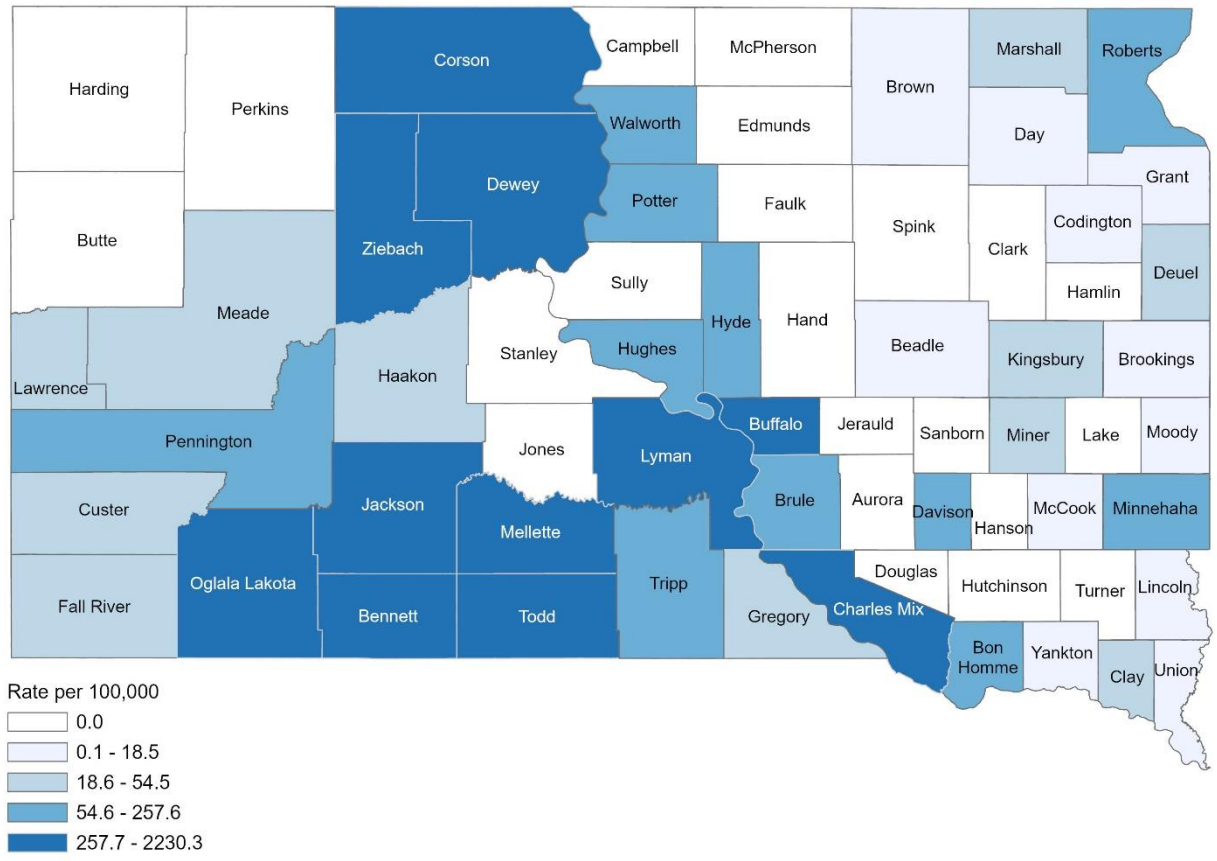
SOUTH DAKOTA DEPARTMENT OF HEALTH
Every South Dakotan Healthy and Strong

REDUCING AN UNPRECEDENTED RISE IN SYPHILIS RATES BY ENHANCED SCREENING & TESTING

SYPHILIS IN SOUTH DAKOTA

2023 DATA Provisional data as of 05.06.2024	
EARLY SYPHILIS	**CONGENITAL / SYPHILITIC STILLBIRTHS**
1,365 Cases Reported 9% Reduction from 2022 **1,265%** Increase from 5-Year Median	54 Congenital including 7 Syphilitic Stillbirths 35% Increase from 2022 **1,250%** Increase in 5-Year Median



