Syphilis: A Call to Action

Babies born with Syphilis are at a 20-Year High

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Perinatal Advisory Council - September 26, 2019

Disclosures: None
Congenital Syphilis (CS)

- Syphilis in an infant exposed during pregnancy
- Transmitted from mother to child during pregnancy, regardless of the stage of disease
- Can cause severe illness in babies, including premature birth, birth defects, blindness, hearing loss and death
- Preventable with timely diagnosis and treatment
- Is now an urgent priority for California

Prevention of CS is an urgent priority for California
• Inequities in STDs by race and ethnicity persist in the US
• Not explained by individual or population-level behavioral differences but from systemic, societal, and cultural barriers to diagnoses, treatment and routinely accessible preventive services
• Although some progress has been made, individual, group, and structural-level health care interventions are essential
• Continued monitoring of differences across groups is critical as is the inclusion of consistent ascertainment of race and ethnicity

STDs in Racial Ethnic Minorities: https://www.cdc.gov/std/stats17/minorities.htm
Objectives

• Highlight current alarming trends in Congenital Syphilis in the United States, California and Los Angeles County
• Reinforce the syphilis screening guidelines in pregnancy
• Review clinical presentation, diagnosis and staging of syphilis
• Increase knowledge regarding testing, treatment and follow up
• Understand the role of the Public Health Department:
  – Clinical consultation, reporting, partner elicitation, elimination goals and strategies
A Devastating Surge in Congenital Syphilis: How Can We Stop It?
Laura H. Bachmann, MD, MPH, Chief Medical Officer
Division of Sexually Transmitted Disease Prevention, Centers for Disease Control and Prevention
STDs are at a record high in the United States

The STATE of STDs in the United States

in 2017

STDs tighten their grip on the nation’s health as rates increase for a third year

1.69 million cases of Chlamydia
5% increase since 2016

548,678 cases of Gonorrhea
17% increase since 2016

98,437 cases of Syphilis
12% increase since 2016

more than 900 Congenital Syphilis Cases in 2017

44% ↑

*Data are preliminary as of April 12, 2018; congenital syphilis data are preliminary as of July 10, 2018
Primary and Secondary Syphilis: Reported Cases, U.S., 1941–2017*

Primary and Secondary Syphilis Cases have increased 390% since 2001

Cases

Year


Year

CDC estimates more than 55,000 people are infected each year

*Males  Females  Total

*Data for 2017 are preliminary as of April 12, 2018
Congenital Syphilis (CS) Cases and Primary and Secondary (P&S) Syphilis Cases Among Females of Reproductive Age, U.S., 2007–2017*

*Data for 2017 are preliminary as of 06/30/2018.
Thirty-seven U.S. states reported at least 1 congenital syphilis case in 2017.

In 2017, 5 states represented 70% of all congenital syphilis cases in the U.S.

<table>
<thead>
<tr>
<th>State</th>
<th>2012 Cases</th>
<th>2017* Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA</td>
<td>35</td>
<td>281</td>
</tr>
<tr>
<td>TX</td>
<td>78</td>
<td>176</td>
</tr>
<tr>
<td>FL</td>
<td>37</td>
<td>93</td>
</tr>
<tr>
<td>LA</td>
<td>33</td>
<td>59</td>
</tr>
<tr>
<td>GA</td>
<td>16</td>
<td>23</td>
</tr>
<tr>
<td>MD</td>
<td>12</td>
<td>20</td>
</tr>
<tr>
<td>AZ</td>
<td>14</td>
<td>30</td>
</tr>
<tr>
<td>IL</td>
<td>23</td>
<td>21</td>
</tr>
<tr>
<td>OH</td>
<td>19</td>
<td>18</td>
</tr>
<tr>
<td><strong>U.S. Total</strong></td>
<td><strong>334</strong></td>
<td><strong>918</strong></td>
</tr>
</tbody>
</table>

*Congenital syphilis data are preliminary as of July 2018
Early Syphilis*, Cases by Gender; California, 1996–2017

* Includes primary, secondary, and early latent syphilis.
Syphilis in females and infants has been increasing in California since 2012

Data Source: CA Department of Public Health, STD Surveillance, 2017
The rate of congenital syphilis is increasing at a greater pace in California.

