Partnering to Prevent Congenital Syphilis

Dawne DiOrio, MPA, CPH
Public Health Advisor
Centers for Disease Control and Prevention
Indiana State Department of Health
Sexually Transmitted Disease Program
Acknowledgements

• Emily Fussell, ISDH STD Program Specialist
• Sylvia Huq, MPH, ISDH STD Program epidemiologist
What is Congenital Syphilis (CS)?

- Occurs when a pregnant woman with syphilis is not adequately treated in time to prevent transmission to fetus.
  Syphilis is an STD that can be cured with an injection of long-acting penicillin.
- Approximately 80% of women untreated for syphilis will pass it to the fetus during pregnancy (very rare during birth).
- Risk of CS is greater if woman contracted syphilis within the last 12 months rather than greater than 12 months ago.
How serious is congenital syphilis?
STD Morbidity is Climbing

Primary and Secondary Syphilis - Rates of Reported Cases, United States and Indiana, 1994-2017
Congenital Syphilis Trends – Indiana

- In Indiana, no CS cases reported between 2008 and 2013.
  - 23 cases reported between 2014 and 2016

- Infectious syphilis cases among Indiana women increased 227.3% between 2014-2016 (11 cases to 36 cases).
With increases in syphilis, congenital syphilis is also on the rise.
SYPHILIS IN NEWBORNS: THE STATE OF THE NATION
2017

Reported at least one case of congenital syphilis.

5 STATES ACCOUNTED FOR 70% OF CASES

Source: U.S. Centers for Disease Control and Prevention
SYPHILIS TESTING IS ESSENTIAL FOR ALL PREGNANT WOMEN

ONE TEST MAY NOT BE ENOUGH

START TESTING EARLY

AND

AGAIN IF NEEDED

The chance of a mother passing syphilis onto her unborn baby if left untreated or untreated.

Source: U.S. Centers for Disease Control and Prevention
If CS is 100% preventable, why do we have cases?

- Socioeconomic and geographic differences
- Late initiation or lack of prenatal care
- “Missed opportunities” by health care provider for screening or treatment (i.e. incorrect medical management)
- All US studies to date examined reasons for CS on large scale data (e.g. all birth certificates; multi-year hospital records)
- ISDH study examines each woman’s individual circumstance
Indiana’s CS cases reported to CDC from the STD morbidity database, SWIMSS, 2014-2016.

First, checked to see if health care provider missed screening or treatment.

**Result:** in none of the 23 cases was evidence found that the health care provider did not attempt to test or treat the woman according to established guidelines.

Next, we reviewed all interview records and maternal records submitted by the STD Disease Intervention Specialists (DIS).

The interview record contains medical and social history, risks for syphilis, sex partners, health insurance status, HIV status, demographics.

The maternal record has reproductive history and prenatal care this pregnancy.
The Research Question

- Since we learned that no CS cases in our group could be attributed to health care provider behavior, what factors present in the mother’s life seemed to be associated?
Health vs Non-health related factors associated with Congenital Syphilis

- Lack of prenatal care
- Late initiation of prenatal care
- Lack of health insurance
- Late enrollment in Medicaid
- Cost of copays
- Social isolation
- Lack of control in one’s life
- Unplanned/unwanted pregnancy
- Psychological stresses
- Incarceration

- No transportation
- No child care
- Food insecurity
- Housing insecurity
- Violence
- Poverty
- Low educational levels
- Drug use/substance abuse
- Mental health issues
The 23 CS Cases: Demographic and Disease-related information

- Average age: 26.1 years
- Most had health insurance (91%)

<table>
<thead>
<tr>
<th>Maternal Syphilis Cases</th>
<th># Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syphilis less than 1 year’s duration</td>
<td>14</td>
</tr>
<tr>
<td>Syphilis greater than 1 year duration</td>
<td>11</td>
</tr>
<tr>
<td>Male sex partner also had syphilis</td>
<td>7</td>
</tr>
<tr>
<td>Negative syphilis test in early pregnancy</td>
<td>7</td>
</tr>
<tr>
<td>Mother diagnosed with syphilis twice during pregnancy</td>
<td>2</td>
</tr>
<tr>
<td>HIV-positive mother</td>
<td>1</td>
</tr>
</tbody>
</table>
## Prenatal Care Among Case Mothers

<table>
<thead>
<tr>
<th>Prenatal Care (PNC) Among Case Mothers</th>
<th># Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mothers with no PNC</td>
<td>8</td>
</tr>
<tr>
<td>Mothers with PNC</td>
<td>15</td>
</tr>
<tr>
<td>Healthcare provider followed screening and treatment recommendations</td>
<td>15</td>
</tr>
<tr>
<td>First visit in 1st Trimester</td>
<td>12</td>
</tr>
<tr>
<td>PNC “inadequate”</td>
<td>10</td>
</tr>
</tbody>
</table>

