



Nebraska Department of Health and Human Services  
**HEALTH ALERT NETWORK**  
**Advisory**



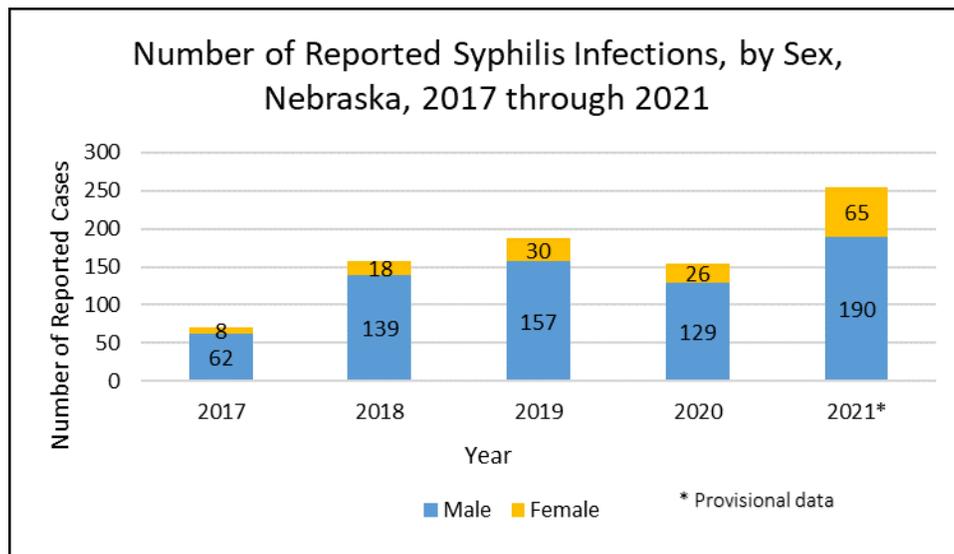
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RE: INCREASING SYPHILIS INCIDENCE IN NEBRASKA

DATE: March 21, 2022

The incidence of syphilis has increased rapidly in the past several years, globally and in Nebraska. In 2017, 70 cases of syphilis were reported from across Nebraska. In 2021, 255 cases were reported (364% increase). The incidence in females has increased from 8 to 65 (813% increase since 2017). In the past five years, there have been 4 cases of congenital syphilis (infection *in utero*); one in 2017 and 2020, and 2 in 2021. This highlights two trends: an increase in heterosexual and congenital transmission.



**Screening:** It is crucial to routinely screen at-risk populations including patients with HIV and other sexually transmitted diseases, individuals engaging in high-risk sexual behaviors (e.g., exchanging sex for drugs or money, or having condomless sex with multiple partners), and gay and bisexual men. Screening frequency is usually based on the patient risk status with some needing at least annual or more frequent screening. Screening can be performed by nontreponemal antibody testing (e.g., RPR) by using the traditional syphilis screening algorithm, or by treponemal antibody testing (e.g., immunoassays) using the reverse sequence algorithm.

All pregnant women should also be routinely screened, with screening frequency based on their risk status. Pregnant women with syphilis should be treated with the recommended penicillin regimen for their stage of infection as no proven alternatives to penicillin are available. All infants born to women with

reactive syphilis testing require diagnostic and clinical evaluation for congenital syphilis. (<https://www.cdc.gov/std/treatment-guidelines/congenital-syphilis.htm>).

**Clinical presentation:** Primary syphilis classically presents as a single painless ulcer or chancre at the site of infection but can also present with multiple, atypical, or painful lesions. Secondary syphilis manifestations can include skin rash, mucocutaneous lesions, and lymphadenopathy. Tertiary syphilis can present with cardiac involvement, gummatous lesions, tabes dorsalis, or general paresis.

Latent infections (i.e., those lacking clinical manifestations) are detected by serologic testing. Latent syphilis acquired within the preceding year is referred to as early latent syphilis; all other cases of latent syphilis are classified as late latent syphilis or latent syphilis of unknown duration.

Syphilis can also lead to neurological complications, visual loss, and hearing loss. As expected with an increase in syphilis, there is an increase in neurological manifestations. In 2021, 15 persons reported vision impairment including 8 persons with confirmed ocular involvement including uveitis. The impacts of vision impairment range from increased floaters and blurry vision to partial and complete vision loss in one eye. Early detection and treatment of ocular syphilis improves the chances of recovery.

It is important to screen, diagnose, and rapidly treat cases of syphilis. Sex partners of the person who has primary, secondary or early latent syphilis should be evaluated clinically and serologically for syphilis and might need to be treated based on the clinical findings, test results, and/or history of recent sexual contact. Treatment recommendations for syphilis are outlined below.

### **Recommended Treatment**

#### Primary, Secondary, and Early Latent Syphilis

2.4 million units of Benzathine penicillin G IM

#### Late latent syphilis

7.2 million units of Benzathine penicillin G IM, administered as 3 doses of 2.4 million units IM each week, at 1-week intervals

#### Tertiary syphilis (involving cardiovascular system or gummas with normal CSF examination)

7.2 million units of Benzathine penicillin G IM, administered as 3 doses of 2.4 million units IM each week, at 1-week intervals

#### Neurosyphilis including ocular syphilis, otosyphilis, tabes dorsalis, and general paresis (consider consultation with infectious diseases)

Aqueous crystalline penicillin G 18–24 million units per day, administered as 3–4 million units IV every 4 hours or continuous infusion for 10–14 days

Patients who are allergic to penicillin may need alternative treatment regimens or may have to undergo penicillin desensitization. Consider consultation with an infectious diseases specialist for management.

A fourfold decrease in the RPR 6 to 12 months after treatment will verify successful treatment. Failure of nontreponemal test titers to decrease fourfold 12 months after therapy for primary or secondary syphilis (inadequate serologic response) might be indicative of treatment failure. Reinfection should be suspected when a patient with an adequate serologic response to treatment of syphilis in the past now has a fourfold increase in titers.

Additional information can be found at the CDC website <https://www.cdc.gov/std/treatment-guidelines/syphilis.htm> and in the 2021 sexually transmitted infections treatment guidelines <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8344968/pdf/rr7004a1.pdf>. Thanks to Dr. Nada Fadul for collaborating with the DHHS team for this health alert network advisory.