Stemming the Rising Tide of Congenital Syphilis in California

Heidi Bauer MD, MS, MPH
In Celebration: Who’s here today

- Local health departments
- State public health dept
- National public health partners
- Community-based orgs
- Training centers
- Healthcare providers
- Disease investigators
- Epidemiologists
- Maternal child health advocates
- Academic partners
- Correctional partners
- Drug treatment
- Industry partners
Overview

- A little bit of history
- Agenda preview
- Congenital syphilis in CA
- Underlying drivers
- Prevention opportunities
Woodcut 1497

Albrecht Durer, 1496
Edvard Munch “The Inheritance” – 1897-99

Congenital Syphilis Discovery Timeline

1750
1800 1900
1850
1942: Penicillin (Fleming; Lentz & Ingraham)
1900
1950: T. pallidum discovered (Shaudinn & Hoffmann)
1863: Late CS (Hutchinson)
1810: Periosteal bone disease (Bertin)
1789: Snuffles (Underwood)
1780: Mercury used in specialized infant hospital in Paris
Congenital Syphilis affects almost every organ system

**Early manifestations:**
- Bone abnormalities
- Enlargement of liver
- Skin rash
- Generalized lymphadenopathy
- Nasal discharge (“snuffles”)
- Blood abnormalities
- Neurologic abnormalities
- Fetal and neonatal death

**Late manifestations:**
- Hearing loss
- Interstitial keratitis
- Vision loss
- Bone and facial abnormalities
- Tooth abnormalities
- Neurologic abnormalities
- Gummas in the skin or mucous membranes

Asymptomatic presentation at birth very common
“The first thing to do completely, is to wipe out congenital syphilis. That is one job that doesn’t need to take a generation.”

8 decades, 3 generations later, we have failed

The number of infants born with **congenital syphilis** increased for the **5th year** in a row.

71 of those infants were stillbirths, with **30 stillbirths in 2017** alone.

- 2012: 33 cases
- 2017: 283 cases*
Yet, we know how to prevent congenital syphilis
CA CS Elimination Summit – **Day 1**

9:30 – 10:15  **The National Congenital Syphilis Crisis**  
Gail Bolan, MD, MPH

10:30 – 11:30 **Congenital Syphilis: Current Management for a Persistent Problem!**  
Pablo J. Sanchez, MD

12:45 – 2:00 **MCAH: A Collaboration to Enhance Congenital Syphilis Response**  
- Diana Ramos, MD MPH  
- Denise Smith, PHN MPA  
- Jennifer Day, PHN  
Facilitator: Ashley Dockter, MPH

2:15-3:30 **Breakout Sessions**

3:45 – 4:55 **Offering Services to, and Engaging in Care, Pregnant Women Who Are Unstably Housed or Homeless**  
Dominika Seidman, MD

Breakout Sessions:

1. **Pregnancy Intention + Contraceptive Counseling**  
   Erica Neuman, MS

2. **Congenital Syphilis M&M Review Boards**  
   Satvinder Dhaliwal, MPH

3. **Syphilis Screening in Jails Panel**  
   - Jena Adams  
   - Susan Strong, NP  
   Facilitator: Jennifer Harmon, MPH

4. **The Harm Reduction Approach to Reducing Risk**  
   Taeko Frost, DrPH
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
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<tbody>
<tr>
<td>8:30 – 9:00</td>
<td>Rapporteur Session with Ashley Dockter, MPH</td>
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<tr>
<td>9:00 – 10:45</td>
<td>Pathways to Congenital Syphilis Elimination in California</td>
<td>Jessica Frasure-Williams, MPH &amp; Ashley Dockter, MPH</td>
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<td>11:00 – 11:45</td>
<td>Bridging Across Groups and STI Transmission Dynamics</td>
<td>Martina Morris, PhD</td>
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<td>1:00 – 1:45</td>
<td>Considerations for Statewide Third Trimester Screening Guidelines</td>
<td>Sarah C. Lewis, MD, MPH</td>
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<td>Susan Philip, MD, MPH</td>
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<td><em>Facilitator: Jessica Frasure-Williams, MPH</em></td>
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<tr>
<td>1:45 – 2:45</td>
<td>Trauma Informed Care - What Is It? And Can It Help?</td>
<td>Allison Briscoe-Smith, PhD</td>
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Congenital Syphilis, California Incidence Rates, 1940–2016
Congenital Syphilis, California versus United States Incidence Rates, 1990–2017

California congenital syphilis cases represented about a third of all CS cases in the U.S. in 2016.