California congenital syphilis cases represented about 30% of all CS cases in the U.S. in 2017.

Data Source: CA Department of Public Health, STD Surveillance, 2017
The highest congenital syphilis morbidity counties in California are in Central and Southern regions of the state.

In 2017, 9 (out of 58) counties in California reported ≥10 congenital syphilis cases.

Data Source: CA Department of Public Health, STD Surveillance, 2017
LA County has been designated as a High Morbidity Area
Number of Female Syphilis Cases and Congenital Syphilis Cases, Los Angeles County, 2006-2019

Data are from STD Casewatch as of 06/16/2019 and excludes cases from Long Beach and Pasadena.

2013-2019

>400% ↑ syphilis in women

>1000% ↑ congenital syphilis

Cases of Syphilis among Females (n)


Pregnant Women

Total Women

Congenital Syphilis

Projection

Source: Division of HIV and STD Programs

1 Data are from STD Casewatch as of 06/16/2019 and excludes cases from Long Beach and Pasadena.

2 2018-2019 data are provisional due to reporting delay. 2019 projections are based on provisional data. As of 06/30/19, 40 congenital syphilis cases have been reported.

3 Syphilis among females of reproductive age (ages 15-44) including all cases staged as primary, secondary, early latent and late latent

4 Congenital Syphilis includes syphilitic stillbirths
Characteristics of Women Giving Birth to Babies with Congenital Syphilis, LAC 2018 (n=54) Median Age: 29.2 years (range 16-38)

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latina</td>
<td>62%</td>
</tr>
<tr>
<td>African American</td>
<td>32%</td>
</tr>
</tbody>
</table>

Most Women who Give Birth to Babies with Congenital Syphilis Don’t Receive Prenatal Care or are Poorly Engaged with Care

<table>
<thead>
<tr>
<th>Substance Use</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methamphetamine</td>
<td>81%</td>
</tr>
<tr>
<td>Cocaine</td>
<td>6%</td>
</tr>
<tr>
<td>Heroin/opiates</td>
<td>7 %+</td>
</tr>
<tr>
<td>Ecstasy</td>
<td>3 %</td>
</tr>
<tr>
<td>Incarceration</td>
<td>26%</td>
</tr>
<tr>
<td>Major mental illness</td>
<td>20%</td>
</tr>
</tbody>
</table>

* Excludes persons for whom data were missing. Marijuana not included as substance use. + All heroin users also used meth
Syphilis in Women of Reproductive Age in LAC by Race/Ethnicity

Figure 1. Rate of Syphilis among Women Ages 15-44 by Race/Ethnicity, LAC, 2012 (n=160) and 2017 (N=640)¹

Total syphilis includes all cases staged as primary, secondary, early latent, late latent and late; data for Native Hawaiians, Pacific Islanders, Native Americans, Alaska Natives, Multiple Race and Other Race are suppressed due to small numbers; 2017 data are provisional due to reporting delay and exclude cases in Long Beach and Pasadena.

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Number of Cases (%)</th>
<th>Number of Cases (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2012</td>
<td>2017</td>
</tr>
<tr>
<td>Latina</td>
<td>86 (50)</td>
<td>485 (52)</td>
</tr>
<tr>
<td>Black/African American</td>
<td>42 (24)</td>
<td>201 (22)</td>
</tr>
<tr>
<td>White</td>
<td>14 (8)</td>
<td>111 (12)</td>
</tr>
<tr>
<td>Asian</td>
<td>18 (10)</td>
<td>44 (5)</td>
</tr>
<tr>
<td>Other/Missing/Unknown</td>
<td>13 (8)</td>
<td>83 (9)</td>
</tr>
<tr>
<td>Total</td>
<td>173</td>
<td>924</td>
</tr>
</tbody>
</table>

¹Total syphilis includes all cases staged as primary, secondary, early latent, late latent and late; data for Native Hawaiians, Pacific Islanders, Native Americans, Alaska Natives, Multiple Race and Other Race are suppressed due to small numbers; 2017 data are provisional due to reporting delay and exclude cases in Long Beach and Pasadena.
% Methamphetamine Use among P&S Syphilis Cases by MSM, MSMW and Women, Los Angeles County, 2010-2017


2. 2016-2017 data are provisional due to reporting delay.

