NPQIC Summit Meeting: The Re-Emergence of Syphilis: New Screening Recommendations and Maternal / Neonatal Case Reviews

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Learning Objectives & Goals

1. Identify syphilis as a re-emerging health epidemic.

2. Define proper screening recommendations for pregnant people and neonates in your community.

3. Implement proper screening for pregnant people and neonates in your community (we'll show you how we did it!).

4. Recognize congenital syphilis in the neonate and when to seek Infectious Disease consultation.

Disclosures

The following have no relevant financial relationships to disclose:

- Jennifer Berger, MD
- David Greiner, MD

LEARNING OUTCOME

Identify syphilis as a re-emerging health epidemic.

University of Nebraska Medical Center

Children's Nebraska

Syphilis is Back...With a Vengeance!

Daily Briefing

Syphilis rates have hit their highest since 1950. Why?

Posted on February 01, 2024

Updated on February 01, 2024

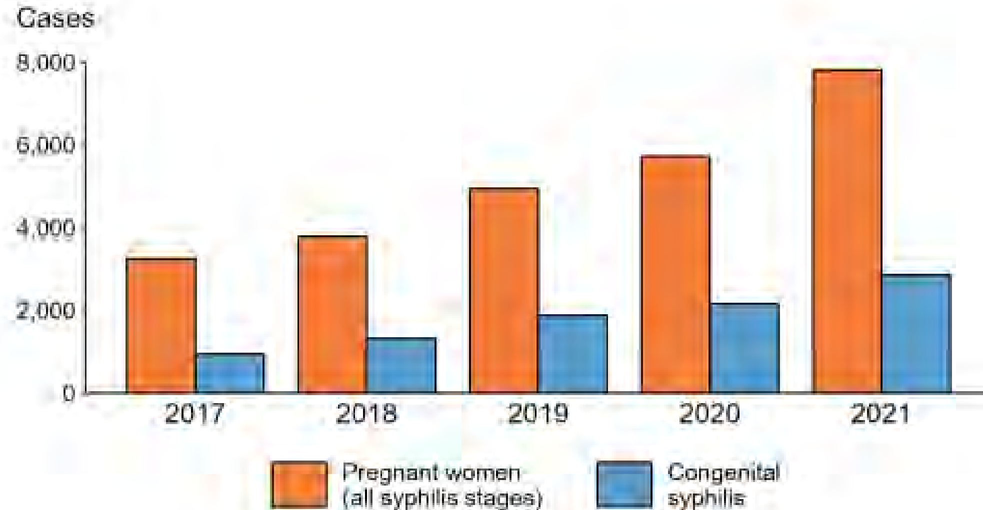
According to a CDC report for 2022:

- 207,255 syphilis cases in US
- 17% increase in 1 year, 80% increase in 5 years
- 3,761 infants born with syphilis

(CDC National Notifiable Disease Surveillance System)

Syphilis rates have hit their highest since 1950. Why? (n.d.). Retrieved March 25, 2024, from https://www.advisory.com/daily-briefing/2024/02/01/syphilis

National Syphilis Rates in Pregnant People and Neonates



- **10x as many babies born with syphilis in 2022 than a decade prior**
- **Rates at highest level in 30 years**
- **231 related stillbirths**
- **51 infant deaths**

Jenco, M., & Editor, N. C. (2023). *Ten times as many babies born with syphilis in 2022 compared to 2012.* https://publications.aap.org/aapnews/news/27259/Ten-times-as-many-babies-born-with-syphilis-in

Syphilis is Curative and Preventable!

AAP News

Ten times as many babies born with syphilis in 2022 compared to 2012

November 7, 2023

Melissa Jenco, News Content Editor

88% of cases could have been prevented with timely testing and treatment

- 37% untimely or no testing
- 11% no documented treatment
- 40% inadequate treatment

Jenco, M., & Editor, N. C. (2023). *Ten times as many babies born with syphilis in 2022 compared to 2012.* https://publications.aap.org/aapnews/news/27259/Ten-times-as-many-babies-born-with-syphilis-in

Congenital syphilis cases are highest in...

Syphilis rates have hit their highest since 1950. Why? (n.d.). Retrieved March 25, 2024, from https://www.advisory.com/daily-briefing/2024/02/01/syphilis

Why is syphilis re-emerging?

Daily Briefing

Syphilis rates have hit their highest since 1950. Why?

Posted on February 01, 2024

Updated on February 01, 2024

- We aren't looking for it
- Lack of resources
- Barriers to Care
- Lack of prenatal care

- Lack of funding
- Cases multiplying
- Substance Use Disorder
- Healthcare Disparities

AAP News

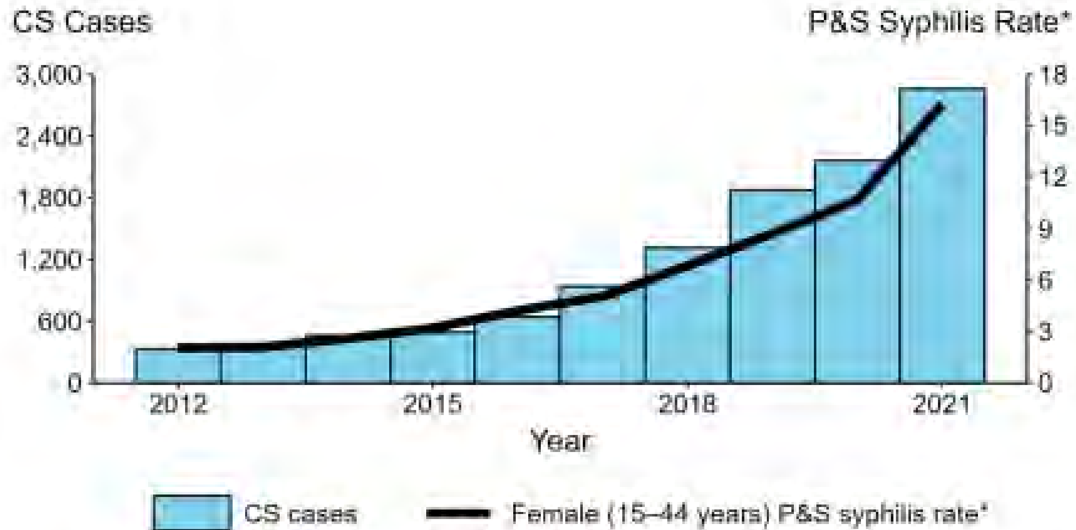
Ten times as many babies born with syphilis in 2022 compared to 2012

