Epi-Aid – 2023-016

Undetermined risk factors for syphilis transmission among American Indians—Great Plains Area, 2022–2023

Out Briefing Presentation

July 21, 2023

Agenda

Overview
Summary of Activities
Describing the Syphilis Outbreak in Great Plains Area
Preliminary Themes and Recommendations
Next Steps

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Epi Aid Timeline

- **February 16, 2023**: GPTLHB passes a resolution to address increases in syphilis, including an Epi Aid request.
- **March 8, 2023**: CDC receives request for an Epi Aid.
- **July 9, 2023**: Epi Aid team deploys to Rapid City, SD.

Increasing rates of syphilis in Great Plains Area

GPTLHB serves 18 Tribes and Tribal Communities.

Epi Aid Objectives

1. Characterize syphilis cases among American Indians in the Great Plains Area.
2. Identify untreated persons with syphilis or suspected of having syphilis, and as appropriate, support examination, treatment, and partner services.
3. Understand the landscape of syphilis screening and treatment services.
4. Advise on syphilis screening and treatment recommendations and congenital syphilis control strategies.

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Epidemiology Team

Activities:
- Describing epidemiology of syphilis outbreak
- Preparing surveillance data
- Identifying charts for clinical, DIS and behavioral teams

Major Accomplishments:
- Promoted collaboration between states and GPTEC regarding matching surveillance data with tribal registry data
- Data sharing from SD and NE to GPTEC and CDC (in process for Iowa and North Dakota)
- Completed preliminary analyses of SD and NE data

Clinical Team

Activities:
- Facility assessments and key informant interviews with key staff
- Medical chart abstractions for people diagnosed with syphilis during pregnancy

Accomplishments:
- Facility assessment completed at 3 IHS, 1 Tribal, and 1 private service site, speaking with 50 staff across 5 sites.
- Key informant interview (KII) with 38 informants
- Reviewed available Monument Health medical records for 33 people diagnosed with syphilis during pregnancy (including 18 with infants clinically treated for CS)

Behavioral Team

Activities:
- Key informant interviews (KII) with program staff
- In-depth interviews (IDI) with persons diagnosed with syphilis during pregnancy
- Desk review of field records/patient charts among persons diagnosed with syphilis during pregnancy

Accomplishments:
- 1 KII (GPTLHB staff), 5 IDIs
- 29 field records/patient charts reviewed

Disease Intervention Team

Activities:
- Locate patients via field investigation
- Conduct partner services including rigorous contact tracing
- Communicate with providers regarding patients' need for examination and treatment
- Transport patients to and from clinic
- Address additional needs (ensuring patient received other prescriptions, providing water/nutrition)

Disease Intervention Team

Accomplishments:

- Built trust with the community
- Worked closely with SD DIS in Rapid City, PHN in Pine Ridge, and Nurse at Oyate Health Center; 2 SD DIS joined CDC DIS for field investigations.
- Performed 86 field visits (Rapid City and Pine Ridge) in 4 days of field activities
- 15 people examined (including 8 women of reproductive age), of which 14 were treated

DIS: Disease intervention specialist, PHN: Public health nurse

States Served by GPTLHB

North Dakota
South Dakota
Nebraska
Iowa

1,718 acquired syphilis cases in Nebraska January 2020 – June 2023

34 years (15–83) Average age

5% AI/AN alone

66% Male sex

Source: Nebraska surveillance system, 2020–2023 (as of July 7, 2023)

Acquired syphilis cases among AI/AN are on the rise.

Source: Nebraska surveillance system, 2020–2023 (as of July 7, 2023)

AI/AN: American Indian or Alaska Native, single race, any ethnicity

In 2022, **AI/AN** persons experienced **114 more** acquired syphilis cases per 100,000 persons, compared to White persons.

Source: Nebraska surveillance system, 2020–2023 (as of July 7, 2023)  
**AI/AN**: American Indian or Alaska Native, single race, any ethnicity  
The **male-to-female case ratio** for acquired syphilis cases in Nebraska **differ for AI/AN** compared to other races.

Source: Nebraska surveillance system, 2020–2023 (as of July 7, 2023)

AI/AN: American Indian or Alaska Native, single race, any ethnicity

States Served by GPTLHB

North Dakota
South Dakota
Nebraska
Iowa

3,786 acquired syphilis cases in South Dakota January 2020 – June 2023

33 years (15–83) Average age

48% Male sex

Source: South Dakota surveillance system, 2021–2023 (as of July 7, 2023)

About 80% of acquired syphilis cases in South Dakota January 2020–June 2023 were among American Indian or Alaska Native persons.