Source: Division of HIV and STD Programs
Women Considered High Risk for Syphilis, LA County

- Latina and African American women
- From certain geographic regions (San Gabriel, Metro & South LA)
- Partner may have other partner(s)
- Access pre-natal care late, not at all, missed visits
- Exchange sex for money/shelter/other things of value
- Drug abuse
- Homelessness
- Serious mental illness

LA County has been designated as a High Morbidity Area
Screening Recommendations – Los Angeles County DPH

• Screen all pregnant women during their first trimester or initial prenatal visit

• Universal re-screening for all pregnant woman early in the third trimester (28-32 weeks) and at delivery

• Screen all women of reproductive age 15-44 years at least once and then more often based on risk

• http://publichealth.lacounty.gov/dhsp/Providers/LAC_STDScreeningRecs_2018.pdf

LA County has been designated as a High Morbidity Area
• Natural history & clinical presentation
• Diagnosis and staging
• Treatment and follow up
• LA County Congenital Syphilis elimination goals and strategies
• Resources
Syphilis Natural History

**Exposure**
- 30-50%

**Primary**
- ~25%
- Incubation Period: 3-90 days (3-4 weeks)
- Duration: 2-6 weeks

**Secondary**
- Duration: 2-6 weeks
- 25%
- Possible relapse
- After 3-8 weeks lesions disappear spontaneously

**Latent**
- Duration: 2-20 years
- 30%
- ASYMPOTOMATIC

**Tertiary**
- Duration: 2-20 years
- CV and gummatous

Early Syphilis < 1 Year

Late Syphilis > 1 Year

Neurosyphilis, Ocular and Otic Syphilis can occur at any stage
Diagnosis made by clinical symptoms and signs and CSF analysis
Primary Syphilis

Chancre

Most Infectious – Chancre full of bacteria
Person contagious through contact (~30%)
Secondary Syphilis

• Usually occurs (3-90 days) 3-6 weeks after primary chancre
  – Rash (75-90%), involving palms/soles (60%)
  – Generalized lymphadenopathy (70-90%)
  – Constitutional symptoms (50-80%)
  – Mucous patches (5-30%)
  – Condyloma lata (5-25%)
  – Patchy alopecia (10-15%)
  – Symptoms of neurosyphilis (1-2%)
  – Less common: meningitis, hepatitis, arthritis, nephritis
Secondary Syphilis Manifestations

Person contagious through contact (~30%)
Perinatal transmission possible (90-100%)

Courtesy: Gregory Melcher, UC Davis
Susan Philip, SF DPH & UCSF
Syphilis in Pregnancy and Congenital Syphilis

Alarming and Disturbing Rise of Congenital Syphilis in Los Angeles County

- **733%** Increase of CS Cases in 2017 compared to numbers reported in 2012
- **600%** Increase of early syphilis among females of reproductive age 2017 compared to 2012
• Asymptomatic presentations are common (CDC, 2017)
  – ~2/3 infants born with CS are asymptomatic at birth
  – if untreated will develop symptoms
• In first weeks of life, effects can resemble secondary syphilis including blisters, scaly rash, mucous patches and condyloma lata (highly infectious)
• Deformed and inflamed bones
Late Congenital Syphilis > 2 years of age

• Hearing loss (puberty to adulthood)
• Interstitial keratitis, vision loss (5 years to adulthood)
• Bone or tooth abnormalities (Hutchinson’s teeth, Sabor shins, Clutton’s joints)
• Neurologic abnormalities (puberty on)
• Gummas in the skin or mucous membranes