November 7, 2023

Melissa Jenco, News Content Editor

Syphilis rates have hit their highest since 1950. Why? (n.d.). Retrieved March 25, 2024, from https://www.advisory.com/daily-briefing/2024/02/01/syphilis

Congenital Syphilis is a Re-Emerging Health Epidemic



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- **88% of cases could have been prevented w/ timely testing and treatment**
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LEARNING OUTCOME

Define proper screening recommendations for pregnant people and neonates in your community.

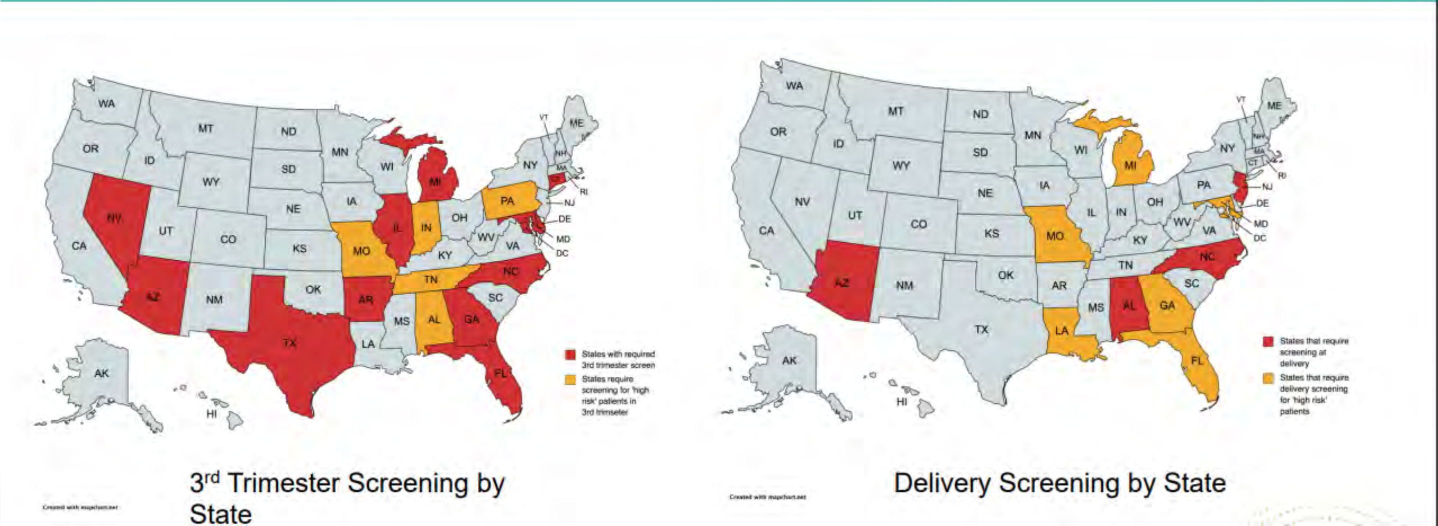
University of Nebraska Medical Center

Children's NEBRASKA

Previous ACOG Recommendations

- Universal screening at the first prenatal visit
- Pregnant women at **high risk** of syphilis **may** be retested in the 3rd trimester and at delivery.
- Some states **require** re-testing at delivery even for women who are not at high risk for infection

Mandatory Screening By State



3rd Trimester Screening by State

Delivery Screening by State

Screening at First Visit

- For many patients this may be in the ED
- Encouraged screening as early as possible to help detect and treat cases

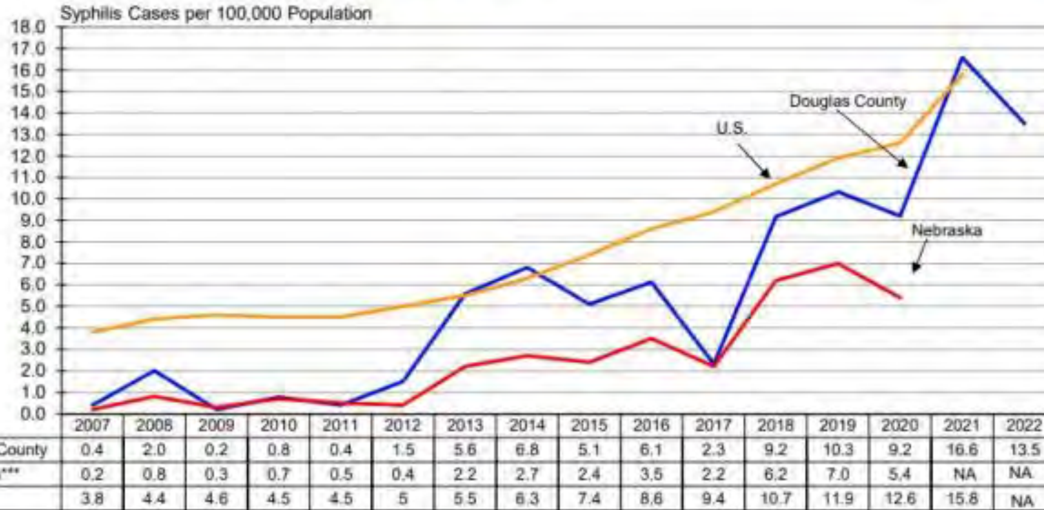
How do you define "High Risk"

