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**Editors:**Joe McLaughlin, MD, MPH  
Jared Parrish, PhD**Bulletin No. 9**  
August 2, 2023**Congenital Syphilis on the Rise — Alaska, 2018–2022****Background**

Congenital syphilis (CS) is a preventable health event that occurs when the spirochete *Treponema pallidum* is vertically transmitted from the mother to the developing fetus. If left untreated, CS may cause neurologic or musculoskeletal disabilities or death of the fetus.<sup>1</sup> This Bulletin aims to describe the epidemiology of CS in Alaska.

**Methods**

CS reports from 2018–2022 within the National Electronic Disease Surveillance System Base System (NBS) were investigated by the Section of Epidemiology to determine if they are CS cases under the CDC surveillance case definition and to identify CS risk factors.<sup>2</sup> Case investigations included medical record reviews and patient interviews. CS cases were then linked to birth and death records obtained from the Health Analytics and Vital Records Section (HAVRS). Probable syphilitic stillbirth cases were identified using fetal death records where a fetal death occurred after 20 weeks gestation, fetal weight was more than 500 grams, and the mother had untreated or inadequately treated syphilis at delivery.<sup>2</sup> Incidence rates were calculated by multiplying the number of CS occurrences among live births per year by 100,000, then dividing by the number of live births in Alaska per year.

**Results**

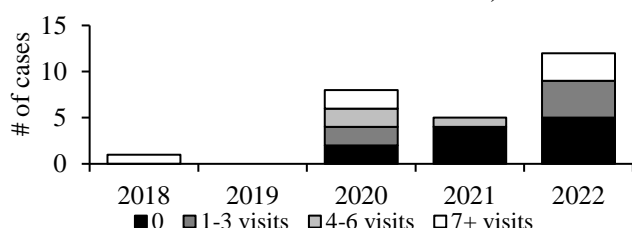
During 2018–2022, 26 CS cases were identified. All 26 cases were linked to an Alaska birth certificate (n=25, 96%) or fetal death records (n=1). Of the 26 cases, one was a probable syphilitic stillbirth case.<sup>2</sup> From 2018–2022, CS counts rose from 1–12 cases annually (Figure). In 2021, the Alaska CS incidence rate was 54 per 100,000 live births (the 2021 U.S. CS rate was 78 per 100,000 live births).<sup>3</sup> In 2022, the Alaska CS incidence rate rose to 119 per 100,000 live births (2022 U.S. CS incidence data are not yet available).

All CS cases were born in a hospital to mothers aged 16–37 years. Most mothers of CS cases were Anchorage residents (85%, 21/26). Among the 26 parents who gave birth to an infant with CS, 15 (58%) were identified as Alaska Native/American Indian only on the infant's birth certificate. Over half (65%, 17/26) of mothers had the equivalent of a high school diploma or more education.

Mutable factors present among mothers of CS cases from 2018–2022 included limited (<4 visits) or no prenatal care (PNC) (80%, 20/25), substance use, and housing instability. Most (69%, 18/26) mothers reported heroin, amphetamine, methamphetamine, or cocaine use within 12 months of the case investigation, and 42% (11/26) of mothers experienced homelessness or unstable housing within 12 months of the case investigation.

During 2022, 42% (5/12) of the cases received no PNC, and 75% (9/12) received <4 visits (Figure).

**Figure. Number of Congenital Syphilis Cases, by Number of Prenatal Care Visits and Year — Alaska, 2018–2022**

**Discussion**

The number of CS cases in Alaska increased dramatically over the last 5 years, resulting in dozens of newborns experiencing a

preventable life-threatening disease. The rise of CS mirrors the increase of syphilis previously reported in Alaska among heterosexual females of reproductive age who use substances and experience unstable housing conditions.<sup>4</sup>

Alaska statutes maintain that patients must be serologically tested for syphilis during their first prenatal care (PNC) visit unless they do not consent.<sup>5</sup> Further syphilis screenings are not legally required during subsequent PNC visits;<sup>5</sup> however, the large proportion of CS cases among mothers receiving little to no PNC suggests a multipronged prevention approach.

First, a minimum of two serological syphilis tests should occur during the prenatal care period – this action can identify late gestational infections and reinfections and ensure completion of syphilis treatment. Second, focused community syphilis testing efforts should increase. While no inherent aspects of a mother's race or education create risk, the disparate social conditions surrounding these factors, such as housing instability and substance use, can be contributing risk factors. Third, further investigation of these CS cases, such as through a multi-disciplinary review committee, should examine the factors and conditions that impact access to adequate prenatal care to ensure early syphilis detection during pregnancy.

**Recommendations**

- Clinicians should test for syphilis during the first and third trimesters of all pregnancies *and* at the time of delivery. Promptly inform patients of their syphilis status, ideally before facility discharge, and document all test results at delivery.
- Test pregnant women with late or no PNC, unstable housing/homelessness, or substance abuse (e.g., heroin or methamphetamine) at any entry point into the health care system (e.g., emergency department, hospital, urgent care, and substance abuse treatment visits).
- Take the following steps for pregnancies with suspected/probable syphilis:
  - Obtain and document the person's sexual history.
  - Consider presumptive treatment based on exposure and patient reported symptoms, obtain locating information, and notify the Section of Epidemiology (907-269-8000) within 2 business days.
  - Test for HIV and other sexually transmitted infections (include samples from extragenital sites).
- All neonates born to mothers who have reactive nontreponemal or treponemal test results should be evaluated with a quantitative nontreponemal serologic test (RPR or VDRL) performed on the neonate's serum.
- Offer comprehensive STI testing for sexually active individuals with new, multiple, or anonymous partners, those capable of becoming pregnant, those who abuse substances, and those experiencing unstable housing.
- Clinicians should counsel patients on safe sex practices and offer family planning resources, including long-acting reversible contraception and condoms for high-priority populations and those not wanting to become pregnant.

**References**

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