Photos courtesy of Public Health Image Library, CDC/Susan Lindsley, Robert Sumpter, CDC/J. Pledger
Diagnosing and Staging Syphilis

- Sexual Risk
- Medical history
- Symptoms & Signs
- Serology
Serological Tests for Syphilis

- **Nontreponemal tests** (non-specific and can be false positive (BFP) or false negative-prozone phenomenon)
  - Rapid plasma reagin (RPR) test (> 4 fold rise from baseline indicates a possible new infection)
  - Venereal Disease Research Laboratory (VDRL) test
  - Toluidine red unheated serum test (TRUST)

- **Treponemal tests** (test for IgM and IgG Ab's against *T. pallidum* and remain positive for life; not used for tx response)
  - Fluorescent treponemal antibody absorbed (FTA-ABS) test
  - Treponema pallidum particle agglutination (TP-PA) test
  - Enzyme immunoassays (EIAs)-lateral flow tests
    - Trep-Check
    - Trep-Sure
  - Chemiluminescence immunoassays (CIAs)
    - LIAISON
    - Architect
  - Microbead immunoassays (MBIA)
    - BioPlex 2200 Syphilis IgM and IgG

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Traditional Syphilis Serologic Screening Algorithm

Quantitative RPR
(Titer)
(non-treponemal test)

RPR+ (Reactive)

RPR - (Non-Reactive)
(no lab evidence of syphilis infection)

TP-PA
(or other treponemal test)

TP-PA+ (Reactive)
Syphilis
(New or Old Infection)

TP-PA - (Non-Reactive)
Syphilis Unlikely
(Possible Reasons: Biological False + (BFP))
Reverse Sequence Syphilis Serologic Screening Algorithm

- **EIA/ CIA** (treponemal test)
  - **EIA/CIA + (Reactive)**
    - **Quantitative RPR (Titer)** (non-treponemal test)
      - **RPR + (Reactive Titer)**
        - **Syphilis** *(New or Old Infection)*
      - **RPR - (Non-Reactive)**
        - **TP-PA** (treponemal test)
          - **TP-PA + (Reactive)**
            - **Syphilis** *(New or Old Infection)*
          - **TP-PA - (Non-Reactive)**
            - **Syphilis unlikely** *(Possible Reasons: False + 1st Trep/False - 2nd Trep)*
  - **EIA/CIA - (Non-Reactive)** *(no lab evidence of syphilis infection)*

1. This algorithm is a simplified representation of the screening process for syphilis. It may not cover all clinical scenarios and should be used in conjunction with a healthcare provider.
Syphilis Staging Flowchart

**SIGNS OR SYMPTOMS?**

- **YES**
  - Chancre
  - Rash, condyloma, etc.
  - PRIMARY
  - SECONDARY

- **NO**
  - LATENT
    - ANY IN PAST YEAR?
      - Negative syphilis serology
      - Known contact to an early case of syphilis
      - 4-fold increase in titers

- **YES to any**
  - EARLY LATENT (< 1 year)

- **NO to all**
  - LATE LATENT (> 1 year)

**Neurosyphilis, Otic and Ocular syphilis can occur at any stage.**

**All patients with syphilis should be tested for HIV.**
Syphilis Staging → Treatment

CDC 2015 STD Treatment Guidelines
www.cdc.gov/std/treatment

NEUROSYPHILIS (Either Early or Late/Unknown)

Aqueous Crystalline Penicillin G 18-24 million units IV daily administered as 3-4 million IV q 4 hr for 10 -14 d

* BIC IM may be added for late/unknown duration to achieve 3-week course

PRIMARY

SECONDARY

EARLY LATENT (< 1 year)

Benzathine penicillin G 2.4 million units IM in a single dose

* Only one dose of BIC is recommended for early syphilis in HIV-infected persons, extra doses not needed