Community Risk Factors

- No previously set cutoff
- Reasonable to use the CDC "Healthy People 2030" goal
- **4.6/100,000** reproductive age females

Syphilis* Rates**

Douglas County, Nebraska, and US
2007-2022



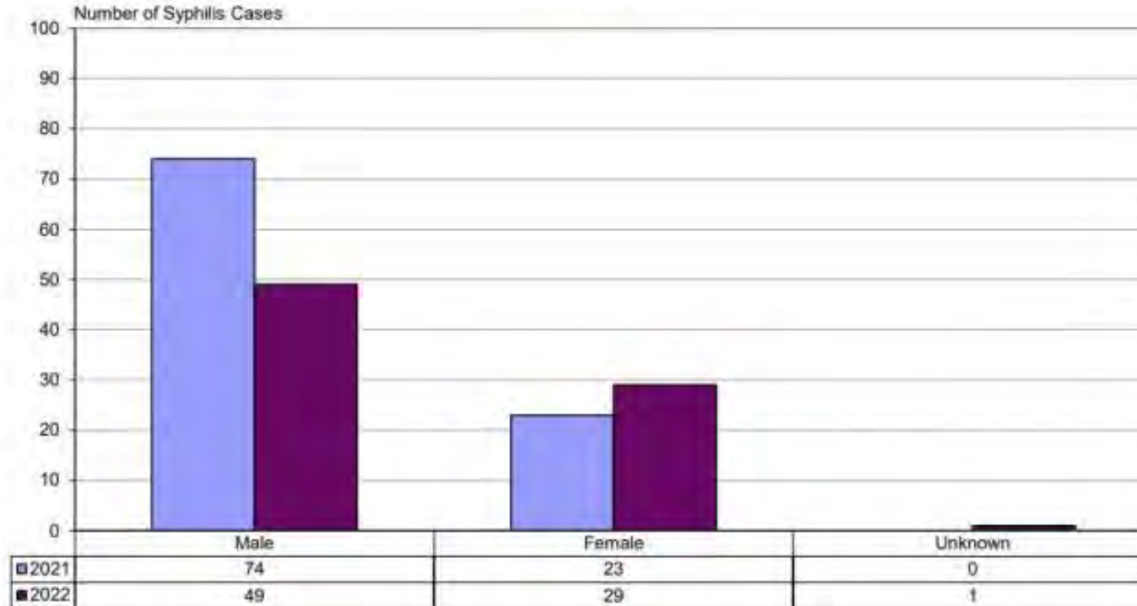
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Douglas County	0.4	2.0	0.2	0.8	0.4	1.5	5.6	6.8	5.1	6.1	2.3	9.2	10.3	9.2	16.6	13.5
Nebraska***	0.2	0.8	0.3	0.7	0.5	0.4	2.2	2.7	2.4	3.5	2.2	6.2	7.0	5.4	NA	NA
US***	3.8	4.4	4.6	4.5	4.5	5	5.5	6.3	7.4	8.6	9.4	10.7	11.9	12.6	15.8	NA

* Primary and Secondary Syphilis.
** Populations used for rate calculations are Projection Estimates for Douglas County from Woods & Poole Economics except for 2010 which uses the US Decennial Census, and 2011-2020 which use the US Census Bureau's Intercensal Population Estimates Program. 2022 rates are provisional because they use the 2021 population estimates. 2022 estimates are not yet available.
*** Source: CDC Sexually Transmitted Disease Surveillance
NA - Data is not yet available.
Source: DCHD Sexually Transmitted Disease Surveillance
Based on Date of Report

Douglas County Health Dpartment
04/12/2023

Health Department

Number of Syphilis* Cases by Gender
Douglas County, NE
2021-2022



	Male	Female	Unknown
2021	74	23	0
2022	49	29	1

* Primary and Secondary Syphilis
Source: DCHD Sexually Transmitted Disease Surveillance
Based on Date of Report

Douglas County Health Department
04/12/2023

cdc sti atlas

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Centers for Disease Control and Prevention (.gov)
https://www.cdc.gov › nchhstp › atlas

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NCHHSTP AtlasPlus gives you the power to access data reported to **CDC's** National Center for **HIV**, Viral Hepatitis, **STD**, and TB Prevention (NCHHSTP).

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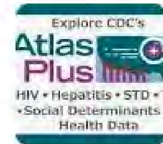


Early Non-Primary, Non-Secondary Syphilis | Primary and Secondary Syphilis | Unknown Duration or Late Syphilis | 2022 | Douglas County, NE | All races/ethnicities | Female | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44

1. Indicator
2. Geography
3. Year
4. Demographics

Start over | Previous | Create my table

Hispanic/Latino, then you must also select those two race/ethnicity groups. Not all data are available at all stratification levels. If a stratification is not available, the option will be greyed out.

Age Group

- All age groups
- **Select specific age groups**
  - [ ] 0-14
  - [x] 15-19
  - [x] 20-24
  - [x] 25-29
  - [x] 30-34
  - [x] 35-39
  - [x] 40-44
  - [ ] 45-54
  - [ ] 55-64
  - [ ] 65+
  - [ ] Unknown

Race/Ethnicity

- All races/ethnicities
- Select specific races/ethnicities
  - American Indian/Alaska Native
  - Asian
  - Black/African American
  - Hispanic/Latino
  - Multiracial
  - Native Hawaiian/Other Pacific Islander
  - Unknown
  - White

Sex

- Both sexes
- Select specific sexes
  - [ ] Male
  - [x] Female

Start over | Previous | Create my table

Current selections

Indicator (3 selected)

Primary and Secondary Syphilis * ‡
Early Non-Primary, Non-Secondary Syphilis * ‡
Unknown Duration or Late Syphilis * ‡

Geography (1 selected)

Douglas County, NE

Year (1 selected)

2022

Age Group (6 selected)

15-19
20-24
25-29
30-34
35-39
40-44

Race/Ethnicity (1 selected)

Indicator	Year	Geography	Cases	Rates per 100,000
Unknown or Late	2022	Douglas County, NE	55	44.9
Early, Non-primary Non-Secondary	2022	Douglas County, NE	9	7.3
Primary and Secondary	2022	Douglas County, NE	27	22.0

What about UNMC?