**Note: Map accounts for distribution of early syphilis cases.*

RISK FACTORS:

- ☐ 96% heterosexual exposure
- ☐ 58% history of other STIs
- ☐ 40% history of incarceration
- ☐ 85% American Indian
- ☐ 59% Reported age range of 25-39 years-old
- ☐ 34% sex while intoxicated
- ☐ 28% history of IV drug use
- ☐ 24% cases reported among an institutionalized population

The SD Department of Health asks providers to perform enhanced screenings in select settings and populations.

SCREEN

PRENATAL CARE PROVIDERS

- ☐ All pregnant women should be screened for syphilis **three times** during pregnancy during this outbreak:
  - At first prenatal appointment ***OR*** at time of initial pregnancy diagnosis, if concerned for poor follow up.
  - At 28 to 32 weeks
  - At delivery
- ☐ All pregnant women delivering a stillbirth (gestational age ≥20 weeks)

*Three screenings during pregnancy are recommended for all pregnant women regardless of risk, as endorsed by the ACOG. See Screening for Syphilis in Pregnancy for complete recommendations.

EMERGENCY DEPARTMENT / URGENT CARE PROVIDERS / PRIMARY CARE PROVIDERS

- ☐ All pregnant women
- ☐ Women of reproductive age (15-45)
- ☐ Men who have sex with men
- ☐ Individuals with HIV infection
- ☐ Individuals with multiple sex partners, or a partner who has multiple sex partners
- ☐ Individuals incarcerated or with a history of incarceration
- ☐ Individuals who engage in IV drug use and/or substance use
- ☐ Individuals with a history of sexually transmitted infections (STIs)

☐ In an effort to stop congenital syphilis, **SD-DOH recommends enhancing syphilis screening to emergency room departments and urgent care.** In 2023, South Dakota mothers associated with congenital/syphilitic stillbirths had insufficient, late, or no prenatal care. Screening women of reproductive age (15-45 years) and sex partners to women of reproductive age can reduce congenital syphilis.

PHYSICAL EXAMINATION

- ☐ If the history or serologic tests are suggestive **AND/OR**
- ☐ Sex or needle-sharing partner with symptoms of or infection with syphilis
  - Evaluate signs of syphilis including,
    - Oral signs of syphilis, including mouth sores (chancres) or mucus patches
    - External genital, anal, or perianal sores (chancres) or other lesions (i.e., condyloma lata)
    - Rashes on the body, particularly on the palms of the hands or soles of the feet (a characteristic of syphilis infection that is unusual in other conditions)

Physical examination for signs of syphilis help determine the stage of syphilis, which determines the recommended treatment dosage.

MEDICAL HISTORY

- ☐ Previous STI history & treatment
- ☐ Sexual partner with STIs
- ☐ Symptom history: Particularly symptom history of sores on the genitals, anus, or mouth or a rash on the body, especially on the palms of the hands or soles of the feet.
- ☐ Sexual orientation
- ☐ Number of sex partners
- ☐ Injection Drug Use

TREAT

Immediately treat infected individuals, individuals with signs/symptoms, individuals who report exposure to syphilis, and individuals with 'reactive' results from a rapid syphilis test, even before confirmatory test results return. Additionally, if tests are 'nonreactive', but the clinician is suspicious of syphilis, the patient should be treated for syphilis.

For all stages of syphilis, the CDC preferred drug for treating patients is Penicillin G benzathine (Bicillin L-A), administered parenterally. Due to reported Bicillin L-A shortage, CDC strongly encourages providers to follow priority actions. For pregnant women, the only recommended treatment is Bicillin L-A. For non-pregnant individuals, an alternative treatment option is Doxycycline. The preparation used (i.e., benzathine, aqueous procaine, or aqueous crystalline), dosage, and length of treatment depend on the stage and clinical manifestations of syphilis. Late Latent Syphilis and Tertiary Syphilis require a longer duration of treatment therapy.