LATE LATENT or UNKNOWN DURATION (>1 year)

Benzathine Penicillin G 7.2 million units total, given as 3 doses of 2.4 million units each at 1-week intervals

* Max interval = 14 days; 7 days if pregnant

*Always order an RPR on the day of treatment!
Treatment of Syphilis in Pregnancy

- The only treatment for syphilis in pregnancy is penicillin. There are no available alternatives.
- Pregnant women should be treated with the penicillin regimen appropriate for their stage of infection.
- Pregnant women with penicillin allergy should be desensitized.
  - Desensitization occurs in a hospital setting because of the risk for serious IgE–mediated hypersensitivity reactions (CDC, 2015).
Syphilis Treatment Alternatives for Penicillin Allergic Non-Pregnant Adults

Primary, Secondary, and Early Latent Syphilis

- Doxycycline 100 mg po twice a day x 14 days
- Tetracycline 500 mg po twice a day x 14 days
- Ceftriaxone 1 gm IV (or IM) daily x 10-14 days

Late Latent Syphilis

- Doxycycline 100 mg po twice a day x 28 days
- Tetracycline 500 mg po twice a day x 28 days

(Los Angeles County STD Treatment Guidelines for Adults & Adolescents, 2017)
Main Clinical Take Home Points

- Know the rising trends in syphilis in MSM, MSW and women
- Recognize disturbing rising trends in CS in LAC which is entirely preventable
- Recognize symptoms and signs
  - Evaluate for neuro/ocular/otic symptoms/signs
  - Consider empiric treatment if high suspicion
- Assess risk and take a thorough sexual history
- Screen all women of reproductive age (15 – 44 years) for syphilis at least once
- Screen all pregnant women for syphilis during the first trimester or at their initial prenatal visit. Re-screen pregnant women for syphilis early in the third trimester (28 – 32 weeks) and at delivery.
- Determine stage of disease to guide treatment
  - Get day-of-treatment titer
  - Follow titers to assess treatment
Role of the Public Health Department

• Clinical Consultations
• Reporting
• Partner Elicitation
• Elimination Goals & Strategies
Clinical Guidance and Nursing Unit Line

Got questions about STDs?

(213) 368-7441

The Los Angeles County Department of Public Health is here to help you.

Call the Clinical Nursing and Guidance Unit for:

- Clinical Consultations
- Assistance with mandatory case reporting
- Countywide record searches: syphilis test results and treatment

Mon-Fri 8am-5pm. Messages returned by the next business day. 213-368-7441
publichealth.lacounty.gov/dhsp/InfoForProviders.htm
Syphilis Reporting

• Syphilis is a reportable illness—must be reported in 1 day


http://publichealth.lacounty.gov/dhsp/ReportCase.htm
Partner Elicitation -- Why Contact Partners?

1. Stop or mitigate consequences of disease in exposed partners
   - Prevent infection through preventive treatment
   - Provide early treatment to prevent complications

2. Stop spread of disease in community
   - Reduce number of people infected by breaking the chain of infection

3. Ethical reasons ("Wouldn’t you want to know?")
   - Option for partners to choose/ take appropriate action
   - Collective responsibility of community
### LA County Congenital Syphilis Elimination Goals and Strategies

| All syphilis cases identified and investigated in timely manner to disrupt disease transmission. | • High quality surveillance to identify cases and monitor trends  
• Effective syphilis partner services activities for women and men |
| --- | --- |
| All pregnant women and women of reproductive age screened and treated for syphilis. | • Community medical providers to screen and treat  
• Accessible, welcoming clinical services for women with co-morbidities |
| All persons at highest risk of syphilis aware of risk and offered education and testing. | • Awareness of rising rates of syphilis among women and community  
• Syphilis education, testing, and referrals in non-clinical settings |
Goal 1: All syphilis cases identified and investigated in timely manner to disrupt disease transmission.