- Does not represent the entire community
- May be falsely elevated as these are patients seeking care

UNMC Rates

- Total reproductive age females (Age 15-45) at UNMC in 2023: 85,801
- Positive Syphilis (Syphilis antibody and RPR): 132
- 132/85,801 = 0.001538 or 0.15%
- **153/100,000 Reproductive Age Females**

UNMC Pregnancy Rates

- Total pregnancies screened in 2023 = 3,713
- Positive syphilis = 26
- 26/3713 = 0.007002 or 0.7%
- **700/100,000 Pregnant patients**

April 2024 ACOG Recommendations

- Universal screening at first prenatal visit, third trimester, and at delivery
- 2 out of 5 infants with congenital syphilis had no access to prenatal care
- It's impossible to talk about syphilis without recognizing bias

Rates of Reported Congenital Syphilis Cases by Race/Hispanic Ethnicity of the Mother, United States, 2022

Race or Ethnicity	Rates of Reported Congenital Syphilis Cases, 2022 (per 100,000 live births)
American Indian or Alaska Native	644.7
Asian	10.4
Black or African American	214.5
Hispanic or Latino	124.1
Multiracial	79.0
Native Hawaiian or Pacific Islander	404.4
White	54.1

% Live Births
% CS Cases
White (52.2%)
Hispanic/Latino (24.2%)
Black/AA (14.3%)
Asian (6.0%)
Multiracial (2.4%)
AI/AN (0.7%)
NH/PI (0.3%)
Black/AA (31.0%)
Hispanic/Latino (29.8%)
White (27.4%)
AI/AN (3.6%)
Multiracial (1.7%)
NH/PI (0.7%)
Asian (0.6%)
Other/unknown (5.2%)

LEARNING OUTCOME

Implement proper screening for pregnant people and neonates in your community.

This is how we did it.

QI Project

- EPIC Changes live May 13
- Collect data on compliance w/ screening between June 1, 2024 – August 30, 2024

Results Console

1st Trimester

Order All

Test	
Blood Type/ Rh	+ Order
Antibody Screen	+ Order
HCT	+ Order
HGB	+ Order
Platelet count	+ Order
Rubella	+ Order
Varicella	+ Order
Syphilis	+ Order
HBsAg (NMC result)	+ Order
HBsAg (outside result)	+ Order
Hep C	+ Order
HIV	+ Order
Glucose tolerance 1 hr	+ Order
HGBA1C	+ Order
TSH	+ Order
Urine Culture	+ Order

2nd Trimester

Order All

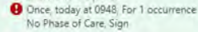
Test	
HCT	+ Order
HGB	+ Order
Glucose Tolerance 1 hr	+ Order
HGBA1C	+ Order
Quad Screen	+ Order
Alpha Fetoprotein	+ Order
Syphilis	+ Order

3rd Trimester

Order All

Test	
Antenatal Rhogam	+ Order
HCT	+ Order
HGB	+ Order
Glucose Tolerance 1 hr	+ Order
HGBA1C	+ Order
GBS	+ Order
Syphilis	+ Order

Order Sets



- Labs / Imaging
  - Lab
    - ☑ OB Lab Panel - If prenatal lab unavailable.
      - ☑ Type and screen OB profile ($40)
        Indication: OB profile
        Once, today at 0948, For 1 occurrence
        No Phase of Care, Sign
      - ☑ CBC with differential, platelet
        Once, today at 0948, For 1 occurrence
        Pt. Portal result release timeframe: Auto Release Standard
        No Phase of Care, Sign
      - ☑ Rubella antibody, IgG
        Once, today at 0948, For 1 occurrence
        Pt. Portal result release timeframe: Auto Release Standard
        No Phase of Care, Sign
      - ☑ Varicella zoster antibody, IgG qualitative
        Once, today at 0948, For 1 occurrence
        Pt. Portal result release timeframe: Auto Release Standard
        No Phase of Care, Sign
      - ☐ Treponema pallidum (syphilis) antibody
        No Phase of Care
      - ☑ Hepatitis B surface antigen
        Once, today at 0948, For 1 occurrence
        Pt. Portal result release timeframe: Auto Release Standard
        No Phase of Care, Sign
    - ☐ CBC without differential, platelet
      No Phase of Care
    - ☑ CBC with differential, platelet
      Once, today at 0948, For 1 occurrence
      Pt. Portal result release timeframe: Auto Release Standard
      No Phase of Care, Sign
    - ☐ Comprehensive metabolic panel
      No Phase of Care
    - ☐ HIV antigen/antibody panel
      No Phase of Care
    - ☐ Rapid HIV 1,2 Screen ($45)
      No Phase of Care
    - ☐ DIC screen ($48)
      No Phase of Care
    - ☐ T3, free
      No Phase of Care
    - ☑ POCT vaginal wet prep
      Once, today at 0948, For 1 occurrence
      Pt. Portal result release timeframe: Auto Release Standard
      No Phase of Care, Sign
    - ☑ POCT fern test
      Once, today at 0948, For 1 occurrence
      Pt. Portal result release timeframe: Auto Release Standard
      No Phase of Care, Sign
    - ☑ POCT vaginal pH for rupture of membranes
      Once, today at 0948, For 1 occurrence
      No Phase of Care, Sign
    - ☑ Treponema pallidum (syphilis) antibody
      Once, today at 0948, For 1 occurrence
      Pt. Portal result release timeframe: Auto Release Standard
      No Phase of Care, Sign
    - ☐ Diabetic Specific Labs - NMC

- Ob Labor Admission
- Ob Antenatal admission
- NERAS Ob Pre-surgery
- Ob Postpartum admission

LEARNING OUTCOME

Recognize congenital syphilis in the neonate and when to seek Infectious Disease consultation.