Note: Number of visits ranged 1 - 33, Median= 4 visits

### 3 stillbirths:
- 1 had no Prenatal Care (PNC)
- 2 had inadequate PNC
Themes identified from document review

- Social vulnerability
- Lack of engagement in health care
- Male sex partner risk
Social vulnerability

- Incarceration - (current or within last 2 years) 35% had history of incarceration in the last two years (case mother only, male sex partner only, both case mother and male sex partner).
- Nine percent admitted drug use within the last year.
- One mother had an ED visit due to gunshot wound during pregnancy.
- Chaotic living conditions including homeless - 39% were homeless or had an unstable housing situation.
- Medicaid proxy for low income.
- Most not working or low-wage, no-benefit jobs.
Lack of engagement in health care

- Low number of prenatal care visits previously discussed.
- Evidence of difficulty following through when tests were ordered (at off-site lab from PNC provider office).
- Also difficulty obtaining treatment when syphilis diagnosed after many attempts by doctor and the STD DIS.
- Reason not specified except for:

  One mother stated she was unable to take time off from her minimum-wage, fast food job for lab work and prenatal appointments because she would not be paid.
Male partner risk

• Nearly one-third of the mothers’ ONLY risk for contracting syphilis was her primary (steady/only named) sex partner.
• Seven of these primary male partners were newly identified as syphilis cases as a result of the woman’s diagnosis.
• Two of the steady male partners refused to be tested or receive prophylactic treatment despite health care provider and DIS intervention.
• Two case mothers were re-infected with syphilis during the same pregnancy by their steady male partner, despite intensive DIS intervention.
CS is preventable, but...

- The woman needs to understand the importance of prenatal care and syphilis testing.
- The woman needs to have structural supports in place that enable her to get care such as: health insurance or a payment source, access to a medical provider and the ability to get there (transportation, child care, time off work).
- Requires the medical provider to do their part for timely and adequate testing, correct treatment based on syphilis stage.
- If late diagnosis, treatment may not be able to be given 30 days before delivery (preterm birth common in syphilis patients).

Rahman, et al described three categories for Louisiana’s CS cases based on how likely it is that the health care provider’s actions could have prevented the case
Which CS cases may be prevented by prenatal care (PNC) providers?

A) High potential for prevention by PNC providers
   • Findings of CS case review indicate PNC provider did not screen or treat per recommendations, including no rescreening at 28-32 weeks gestation

B) Possibly preventable by PNC providers
   • Findings of CS case review indicate provider screened or treated per recommendations but woman became infected or failed to return for treatment

C) Unlikely preventable by PNC providers
   • Includes women with inadequate or no PNC
Rahman et al Findings of Louisiana CS cases:

- 33% classified as high potential for prevention by PNC providers
- 27% classified as possibly preventable by PNC providers
- 40% classified as unlikely preventable by PNC providers
Classifying Indiana’s CS cases for possibility of prevention by PNC providers

2014-2018 CS cases (n=30)

- Using the same method as Rahman, et al, adding an additional criterion for classification, we classified our CS cases and found:

  - 10% classified as high potential for prevention by PNC providers;
  - 23% classified as possibly preventable by PNC providers;
  - 63% classified as unlikely preventable by PNC providers; and
  - 3% classified as high potential for prevention by public health.
What can be done to reduce congenital syphilis?

If you are a health care provider...

- Identify males at risk for syphilis who have pregnant partners so they may be tested and treated before transmitting infection to the woman
- Consider using syphilis point-of-care tests to reduce likelihood of a woman not getting testing from an off-site laboratory due to cost, transportation, or scheduling
- Conduct follow up with women dropping out of care with you
Sample Questions to Assess Women's Vulnerability

• What problems will you have getting your future lab work done?
• Many women experience such things as themselves or their boyfriend/husband being in jail; being evicted; alcohol or drug use; not having enough to eat or not being able to pay bills, etc.
  – When your energy goes to these things it’s really hard to stay healthy. What challenges are in your life right now that make it hard for you to take care of yourself and your pregnancy?
Sample Questions (cont.)

• About 30% of Indiana’s mothers who had babies born with syphilis were infected by their boyfriend or husband who they thought was faithful to them and 9% of the women got re-infected with syphilis in the same pregnancy by their boyfriend or husband who was cheating.
  – How confident do you feel that your male partner isn’t having sex with another person in addition to you right now?
  – How can we keep you protected for the duration of your pregnancy?
Conclusion

• Preventing congenital syphilis in the U.S. may require a focus on **both** ameliorating the social vulnerabilities affecting pregnant women with syphilis, and traditional medical management.

• Health care providers are very important partners to public health in addressing congenital syphilis prevention.