- High quality surveillance activities to identify cases and monitor trends
- Effective syphilis partner services activities for women and men
Goal 2: All pregnant women and women of reproductive age will be appropriately screened and treated for syphilis in LAC.

- Mobilize community medical providers servicing this population to screen and treat
  - Disseminate syphilis screening recommendations through public health detailing and technical assistance
  - Increase collaboration with key medical provider groups (OB, birthing hospitals, Title X, PCPs, ED providers)

http://publichealth.lacounty.gov/dhsp/SyphilisInWomen-ActionKit.htm
Taking a sexual history, syphilis screening, staging and treatment

http://publichealth.lacounty.gov/dhsp/SyphilisInWomen-ActionKit.htm
Goal 2: All pregnant women and women of reproductive age will be appropriately screened and treated for syphilis in LAC.

- Ensure accessible and welcoming clinical services for women with co-morbidities
  - Explore new models of care for clinical services
    - Possibly new perinatal case management services
    - Consider roving OB team model
    - Express STD clinics to increase # patients seen and treated for syphilis
Goal 3: All persons at highest risk of syphilis will be aware of the risk and be offered education and testing in non-clinical settings.

- Increase awareness of rising rates of syphilis to women and their community
  - Increase dissemination of STD information and resources
    - Social marketing, reports, website, outreach
    - Community coalitions, established partnerships
Goal 3: All persons at highest risk of syphilis will be aware of the risk and be offered education and testing in non-clinical settings.

- Increase syphilis testing in non-clinical settings and field (new organizational partners and targeted field response)
  - Mobilize new organizational partners to support education, testing, and referrals
    - Correctional partners – Rapid syphilis testing
    - Substance use providers and syringe exchange programs
Goal 3: All persons at highest risk of syphilis will be aware of the risk and be offered education and testing in non-clinical settings.

- Develop public health field outreach capacity targeted to persons experiencing homelessness
  - Partner with existing homeless medical services and street medicine initiatives
    - Importance of provider with prescribing authority
  - Public Health outreach
    - Full complement of interventions and services
      - Syringe, wound care, vaccines, testing
Considerations for Elevating CS Response in CA

- **Declaration of CS outbreak**
  - Brings media attention, increased leverage for local HO to issue required screenings

- **State and Local Health Officer’s Order**
  - Brings media attention, could require jails to conduct screening of all women of reproductive age

- **Medi-Cal Policy Letter**
  - Provide appropriate reimbursement for 3rd trimester and delivery screening

- **Licensing and Certification Policy Letter**
  - Clarification of existing regulations
    - Ex: syphilis screening be provided in all SUD programs; hospitals/ED re: SB 1152

- **Emergency Regulation**
  - Allows Disease Investigation Specialists to conduct CLIA-waived tests for reportable diseases
  - Expansion of provision of “incidental medical services” to licensed residential facilities to include screening for diseases

Adapted from California STD/HIV Controllers Association Internal Document. Not for circulation.
• DHSP website: [http://publichealth.lacounty.gov/dhsp](http://publichealth.lacounty.gov/dhsp)
• Syphilis in Women and Congenital Syphilis: An Update for Healthcare Providers
• Syphilis in Women: [http://publichealth.lacounty.gov/dhsp/SyphilisInWomen-ActionKit.htm](http://publichealth.lacounty.gov/dhsp/SyphilisInWomen-ActionKit.htm)
• PrEP information: [www.getPrEPLA.com](http://www.getPrEPLA.com)
• Condom Information: [www.lacondom.com](http://www.lacondom.com)
• Public Health Centers: [http://publichealth.lacounty.gov/chs/phcenters.htm](http://publichealth.lacounty.gov/chs/phcenters.htm)
• Pocket Guide to youth-friendly Sexual Health Services: [https://www.pocketguidela.org/](https://www.pocketguidela.org/)
• DPH Health Professionals Web Portal: [http://publichealth.lacounty.gov/profess.htm](http://publichealth.lacounty.gov/profess.htm)
Thank you for your attention

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DHSP general contact phone number: 213-351-8000