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Case #1

Gestational Age: 39w2d at birth

Reason for Admission: Concern for congenital syphilis

Maternal History: 28 yo G5P4014 with pregnancy notable for maternal substance use, limited prenatal care, and syphilis infection.

- 1st syphilis test done on a triage visit
    - + treponemal test and + RPR titers
- Unable to get ahold of patient with positive test results
- Next presentation was to L&D for imminent delivery

Delivery: SVD

How should we look for syphilis?

Recommendations and Reports

CDC Laboratory Recommendations for Syphilis Testing, United States, 2024

John R. Papp, PhD[1]; Ina U. Park, MD[1,2]; Yetunde Fakile, PhD[1]; Lara Pereira, PhD[3]; Allan Pillay, PhD[1]; Gail A. Bolan, MD[1]

[1]Division of STD Prevention, National Center for HIV, Viral Hepatitis, STD, and TB Prevention, CDC, Atlanta, Georgia; [2]University of California San Francisco, San Francisco, California; [3]The Task Force for Global Health, Decatur, Georgia

Papp, J. R., Park, I. U., Fakile, Y., Pereira, L., Pillay, A., & Bolan, G. A. (2024). CDC Laboratory Recommendations for Syphilis Testing, United States, 2024. MMWR. Recommendations and Reports, 73(1), 1–32. https://doi.org/10.15585/mmwr.rr7301a1

Testing

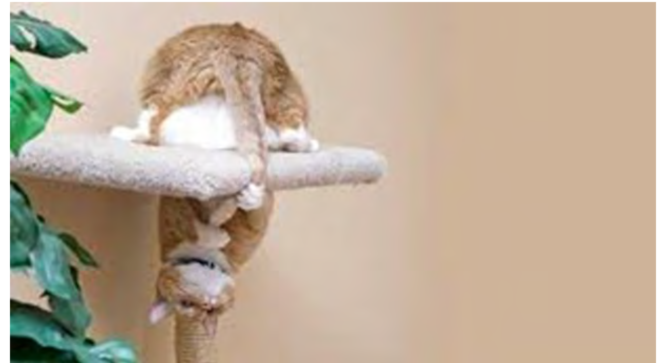
Treponemal tests: detect antibody response to antigens specific to T. pallidum (TP-PA, FTA-ABS, MHA-TP, TPHA, CLIA)

Non-treponemal (lipoidal antigen tests): RPR and VDRL
→ Detect damage to host cells (cardiolipin, lecithin, cholesterol (damage to cells kind of unique to syphilis – 89% of the time)

→ A titer can be calculated

→ Used for screening, treatment outcomes, reinfection detection

BUT, false positives can happen.



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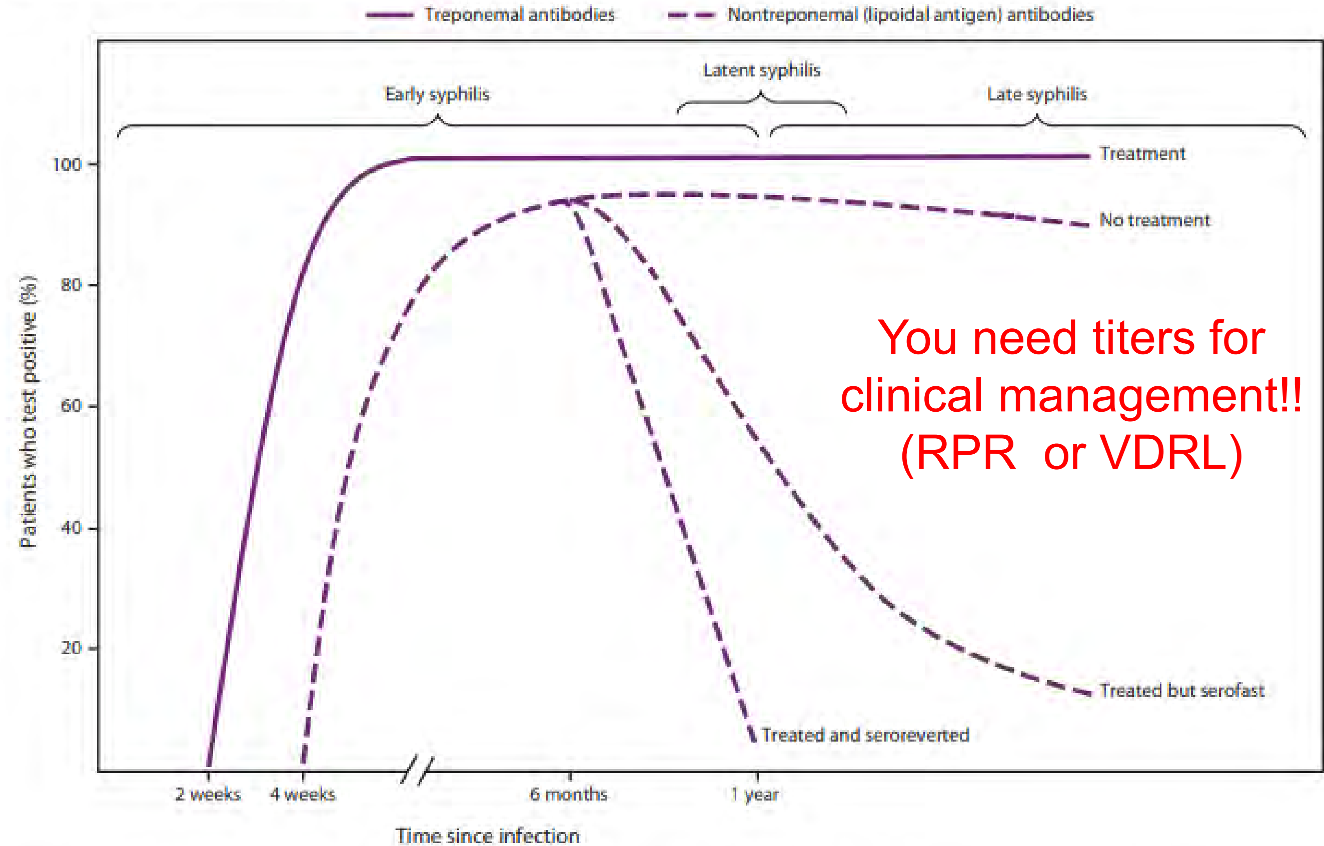
Testing

Treponemal Tests

→ Detect antibodies to T. pallidum

→ In general, positive for life!!