RISK CATEGORY	RECOMMENDED REGIMEN	ALTERNATIVES
Primary, secondary, or early latent: adults (including pregnant women and people with HIV infection)	Benzathine penicillin G 2.4 million units IM in a single dose	***For non-pregnant patients**, Doxycycline 100 mg orally 2 times/day or tetracycline 500 mg orally 4 times/day, for 14 days. ***Pregnant women** allergic to penicillin should be desensitized and treated with penicillin G, as there are no alternatives that exist for pregnant patients.
Late Latent or unknown duration: adults (including pregnant women and people with HIV infection)	Benzathine penicillin G 7.2 million units total, administered as 3 doses of 2.4 million units IM each at 1-week intervals	***For non-pregnant patients**, Doxycycline 100 mg orally 2 times/day or tetracycline 500 mg 4 times/day, for 28 days. ***Pregnant women** allergic to penicillin should be desensitized and treated with penicillin G, as there are no alternatives that exist for pregnant patients.
Neurosyphilis, ocular syphilis, and otosyphilis	Aqueous crystalline penicillin G 18-24 million units per day, administered as 3-4 million units by IV every 4 hours or continuous infusion, for 10-14 days	***For non-pregnant patients**, Procaine penicillin G 2.4 million units IM 1x/day PLUS probenecid 500 mg orally 4x/day, both for 10-14 days
For children or congenital syphilis	See STI Treatment Guidelines, 2021	
The complete list of recommendations on treating syphilis and discussion of alternative therapy in people with penicillin allergy can be found in STI Treatment Guidelines, 2021.		

POST EVALUATION

Clinical and serologic evaluations are used to follow up on the response to treatment determined by the baseline titers; although, titers can potentially increase for several weeks after treatment. If there are no

known exposures after treatment or no evidence of persistent or recurring signs or symptoms, then follow-up retesting should be performed according to the following:

- ☐ People with primary or secondary syphilis should have clinical & and serologic evaluation at 6 & 12 months after treatment.
- ☐ People with HIV infection should have a clinical and serological evaluation for treatment failure at 3, 6, 9, 12, and 24 months.
- ☐ People with latent syphilis should have quantitative nontreponemal serologic tests repeated at 6, 12, and 24 months.

MANAGEMENT OF PARTNERS

Anyone who has had sexual contact with an individual with syphilis should be notified, examined clinically, receive syphilis serologic testing, and receive treatment based on the following:

- ☐ Sexual contact to a patient with primary/secondary/early latent syphilis:
  - If exposed ≤ 90 days of a diagnosed case, **CDC recommends presumptive treatment for early syphilis, even if serologic test results are negative.**
  - If exposed ≥ 90 days of a diagnosed case, CDC recommends **presumptive treatment** if serologic test results are not immediately available, and follow-up is uncertain. If serologic tests are positive, treatment should be based on clinical evaluation, serologic testing, and syphilis stage. If serological tests are negative, no treatment is needed.
- ☐ Sexual contact to a patient with unknown duration or late syphilis:
  - Evaluation & presumptive treatment of contacts exposed within 12 months of first serologic evidence of infection, or re-infection in the case-patient.

TESTS

Diagnosis of syphilis requires the use of **two tests**: a nontreponemal and a treponemal test.