Source: South Dakota surveillance system, 2021–2023 (as of July 7, 2023)
The **greatest increase** in acquired syphilis rates in South Dakota has occurred among **AI/AN persons**.

Source: South Dakota surveillance system, 2020–2023 (as of July 7, 2023)

AI/AN persons experienced **988 more syphilis cases per 100,000 people** compared to White persons in 2022.

Source: South Dakota surveillance system, 2020–2023 (as of July 7, 2023)

Over half of acquired syphilis cases among AI/AN persons occur in persons aged 25-44 years.

Source: South Dakota surveillance system, 2020–2023 (as of July 7, 2023)


AI/AN: American Indian or Alaska Native, single or multiracial
The **male-to-female case ratio** for acquired syphilis cases **differs for AI/AN** compared to other races.

Source: South Dakota surveillance system, 2020–2023 (as of July 7, 2023)

**AI/AN**: American Indian or Alaska Native, single or multiracial

14% of AI/AN acquired syphilis cases among reproductive age females are pregnant persons.

AI/AN: American Indian or Alaska Native, single or multiracial

Source: South Dakota surveillance system, 2020–2023 (as of July 7, 2023)

Pregnancy and parenthood are sacred times in our lives.

Get tested for syphilis today!
Acquired syphilis cases have increased among AI/AN population in South Dakota since 2020.

Source: South Dakota surveillance system, 2020–2023 (as of July 7, 2023)

AI/AN: American Indian or Alaska Native, single or multiracial

About 50% of acquired syphilis cases occur in persons who have ever been incarcerated.

Source: South Dakota surveillance system, 2020–2023 (as of July 7, 2023)

AI/AN: American Indian or Alaska Native, single or multiracial

About 1 in 3 acquired syphilis cases occur in persons who report current or prior injection drug use.

Source: South Dakota surveillance system, 2020–2023 (as of July 7, 2023)

AI/AN: American Indian or Alaska Native, single or multiracial

Congenital syphilis cases are **increasing** in South Dakota and **90%** were born to **AI/AN mothers**.

Overall, **15%** were stillborn or an infant death.

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Source: South Dakota surveillance system, 2021–2023 (as of July 7, 2023)
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Theme A:

Upstream social determinants of health are fundamental drivers in the syphilis outbreak among American Indians.
Social Determinants of Health

- Education Access and Quality
- Health Care Access and Quality
- Economic Stability
- Neighborhood and Built Environment
- Social and Community Context
Social Determinants of Health

- Low Sexual Health Literacy
- Limited Educational Opportunities
- Housing Crisis
- Poverty
- Few Employment Opportunities
- Education Access and Quality
- Health Care Access and Quality
- Economic Stability
- Neighborhood and Built Environment
- Social and Community Context
- Incarceration
- Discrimination
- Intimate Partner Violence
- Substance Use

- Maternal Health Crisis
- Mistrust in Healthcare System
- Fragmented Healthcare
- Lack of Transportation
- Rural Communities
- Housing Crisis

Transportation issues impact syphilis care and treatment in both rural and urban areas.

[Patients] have no way of getting back home after getting to the hospital because of lack of transportation. Once they get sent by EMS, they have no way to get back. They don’t have family that have a vehicle, no one has reliable transportation. And even if they do, they don’t have gas money to get anywhere. So transportation is a huge issue and a barrier for a lot of things – Social Worker.
Transportation issues impact syphilis care and treatment in both rural and urban areas.

IDI participants shared that transportation was their biggest barrier:

- Transportation is the biggest issue here...you can’t get anywhere...you need transport, especially in the winter...[What we need is] steady transport for [pregnant women with syphilis], to do [treatment] right away. – IDI-005
Transportation issues impact syphilis care and treatment in both rural and urban areas.

Experience of the DIS team:
- No public transportation available in any of the areas Epi Aid DIS team worked
- Economic situation does not allow for other transport services (rideshare)
- 13 of 14 clients would not have been treated without transportation services provided by DIS team

Adequate prenatal care is inaccessible to those most at risk.

Among birthing parents of congenital syphilis infants:

35% had no prenatal care

In the United States, 2.1% of pregnant mothers did not receive prenatal care in 2021.¹


Source: South Dakota surveillance system, 2021–2023 (as of July 7, 2023)

Adequate prenatal care is inaccessible to those most at risk.

Among birthing parents of congenital syphilis infants:

- **43%** accessed prenatal care in the 2nd or 3rd trimester
- **35%** had no prenatal care

In the United States, **2.1%** of pregnant mothers did not receive prenatal care in 2021.¹

Source: South Dakota surveillance system, 2021–2023 (as of July 7, 2023)


Adequate prenatal care is inaccessible to those most at risk.