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How do we test babies?

- Passive transfer of maternal antibody can cause positive treponemal test results in neonates and infants for up to 1 year (hematogenous spread)

- Performing treponemal tests on neonatal serum is not currently recommended -- not even IgM based tests

- Quantitative nontreponemal lipoidal antigen tests ARE recommended
  - Perform VDRL or RPR on neonatal serum NOT umbilical cord blood
  - Use the same test used on the mother so titers can be compared

Papp, J. R., Park, I. U., Fakile, Y., Pereira, L., Pillay, A., & Bolan, G. A. (2024). CDC Laboratory Recommendations for Syphilis Testing, United States, 2024. MMWR. Recommendations and Reports, 73(1), 1–32. https://doi.org/10.15585/mmwr.rr7301a1

Case #1
What does the baby need?

Mom had an RPR – we need an RPR.

- RPR elevated with titer 1:4

Do we need any other workup? YES

Should we consult ID? YES

CONGENITAL SYPHILIS (CS)

Evaluation and treatment of infants (<30 days old) exposed to syphilis in utero*

Start ➡ **INFANTS AND BIRTHING PARENT (e.g., mother) SHOULD HAVE SERUM RPR OR VDRL TITER DRAWN AT DELIVERY**

Infant Criteria:

- CS findings on physical exam
- Infant titer ≥4 fold higher than mother's titer
- + darkfield or PCR of placenta, cord lesion, or body fluid
- + silver stain of placenta or cord

No to all →

Maternal Criteria:

- Not treated
- Inadequately treated§
- Treatment undocumented
- Treated with a non-benzathine penicillin G regimen
- Initiated treatment <30 days before delivery

No to all →

Additional Maternal Criteria:

- Adequately treated with benzathine penicillin G appropriate for stage, initiated ≥30 days before delivery

AND

- No concern for reinfection or treatment failure

Yes to any → ***Scenario 1: Proven or Highly Probable CS***

Infant Evaluation:

- **CSF analysis†** VDRL, cell count, and protein
- **Complete blood count (CBC), differential and platelet count**
- **Long-bone radiographs**
- **Tests as clinically indicated by signs on physical exam.**

↓

Infant Treatment:

Aqueous crystalline penicillin G‡

100,000–150,000 units/kg/day, administered as 50,000 units/kg/dose IV every 12 hours during the first 7 days of life and every 8 hours thereafter for a total of 10 days

---

Yes to any → ***Scenario 2: Possible CS‖***

Infant Evaluation:

- **CSF analysis†** VDRL, cell count, and protein
- **CBC, differential, and platelet count**
- **Long-bone radiographs**

Any abnormalities, results not available, *OR follow-up¶ uncertain* → Infant Treatment: Aqueous crystalline penicillin G

No abnormalities *AND* follow-up¶ certain ↓

Infant Treatment:

Benzathine penicillin G

50,000 units/kg/dose IM in a single dose

Yes to both → ***Scenario 3: Less Likely CS***

No additional infant evaluation

↓

Review Maternal Titers & Stage:

- ≥4-fold decrease in titer after treatment for early syphilis

OR

- Stable titer for low-titer, latent syphilis (RPR < 1:4 or VDRL<1:2)

No to both *OR* follow-up¶ uncertain → Infant Treatment: Benzathine penicillin G

Yes to either *AND* follow-up¶ certain ↓

No treatment indicated

with close serologic follow-up of infant every 2-3 months for 6 months

---

* Scenario 4 – in which an infant at delivery has a normal physical exam and titer < 4-fold mother's titer, AND the mother was adequately treated prior to becoming pregnant and sustains RPR titers <1:4 or VDRL<1:2 throughout pregnancy – is not included.

† CSF test results obtained during the neonatal period can be difficult to interpret; normal values differ by gestational age and are higher in preterm infants.

‡ Alternative: Procaine penicillin G 50,000 units/kg/dose IM in a single daily dose for 10 days.

§ Benzathine Penicillin G (BPG or Bicillin-LA), administered according to stage of disease and initiated at least 30 days prior to delivery is the only adequate treatment for syphilis during pregnancy.

‖ Evaluation is not necessary if a 10-day course of parenteral therapy is administered, although such evaluations might be useful. If the neonate's nontreponemal test is nonreactive and the mother's risk for untreated syphilis is low, a single IM dose of BPG can be considered without evaluation.

¶ All neonates with reactive nontreponemal tests should receive careful follow-up examinations and serologic testing (i.e., a nontreponemal test) every 2–3 months until the test becomes nonreactive. Neonates with a negative nontreponemal test at birth whose mothers were seroreactive at delivery should be retested at 3 months to rule out serologically negative incubating congenital syphilis at the time of birth.

FOR MORE INFORMATION ABOUT SCENARIO 4 MANAGEMENT, TREATMENT OF SYPHILIS IN PREGNANCY, NEONATAL CSF INTERPRETATION, AND CS INFANT FOLLOW-UP, PLEASE REFER TO THE CDC 2021 STI TREATMENT GUIDELINES.