- ☐ **Nontreponemal Antibody Test:** Detect antibodies not specifically directed against the *Treponema pallidum* bacteria. The body produces these antibodies when an individual has syphilis but may also be produced in several other conditions. The tests are highly sensitive, but since they are non-specific, false-positive results can be caused by, for example, IDU, pregnancy, Lyme disease, certain types of pneumonia, malaria, TB, or certain autoimmune disorders, including lupus. Nontreponemal tests include:
  - **RPR** (Rapid Plasma Reagin): in addition to screening, this test is useful in monitoring treatment for syphilis. It may also be used to confirm the presence of an active infection when an initial examination for treponemal antibodies is positive. For this purpose, the level (titer) of the antibody is measured.
  - **VDRL** (Venereal Disease Research Laboratory): in addition to blood, this test is primarily performed on CSF to help diagnose neurosyphilis.

- ☐ **Treponemal Antibody Test:** Detect antibodies that specifically target *T. pallidum*. They are highly specific for syphilis, meaning other conditions are unlikely to cause a positive result. However, once a person is infected and these antibodies develop, they remain in the blood for life. Treponemal antibody tests include:
  - **FTA-ABS** (Fluorescent treponemal antibody absorption): this test is useful after the first 3-4 weeks following exposure. In addition to blood testing, it can be used to measure antibodies to *T. pallidum* in the CSF to help diagnose neurosyphilis.
  - **TP-PA** (*T. pallidum* particle agglutination assay): this test is sometimes performed instead of FTA-ABS because it is more specific and has fewer false positives.
  - **DPP HIV-Syphilis Rapid Test** (*T. pallidum* particle immunoassay): this test is a single-use rapid, qualitative, multiplex, immunoassay for the detection of antibodies to HIV-1/2, and/or *Treponema pallidum* bacteria in fingerstick whole blood, venous whole blood, or plasma specimens.

- **MHA-TP** (Micro hemagglutination assay): another confirmatory method; this test is used much less commonly.
- **IgG and IgM Enzyme Immunoassays ~ IgG** (SYPGN / Syphilis Total Antibody, Serum): is recommended for prenatal screening. Testing for IgM-class antibodies should not be performed during routine pregnancy screening unless clinically indicated.

STAGES OF INFECTION AND CLINICAL DESCRIPTION

- ☐ **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:** Characterized by localized or diffuse mucocutaneous lesions (e.g., rash – such as non-pruritic macular, maculopapular, papular, or pustular lesions), often with generalized lymphadenopathy. Other signs can include mucous patches, condyloma lata, and alopecia. The primary ulcerative lesion may still be present.
- ☐ **Early Non-Primary and Non-Secondary Syphilis:** A person's initial infection has occurred within the previous 12 months, and there are NO signs or symptoms of primary or secondary syphilis. May fall between primary and secondary, and after the secondary stage.
- ☐ **Unknown Duration or Late:** Person's initial infection has occurred greater than 12 months previously or in which there is insufficient evidence to conclude that infection was acquired during the previous 12 months.

SYPHILIS MANIFESTATION

Neurosyphilis, ocular syphilis, and otosyphilis should be considered in the differential diagnosis of neurological, ocular, and other signs and symptoms among persons with HIV Infection

- ☐ **Congenital:** An infant or child (aged less than 2-years) may have signs such as hepatosplenomegaly, rash, condyloma lata, snuffles, jaundice (nonviral hepatitis), pseudo paralysis, anemia, or edema (nephrotic syndrome and/or malnutrition). An older child may have stigmata (e.g., interstitial keratitis, nerve deafness, anterior bowing of shins, frontal bossing, mulberry molars, Hutchinson teeth, saddle nose, rhagades, or Clutton joints).
- ☐ **Syphilis Stillbirth:** A fetal death that occurs after a 20-week gestation or when the fetus weighs greater than 500g and the mother had untreated or inadequately treated at delivery.

ADEQUATE TREATMENT FOR INFECTED CASE DURING PREGNANCY

- Completion of a penicillin-based regimen, appropriate for stage of infection, 30 or more days before delivery.
- Pregnant women MUST be treated with penicillin. If allergic, she must be desensitized and treated to stage of illness.