Note: The Modified Kaufman Criteria were used through 1989. The CDC Case Definition (MMWR 1989; 48: 828) was used effective January 1, 1990.
Syphilis in females and infants has been increasing in California since 2012.
The highest morbidity counties are in **Central** and **Southern California**.
Who are the pregnant women with syphilis in California? Majority Hispanic or White and between age 20 and 34.

**Race/Ethnicity**
- Hispanic: 52%
- White: 22%
- Black: 14% → Rate 3x white rate
- Other: 12%

**Age**
- 0-19: 9%
- 20-24: 24%
- 25-29: 29%
- 30-34: 27%
- 35+: 11%

Source: 2016-2017 California surveillance data
What were the health outcomes of babies with CS?

- Stillbirth: 8%
- Signs of CS on exam: 8%
- Long bone abnormalities: 9%
- Reactive CSF VDRL: 8%
- Abnormal CSF: 39%
- Preterm birth: 35%

Source: 2016-2017 surveillance data, N=499
WHY???

- What is causing these increases?
- Why here?
- Why now?
- What has changed?
Early Syphilis, Incidence Rates by Gender California, 1990–2017

![Graph showing Early Syphilis, Incidence Rates by Gender California, 1990–2017]
HIV Treatment and Prevention

HIV HAART widely available 1996

HIV PrEP FDA approved in July 2012
Mobile Hook-up Apps

World wide web 1990 ... Smart phone 2007 ... Grindr launched 2009
Substance Abuse and Addition?
Over half of the women who gave birth to babies with congenital syphilis initiated prenatal care in the third trimester or not at all.

Source: 2016-2017 surveillance data, N=499
Maternal Risk Factors reported by mothers of CS infants

- Delayed/No PNC: 51%
- Meth use: 37%
- Sex while high: 28%
- Incarceration: 20%
- Hx syphilis: 14%
- Other drug use: 12%
- Homeless: 10%
- Sex work: 6%
- IDU: 5%

Source: 2016-2017 surveillance data, N=298
Percent of Early Syphilis* Cases who Reported Methamphetamine Use, by Sexual Orientation, CA 2008–2017

MSM=Men who have sex w/men, MSW=Men who have sex w/women, MSM&W=Men who have sex with men & women

* Includes primary, secondary, and early latent syphilis.
Pregnant and Addicted to Heroin

Rachel Cassandra
Aug 24, 2018
Role of Social Determinants in CS

- Poverty
- Lack of access to care
- Limited transportation
- Housing insecurity
- Sex trafficking
- Domestic violence
- Addiction
- Fear of CPS involvement
Congenital syphilis can be prevented.

Pre-pregnancy
- Screening/dx/tx
- Timely partner services
- Accessible highly effective contraception

During pregnancy
- Linkage to prenatal care
- Screening/dx
- Timely treatment appropriate for stage
- Timely partner services
- Case management
- Prevent and detect new infection

Birth
- Evaluation and treatment of baby
Prevention gaps include late PNC, testing and timely treatment.

- First prenatal visit*:
  - 2015: 84%
  - 2016: 82%
  - 2017: 83%

- Tested:
  - 2015: 81%
  - 2016: 76%
  - 2017: 79%

- Initiated treatment*:
  - 2015: 77%
  - 2016: 71%
  - 2017: 74%

- Treated correctly*:
  - 2015: 73%
  - 2016: 68%
  - 2017: 73%

- CS cases prevented:
  - 2015: 72%
  - 2016: 66%
  - 2017: 69%

* ≥30 days prior to delivery

Source: Nicole Burghardt, 2015-2017 CPA surveillance data
172 missed opportunities for prevention were identified among 69 cases reviewed.