Among birthing parents of congenital syphilis infants:

- 35% had no prenatal care
- 43% accessed prenatal care in the 2nd or 3rd trimester
- Only 22% accessed prenatal care in the 1st trimester

In the United States, 2.1% of pregnant mothers did not receive prenatal care in 2021.¹

Source: South Dakota surveillance system, 2021–2023 (as of July 7, 2023)

Adequate prenatal care is inaccessible to those most at risk.

- **Limited OB/GYN providers** in Rapid City, and even more limited outside Rapid City
  
  - OHC midwives caring for over 200 patients between 2 providers
  - *One of the problems we hear is lack of providers – someone is trying to see a midwife in ... and there isn’t anyone they can see...We have moms that say they moved up here to Rapid to get prenatal care.* – Social Worker

- **Limited to no penicillin available in many outpatient OB clinics**
Punitive policies complicate prevention, diagnosis and treatment of people with syphilis during pregnancy.

– In South Dakota, **reporting to CPS is mandatory** if patient has substance use during pregnancy

*There is a hesitancy to present to medical care because of concern that it [substance use] will be identified as child abuse* - Provider
Punitive policies complicate prevention, diagnosis and treatment of people with syphilis during pregnancy.

- Mandates regarding the condemnation of houses involved in meth use result in housing instability in tribal communities.

*I can see it driving through areas – entire communities boarded up as an impact of meth.* - Public Health Nurse

**Theme A:** Upstream social determinants of health are fundamental drivers in the syphilis outbreak among American Indians.

**Preliminary Recommendations:**

To counter transportation barriers:
- Consider **mobile testing and treatment**
- Allow DIS and PHNs to **transport patients to care**.
Theme A: Upstream social determinants of health are fundamental drivers in the syphilis outbreak among American Indians.

Preliminary Recommendations:

To counter transportation barriers:
- Expand **field treatment services**
- Ensure consistent access to **presumptive and preventive therapy**
- Consider introducing **rapid testing for specific populations**:
  - Providers or DIS should be provided a framework for appropriate patient selection (i.e. patients with no known history of syphilis, not otherwise eligible for presumptive therapy, pregnant people).
  - Pair with formal confirmatory treponemal/non-treponemal testing

Theme A: Upstream social determinants of health are fundamental drivers in the syphilis outbreak among American Indians.

Preliminary Recommendations:
To address gaps in prenatal care:
- Adopt a no-wrong-door approach to care of pregnant persons.
- Integrate syphilis screening and linkage to care in non-traditional settings.
- Continue to investigate how punitive policies impact care of pregnant persons.

Theme B:

Syphilis is not well understood.
Knowledge gaps about syphilis transmission and outcomes exist in the community.

- IDIs showed **gaps in syphilis knowledge and awareness**
  
  - IDI-005 knew of someone who had syphilis and heard that it closed her ‘urethrian tubes;’ “*I don’t know if it was true or not but it spooked me.*”
  
  - IDI-001 did not know how she got syphilis. She knew you could get it from a sexual partner, but her boyfriend (now husband) was negative. “*How is he negative and I’m positive?*” She thought she got it from sharing a drink with someone who had syphilis.
Knowledge gaps about syphilis transmission and outcomes exist in the community.

DIS interviews found that a majority of people were aware of syphilis by name but none could explain its effects, how it spreads, or how it affects the baby.

_in some patient's charts, they [the patient] think that they get treated and that’s that, and they don’t think they can get it again, or they think they get one dose and they are done._ - Nurse
There are also gaps in provider knowledge.

- Based on chart abstraction findings there are areas for improvement:
  - Inconsistent use of follow-up titers after treatment and difficulties with interpretation
  - Maternal treatment started >30 days prior to delivery being considered inadequate if 2nd or 3rd dose falls within 30 days

There are questions regarding staging, especially regarding repeat titers and some confusion around that. – Provider

Theme B: Syphilis is not well understood.

Preliminary Recommendations:

At the community level:

– Continue education and awareness campaigns; consider expanding into schools and jails/prisons.

– Leverage strong tribal community networks for local outreach and education.

– KII s and IDIs showed that Aunties were a trusted source of sexual health information for women; provide education to Aunties and work with/through them to increase syphilis knowledge to those most at risk.

Theme B: Syphilis is not well understood.