INCUBATION PERIOD

- ☐ **Primary**: A chancre typically occurs about 3 weeks (range 10 to 90 days) after exposure and lasts 3 to 6 weeks.
- ☐ **Secondary**: 4 to 8 weeks after onset of the primary chancre.
- ☐ **Neurologic, Ocular, or Otic**: Manifestations can occur at any stage of syphilis.
- ☐ **Late clinical**: Manifestations (tertiary syphilis) generally occur after 15–30 years of untreated infection.

What do Disease Intervention Specialists do?

CASE INTERVENTION AND PARTNER NOTIFICATION

Disease Intervention Specialists (DIS) follow-up with and provide case intervention services to all physician-diagnosed and/or suspect cases. **Case intervention includes:**

- ☐ Completing a medical chart review for necessary patient information (i.e., diagnostic, demographic, clinical, and known risk history information).

- ☐ Conducting client interviews to obtain additional pertinent information, elicit contacts, provide partner notification and disease management for follow-up and prevention.
- ☐ Providing STI testing and treatment assistance (i.e., arranging transportation).
- ☐ Communicating pertinent information that is learned through investigations with the medical provider to assist with the testing and treatment continuum of care.

DISEASE INTERVENTION SPECIALIST (DIS) CONTACT INFORMATION

Contact your local DIS with syphilis questions or if you need assistance contacting a client for testing, treatment, and counseling for syphilis, HIV/AIDS, and other sexually transmitted infections.

Aberdeen 402 S. Main St. Aberdeen, SD 57401-4127 Toll-free: 1-866-805-1007	**Mobridge** 210 East Grand Crossing, Suite A Mobridge, SD 57601 Toll-free: 1-833-618-2740	**Sioux Falls** 4101 West 38th St., Suite 102 Sioux Falls, SD 57106 Toll-free: 1-866-315-9214
Pierre 740 E. Sioux, Suite 107 Pierre, SD 57501-3395 Toll-free: 1-866-229-4927	**Rapid City** 221 Mall Dr., Suite 102 Rapid City, SD 57701 Toll-Free: 1-866-474-8221	**Watertown** 2001 9th Ave. SW #500 Watertown, SD 57201-4038 Toll-free: 1-866-817-4090
Mitchell 1420 North Main St. Mitchell, SD 57301 605-995-8051	**Main office** Toll-Free: 800-592-1861	

Additional Resources for Providers

CDC 2021 STD Treatment Guidelines

- ☐ CDC has a mobile-friendly website for the STI Treatment Guidelines, 2021 available at: https://www.cdc.gov/std/treatment- guidelines/default.htm
- ☐ Provider Resources, including mobile app, wall charts and pocket guide, are available at: https://www.cdc.gov/std/treatment-guidelines/provider-resources.htm
- ☐ A recording of the STI Guidelines informational webinar, questions and answers are available at: https://www.cdc.gov/std/treatment/default.htm
- ☐ CDC Clinical Reminders during Bicillin L-A Shortage: https://www.cdc.gov/std/dstdp/dcl/2023-july-20-Mena-BicillinLA.htm

STI CLINICAL CONSULTATION SERVICE

The National Network of STI Clinical Prevention Training Centers offers a *Clinical Consultation Service* intended for licensed healthcare professionals and STI program staff. Submit a clinical consult by going to the online consultation request at https://www.stdccn.org/render/Public.

NATIONAL STI CURRICULUM

The *National STI Curriculum* is a free educational website from the University of Washington STI Prevention Training Center. This online modular learning experience addresses the epidemiology, pathogenesis, clinical manifestations, diagnosis, management, and prevention of STIs. It is continuously updated and integrates the most recent STI Treatment Guidelines. Free CME/CNE/CE are available. Access this resource at https://www.cdc.gov/std/training/courses.htm

A Guide for Taking a Sexual History is a framework guide on how to discuss sexual health issues with patients. Available at https://www.cdc.gov/std/treatment/sexualhistory.htm

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