Prenatal:
- 41 missed screening
- 27 missed treatment
- 9 missed diagnosis

Delivery:
- 103 clinical cases reviewed
- 16 missed treatment of mother
- 10 missed treatment of infant

Health department:
- 50 health department cases reviewed
- 28 partners unable to locate
- 11 patients unable to locate
- 11 delays in follow-up

Other:
- 19 other cases reviewed
- 9 lack of jail screening

Source: Ashley Dockter, 2016-June 2018 CPA M&M Review Data
Congenital syphilis prevention outcomes, CPA, 2015-2017

Source: Nicole Burghardt, 2015-2017 CPA surveillance data
Congenital Syphilis

Congenital syphilis is an infection transmitted from mother to child during pregnancy and/or delivery caused by the bacterium Treponema pallidum. Congenital syphilis can cause severe illness in babies, including premature birth, low birth weight, birth defects, blindness, and hearing loss. It can also lead to stillbirth and infant death. Tests and treatment for pregnant women are readily available.

Over the last several years, California has experienced a steep increase in syphilis among women and congenital syphilis (CS). From 2012 to 2017, the annual number of reported early syphilis cases among women of childbearing age increased by over 600%, from 207 to 1,460 cases. This was accompanied by over a 700% increase in the number of reported CS cases, from 33 to 278 cases, and an increase in syphilitic stillbirths, from one in 2012 to 30 in 2017. In 2017, most female early syphilis cases and congenital syphilis cases in California were reported from the Central Valley; however, an increasing number of counties throughout California are reporting their first CS case in years. Most women who gave birth to babies with congenital syphilis received prenatal care late in pregnancy or not at all.

Note: 2017 data are provisional.
Pathways to Congenital Syphilis Elimination in California

**Vision**

Achieve congenital syphilis elimination in California by 2023.

**Purpose**

Provide all stakeholders in congenital syphilis prevention with a specific, measurable goal and action steps to guide their prevention efforts.
### Pathways to Congenital Syphilis Elimination

- **Proposed elimination goal for births in CA:** 5 per 100,000
  - Lowest recorded rate in CA (2012) was 6.6 per 100,000
  - Healthy people 2020 goal is 9.6 per 100,000
  - WHO elimination defined as 50 per 100,000
  - CA CS rate in 2017 was 58.2 per 100,000
- **Where:** Statewide AND in every county with over 8,000 births
- **By When:** 2023

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<thead>
<tr>
<th>Category</th>
<th>Goal</th>
<th>Rate (per 100,000)</th>
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<tr>
<td>CA CSE GOAL</td>
<td>5</td>
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<tr>
<td>Lowest rate recorded</td>
<td>6.6</td>
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<tr>
<td>HP2020 goal</td>
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<tr>
<td>WHO elim</td>
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<tr>
<td>CA 2017 CS rate</td>
<td>58.2</td>
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- Statewide AND in every county with over 8,000 births
Audience: **ALL** stakeholders/partners in congenital syphilis prevention

- Local health jurisdictions
- State government agencies/programs
- Healthcare providers
- Community-based organizations
- Corrections
- Academic and Private Sectors
- Policy makers
- The public
Framework

Disease Investigation

Surveillance/Epi

Health Promotion

Clinical

Policy & Leadership
High Priority Strategies for Congenital Syphilis Elimination

Testing
- Third trimester and delivery screening in pregnancy
- Corrections, drug treatment, emergency departments
- Family planning, primary care screening reproductive age females

Treatment
- On-site bicillin treatment; adequate reimbursement
- Maximize 340B program
- Evaluation and treatment of exposed infants

Case Review
- M&M continuous case review

Public Health
- Active surveillance
- Outbreak response and disease intervention

Access to PNC
- Housing, transportation, social supports
- Substance abuse treatment
Thank you

Denise Gilson
Ashley Dockter
Nicole Burghardt
Kelly Nguyen
Jessica Frasure-Williams
Juli Carlos-Henderson, LA County

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