Preliminary Recommendations:

At the provider level:

- Continued **education on symptoms, staging, complications** and treatment
  
  - **Presumptive treatment**, while ordering and awaiting labs, is vital
  - Obtain follow-up non-treponemal titers following treatment at **appropriate intervals**
  - Appropriate staging ensures **appropriate use of antimicrobials**

- Increase understanding of and comfort with interpretation of rapid tests

Theme C:

There is a need for enhanced field investigation and contact tracing to stop community transmission.
82% Syphilis cases interviewed by South Dakota DIS (2020-2023)

57% Phone interview
19% Field interview
19% Medical or IHS facility

Source: South Dakota surveillance system, 2020–2023 (as of July 7, 2023)

Contact tracing by staff at IHS facilities is limited by understaffing and challenges with large catchment areas.

The reservation is the size of the state of Connecticut, which can make tracing across the full jurisdiction pretty difficult. - Public Health Nurse
Female A

Female A

Female A

Male A

Female A

Female B

Female C

Female D

Male A

Male B *incarcerated

Female A
Female B
Female C
Female D
Male A
Male B *incarcerated

Female A

Female B

Female C

Female D

Male A

Male B *incarcerated

Theme C: There is a need for enhanced field investigation and contact tracing to stop community transmission.

Preliminary Recommendations:

- Increase DIS capacity to address need for enhanced field investigation and partner services
- Consider further technical assistance and surge support from CDC for disease intervention activities

Theme D:

Case management is fragmented but resources are available that can be leveraged.
Case management is fragmented.

- **Limited maternal data** at the time of delivery impacts clinical decision making for infants born to individuals diagnosed with syphilis during pregnancy
  - Of the 25 neonatal charts reviewed, 4 infants were initiated on IV penicillin and later discontinued when maternal records were located
Resources are available and can be leveraged.

- GPTLHB/GPTEC – access to incentives and other resources; direct programming; testing initiatives; direct care for the community; epidemiologic capacity; advocacy
- Tribal health services – access to transportation (CHR); additional resources; direct programming; invaluable insight into community; advocacy
- State DOH – receives data from various testing/treatment sites; knows who needs treatment; DIS; epidemiologic capacity
- IHS – provide direct care for community; collect data; PHNs

Local best practices can be implemented by GPTLHB.

Facility-level best practices:

- We have an interdisciplinary team so that we can meet weekly and take a multidisciplinary approach. That has been working quite well.
  - Public health nurse

- Action plan for implementation of IHS CMO recommendations, engaging key stakeholders with timely deliverables.

Local best practices can be implemented by GPTLHB.

### Tribal - IHS collaboration

- We have a **mini-lab** in the back of our SUV... we have a portable centrifuge for spinning down blood. We can find people in homes, on the street, in treelines, etc and we **offer testing** and sampling in all these locations, and also **offer transportation** to clinics.
  - Public Health Nurse

Local best practices can be implemented by GPTLHB.

- **OHC - DOH collaboration**
  - If they [SD DIS] locate someone they call and let [us] know. [I] am able to do **field based PCN treatment**. If they do not have a PCP we make an appointment to establish care or set up ... **holistic follow up and additional needs**. - Public Health Nurse
Theme D: Case management is fragmented but resources are available that can be leveraged.

Preliminary Recommendations:

- Establish syphilis task force including key partners
  - GPTLHB/GPTEC, SD DOH, IHS, SDUIH, primary community clinical providers and other community advocacy groups
- Improve coordination across IHS, between GPTEC and State/IHS for services and case management
  - Everyone holding pieces of the puzzle that leads to success
  - Communication across facilities to provide optimal case management

Theme E:

Data access issues are cross cutting.
Data sharing across all partners is needed to:

- Understand the epidemiology of syphilis outbreak
- Guide programs and policies

**Theme E: Data access issues are cross cutting.**

**Preliminary Recommendations:**

Improve data sharing between public health partners (GPTLHB/GPTEC, DOH, IHS, Tribes) to facilitate and coordinate syphilis prevention and control activities.

Epi Aid Next Steps

- Data sharing from North Dakota and Iowa
- Complete quantitative and qualitative data analysis
- Submission of Final Report to GPTLHB within 3 months
- Discussions on further dissemination of findings

Resources

- Meghan Curry O’Connell - Email: Meghan.Oconnell@gptchb.org; 605-510-7786
  - Chief Public Officer, GPTLHB
- stopsyphilis.org
- CDC Disease Intervention Support and Assistance Team: dirbta@cdc.gov
- CDC STI treatment guidelines (STI Treatment Guidelines (cdc.gov))
- National STD Curriculum (www.std.uw.edu)
- NNPTC clinical consult service (www.stdccn.org/render/public).
- National Network of Disease Intervention Training Centers (https://nationalditc.org/)

For more information, contact CDC
1-800-CDC-INFO (232-4636)

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

Thank you!