilis occurred in Oregon, the most since 1989. Most infections occurred among residents of the Portland metropolitan area: in 2012, the rate of primary and secondary syphilis in Multnomah County (21.6 per 100,000 population) was more than twice the national rate (9.2 per 100,000 population). The vast majority (96%) of Oregon cases are in men. Rates are highest among men who have sex with men (MSM), many of whom also have HIV (Figure 1).

**Figure 1. Infectious syphilis cases by year of diagnosis, sex and HIV status, Oregon 2009 – 2013**



While only a few cases have occurred in women, syphilis in pregnant women can result, catastrophically, in congenital syphilis. Previously rare in Oregon, two cases occurred during the first half of 2014, both of these in babies born to women who lived outside the Portland metropolitan area.

While patients should be encouraged to use condoms consistently with sexual activity, the highest yield interventions to curb syphilis may be those related to screening and timely treatment.<sup>2,3</sup>

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**INCREASE FREQUENCY OF SCREENING**

Frequent—every 3-month—screening for syphilis in high risk groups may be the best tool to control syphilis, as it can reduce transmissibility by limiting the time an infected individual remains untreated. A Canadian team simulated a model of syphilis transmission in MSM and concluded that increasing the frequency of screening in higher risk MSM was more effective at syphilis control than expanding syphilis screening to include more of the MSM community.<sup>4</sup>

In an Australian study, patients who received an automated text or e-mail reminder for STI check-ups at intervals designated by the patient—3, 6, or 12 months—were more likely to undergo regular screening and to have higher detected rates of early syphilis, gonorrhea, and chlamydia than their counterparts who did not receive the reminders.<sup>5</sup>

**HOW TO SCREEN**

CDC recommends using the traditional algorithm for syphilis detection: a non-treponemal test such as the rapid plasma reagin (RPR) or Venereal Disease Research Laboratory (VDRL), and if positive, confirmation with a treponemal test. A reverse sequence screening protocol has been implemented in some areas, resulting in confusion. In the reverse sequence, an automatable treponemal enzyme and chemiluminescence assay (EIA/CIA) test is used as the initial screening test and, if positive, followed by a non-treponemal test (RPR or VDRL) for confirmation. However, RPR or VDRL is negative in about half of cases with positive EIA/CIA. Confirmatory testing using *Treponema pallidum* particle agglutination (TP-PA) or fluorescent treponemal antibody

absorbed (FTA-ABS) tests was negative in 17.2% and 31.6% of discordant cases, indicating many false-positive results using the reverse sequence.<sup>6,7</sup> Be aware of which testing algorithm is used at your lab to ensure proper interpretation of lab results.

**Only you can prevent syphilis**

- Always take a sexual history
- Screen regularly based on history (Table, *infra*)
- Contact Local Health Department or Oregon Health Authority STD Program for assistance or advice regarding screening, test interpretation, reporting, or treatment 971-673-0153; <http://bit.ly/STDOR>
- CDC STD Treatment Guidelines: [www.cdc.gov/std/treatment/](http://www.cdc.gov/std/treatment/)

Screening (Box) for syphilis should include a detailed sexual history. Ask about the gender and number of a patient's sexual partners and condom use during sexual activity. If present, common physical findings of syphilis include the prototypical chancre of primary syphilis, a firm, round, painless lesion which marks the spot where the bacterium entered the body. Chancres can be intra-rectal or in other difficult-to-observe locations. Chancres typically appear 10–90 days after infection and last 3–6 weeks. Not everyone develops signs, but when present secondary syphilis is often characterized by a non-pruritic skin rash often seen on the palms of the hands and soles of the feet.

Additional signs or symptoms of secondary syphilis include non-specific findings such as fever, lymph node enlargement, sore throat, headache, weight loss, myalgias, and fatigue. However, it's not for nothing that syphilis is called the "great imitator." HIV co-infection can increase the variability of syphilis presentation; if you have HIV-positive patients, addition of routine RPR testing to regular labs should be performed to assure frequent screening. Both primary and secondary syphilis may resolve spontaneously.



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You can help promote syphilis awareness and screening as well as appropriate screening for gonorrhea, chlamydia, and HIV infection. Although our current outbreak affects MSM disproportionately, recent cases among women and cases of congenital syphilis illustrate the importance of continued attention to preventing syphilis among heterosexual men and women, especially given the severe consequences of syphilis infection acquired *in utero*, including stillbirths.

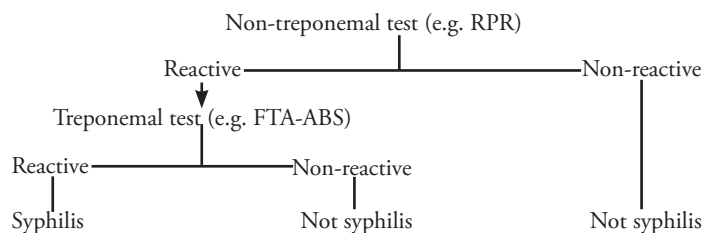
**Table: Recommended syphilis screening frequencies for various risk groups.<sup>8</sup>**

Screening Frequency	Risk Group
As needed	Individuals with signs or symptoms of primary, secondary, neurologic, or tertiary syphilis infection.
	Sexual partner(s) of individuals with lab confirmed syphilis infection
	Pregnant women, 1st prenatal visit*
Annually	Sexually active MSM
	Individuals with high-risk sexual behaviors (i.e., unprotected vaginal, anal, or oral sexual contact; multiple sexual partners; engaging in commercial or coerced sex)
	Sexually active individuals residing in areas with high syphilis morbidity
Every 3-6 months	High-risk MSM (i.e., anonymous partners, illicit drug use in conjunction with sexual activity, and those who have drug-using partners)

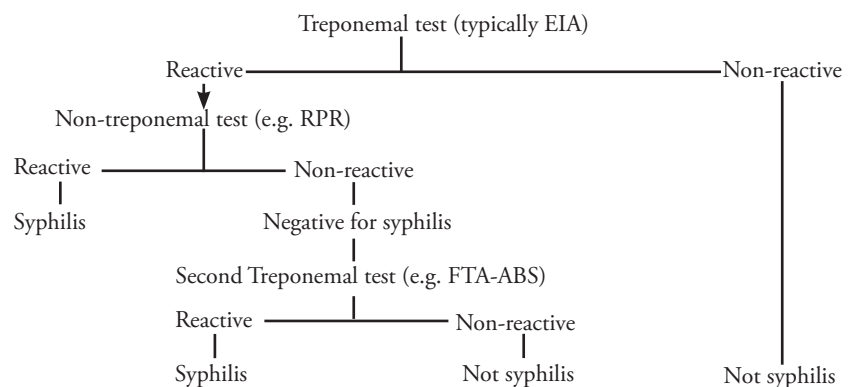
\*For pregnant women, consider adding a second syphilis screen test at or near 28 weeks gestation, especially for women with known risk factors such as a male partner who also has sex with other men, methamphetamine use or previous STIs.

**Figure 2. Current syphilis screening algorithms**

**"Traditional" Syphilis Screening**



**"Reverse Sequence" Syphilis Screening Algorithm**



**RESOURCES**

- Visit Oregon Health Authority, Sexually Transmitted Disease Prevention <http://bit.ly/STDOR>

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