Revised 2/2022

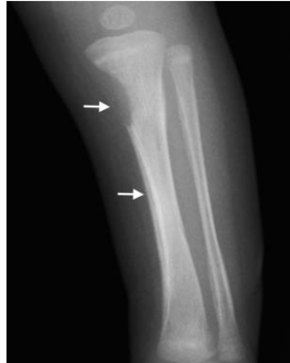
New tool for clinicians unveiled to ensure appropriate treatment of congenital syphilis. (n.d.). *California PTC*. Retrieved September 25, 2024, from https://californiaptc.com/in-the-news/new-tool-for-clinicians-unveiled-to-ensure-appropriate-treatment-of-congenital-syphilis/

Case #1

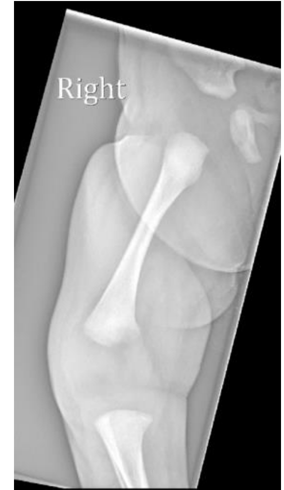
Mom was positive for syphilis and NOT treated appropriately per state disease investigators.
Completed 10 days of penicillin G treatment.
Repeat RPR at 3 and 6 mos outpatient.

*CBC including differential and platelets: wnl
*LP with negative VDRL, normal cell count
*Ophthalmologic Exam: normal (repeat Q3mos until seronegative)
*Long Bone Scan with early changes of congenital syphilis

- bone destruction occurs in up to 60%-80% of cases and can be sole manifestation[1]



-Wimberger Sign: metaphyseal destruction
-Periosteal reaction



1. Koliou, M., Chatzicharalampous, E., Charalambous, M., & Aristeidou, K. (2022). Congenital syphilis as the cause of multiple bone fractures in a young infant case report. *BMC Pediatrics*, *22*, 728. https://doi.org/10.1186/s12887-022-03789-y
2. Stephens, J. R., & Arenth, J. (2015). Wimberger Sign in Congenital Syphilis. *The Journal of Pediatrics*, *167*(6), 1451. https://doi.org/10.1016/j.jpeds.2015.09.005

Case #2

Gestational Age: 37w3d at birth

Reason for Admission: Newborn Infant

Maternal History: 31 yo G5P3023 with pregnancy notable for maternal substance use and limited prenatal care. Mom intoxicated on arrival.

- Treponemal syphilis test + in pregnancy and at delivery
- RPR negative x2
- Repeat treponemal test negative (different test than 1st) x2
- The state investigators find evidence of a prior known syphilis infection with documented treatment prior to pregnancy.

Delivery: SVD

Case #2
What does the baby need?

Mom had an RPR – we need an RPR.
- RPR NEGATIVE

Whoops! A treponemal antibody test was done on this baby too.
- FTA-ABS is POSITIVE

Do we need any other workup? No

Should we consult ID? We did.
No treatment or further workup recommended. Follow-up at Q3mos with repeat RPR until 6 mos of age.

Case #2
If this baby were to have syphilis, how would it present?

Early: symptoms before 2 years of age

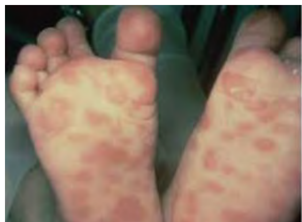
- usually within the first 5 weeks after birth and by 3 mos
- hepatomegaly and bony abnormalities most common
- NO isolated splenomegaly (compared to other TORCH)
- bony abnormalities present at birth/early – heal by 6 mos

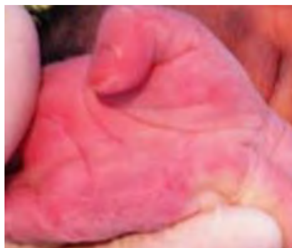
Late: after 2 years of age – at risk if not treated even if asymptomatic at birth

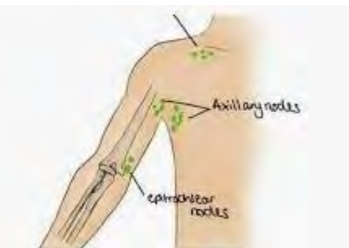
Molly Crimmins Easterlin, Rangasamy Ramanathan, Theodore De Beritto; Maternal-to-Fetal Transmission of Syphilis and Congenital Syphilis. Neoreviews September 2021; 22 (9): e585–e599. https://doi.org/10.1542/neo.22-9-e585

Early vs Late Congenital Syphilis

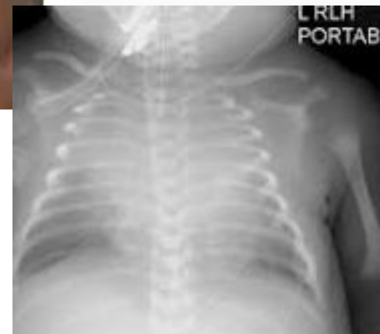
Early: symptoms before 2 years of age



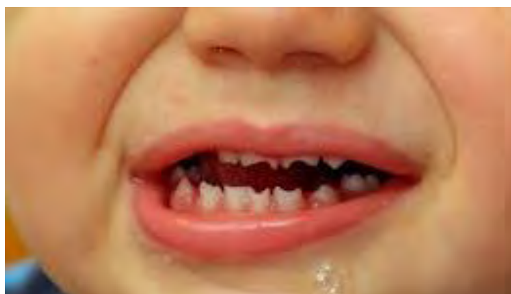




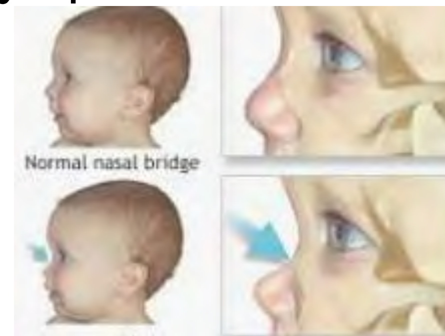
Snuffles/rhinitis



Late: after 2 years of age – at risk if not treated even if asymptomatic at birth



Deafness



Molly Crimmins Easterlin, Rangasamy Ramanathan, Theodore De Beritto; Maternal-to-Fetal Transmission of Syphilis and Congenital Syphilis. Neoreviews September 2021; 22 (9): e585–e599. https://doi.org/10.1542/neo.22-9-e585

Case #3

Gestational Age: 38w5d at birth

Reason for Admission: Newborn Infant

Maternal History: 18 yo G1P1001 with pregnancy notable for syphilis infection and delayed prenatal care.

- VDRL + at 2nd trimester screen at 28 weeks.
- FTA-ABS +
- Completed treatment with benzathine pencillin G.

Delivery: SVD

CONGENITAL SYPHILIS (CS)

Evaluation and treatment of infants (<30 days old) exposed to syphilis in utero*

Start ➡ **INFANTS AND BIRTHING PARENT (e.g., mother) SHOULD HAVE SERUM RPR OR VDRL TITER DRAWN AT DELIVERY**

Infant Criteria:

- CS findings on physical exam
- Infant titer ≥4 fold higher than mother's titer
- + darkfield or PCR of placenta, cord lesion, or body fluid
- + silver stain of placenta or cord

No to all →

Maternal Criteria:

- Not treated
- Inadequately treated§
- Treatment undocumented
- Treated with a non-benzathine penicillin G regimen
- Initiated treatment <30 days before delivery

No to all →

Additional Maternal Criteria:

- Adequately treated with benzathine penicillin G appropriate for stage, initiated ≥30 days before delivery

  AND
- No concern for reinfection or treatment failure

Yes to any → *Scenario 1: Proven or Highly Probable CS*

Infant Evaluation:

- **CSF analysis**†
  VDRL, cell count, and protein
- **Complete blood count (CBC), differential and platelet count**
- **Long-bone radiographs**
- **Tests as clinically indicated by signs on physical exam.**

↓

Infant Treatment:

Aqueous crystalline penicillin G‡

100,000–150,000 units/kg/day, administered as 50,000 units/kg/dose IV every 12 hours during the first 7 days of life and every 8 hours thereafter for a total of 10 days

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Yes to any → *Scenario 2: Possible CS*‖

Infant Evaluation:

- **CSF analysis**†
  VDRL, cell count, and protein
- **CBC, differential, and platelet count**
- **Long-bone radiographs**

Any abnormalities, results not available, *OR follow-up*¶ *uncertain* → Infant Treatment: Aqueous crystalline penicillin G

No abnormalities *AND* follow-up¶ certain ↓

Infant Treatment:

Benzathine penicillin G

50,000 units/kg/dose IM in a single dose

Yes to both → *Scenario 3: Less Likely CS*

No additional infant evaluation

↓

Review Maternal Titers & Stage:

- ≥4-fold decrease in titer after treatment for early syphilis

  OR
- Stable titer for low-titer, latent syphilis (RPR < 1:4 or VDRL<1:2)

No to both *OR* follow-up¶ uncertain → Infant Treatment: Benzathine penicillin G

Yes to either *AND* follow-up¶ certain ↓

No treatment indicated

with close serologic follow-up of infant every 2-3 months for 6 months

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* Scenario 4 – in which an infant at delivery has a normal physical exam and titer < 4-fold mother's titer, AND the mother was adequately treated prior to becoming pregnant and sustains RPR titers <1:4 or VDRL<1:2 throughout pregnancy – is not included.

† CSF test results obtained during the neonatal period can be difficult to interpret; normal values differ by gestational age and are higher in preterm infants.

‡ Alternative: Procaine penicillin G 50,000 units/kg/dose IM in a single daily dose for 10 days.

§ Benzathine Penicillin G (BPG or Bicillin-LA), administered according to stage of disease and initiated at least 30 days prior to delivery is the only adequate treatment for syphilis during pregnancy.

‖ Evaluation is not necessary if a 10-day course of parenteral therapy is administered, although such evaluations might be useful. If the neonate's nontreponemal test is nonreactive and the mother's risk for untreated syphilis is low, a single IM dose of BPG can be considered without evaluation.

¶ All neonates with reactive nontreponemal tests should receive careful follow-up examinations and serologic testing (i.e., a nontreponemal test) every 2–3 months until the test becomes nonreactive. Neonates with a negative nontreponemal test at birth whose mothers were seroreactive at delivery should be retested at 3 months to rule out serologically negative incubating congenital syphilis at the time of birth.

FOR MORE INFORMATION ABOUT SCENARIO 4 MANAGEMENT, TREATMENT OF SYPHILIS IN PREGNANCY, NEONATAL CSF INTERPRETATION, AND CS INFANT FOLLOW-UP, PLEASE REFER TO THE CDC 2021 STI TREATMENT GUIDELINES.

Revised 2/2022

New tool for clinicians unveiled to ensure appropriate treatment of congenital syphilis. (n.d.). *California PTC*. Retrieved September 25, 2024, from https://californiaptc.com/in-the-news/new-tool-for-clinicians-unveiled-to-ensure-appropriate-treatment-of-congenital-syphilis/

Case #3

Was appropriate treatment initiated greater than or equal to 30 days prior to birth? Yes

Does mom need another test?
-Yes - at delivery.

What test? VDRL
-VDRL with 2-fold decrease in titers

Does baby need a syphilis test?
-Yes, VDRL. VDRL obtained and negative. Physical exam normal.

Does the infant need further workup? No

Does the infant need treatment?
-Yes, a single benzathine penicillin G 50,000 units/kg IM (because mom's titers didn't drop 4-fold)

Does the infant need ID consultation and follow-up?
-Yes, follow-up VDRL titer at 3 mos

Case #4

Doesn't exist because we eradicated syphilis in the only known host – humans.

We identified it.

We appropriately treated it.

We eradicated it.

THANK YOU FOR YOUR TIME!

University of Nebraska
Medical Center℠

Children's
NEBRASKA

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