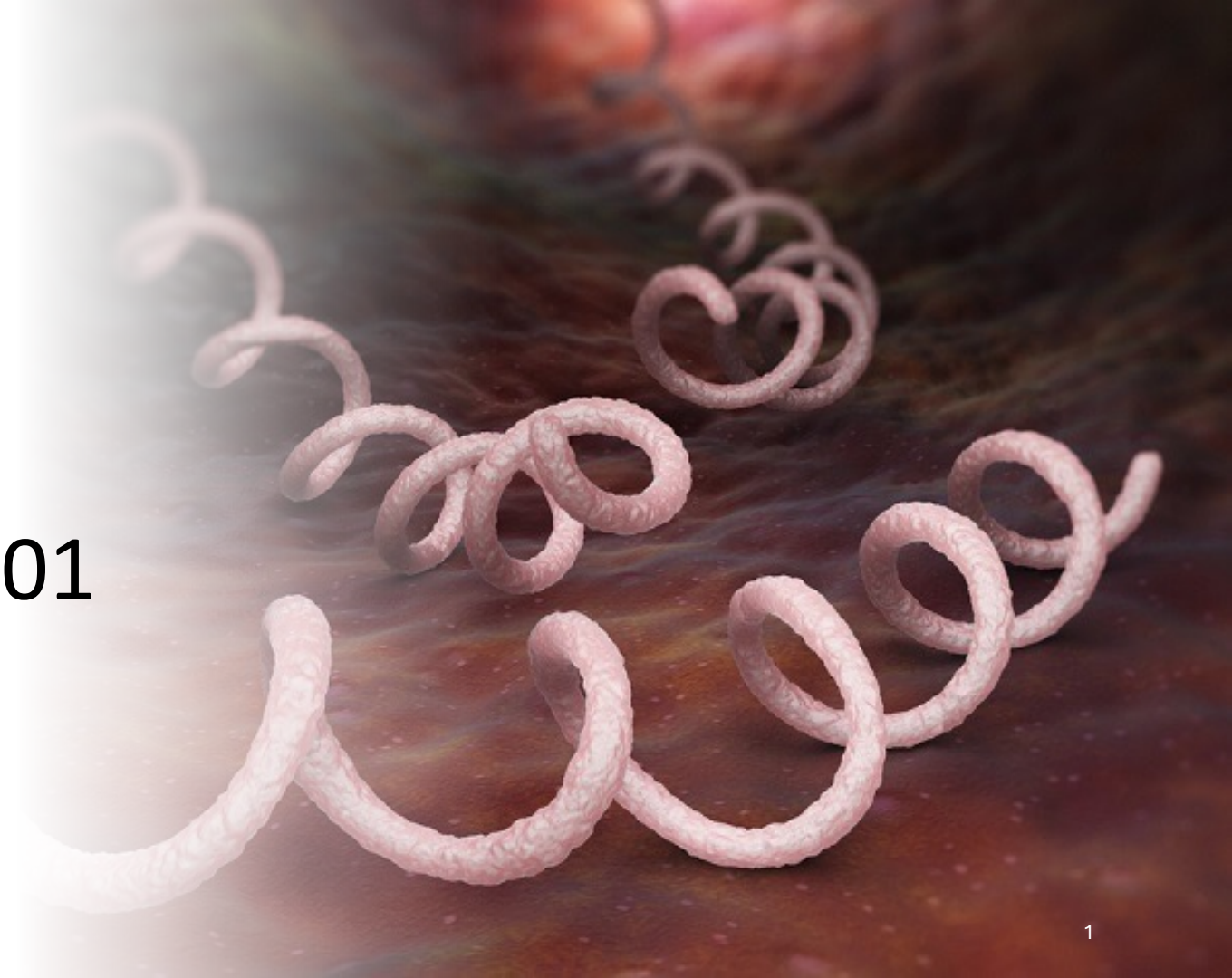
# Syphilis 101

Jorge Mera, MD



# Disclosure Slide

- Gilead Sciences - Advisor/Researcher
- Merck - Researcher
- Abbvie Pharmaceutical - Researcher/Speaker
- Roche - Advisor

# Acknowledgment


- **Andrew Yu, MS, RN, ACRN**
- National HIV/HCV/STI Clinical Coordinator, HIS
- Melanie Taylor, MD

For sharing his knowledge, syphilis slides and cases

# Outline

Trepanomatoses

A brief history of syphilis

Syphilis 101

# Human Treponematoses

**Syphilis: *T. pallidum* spp. *pallidum***

- Globally distributed
- Sexually transmitted
- Vertically transmitted

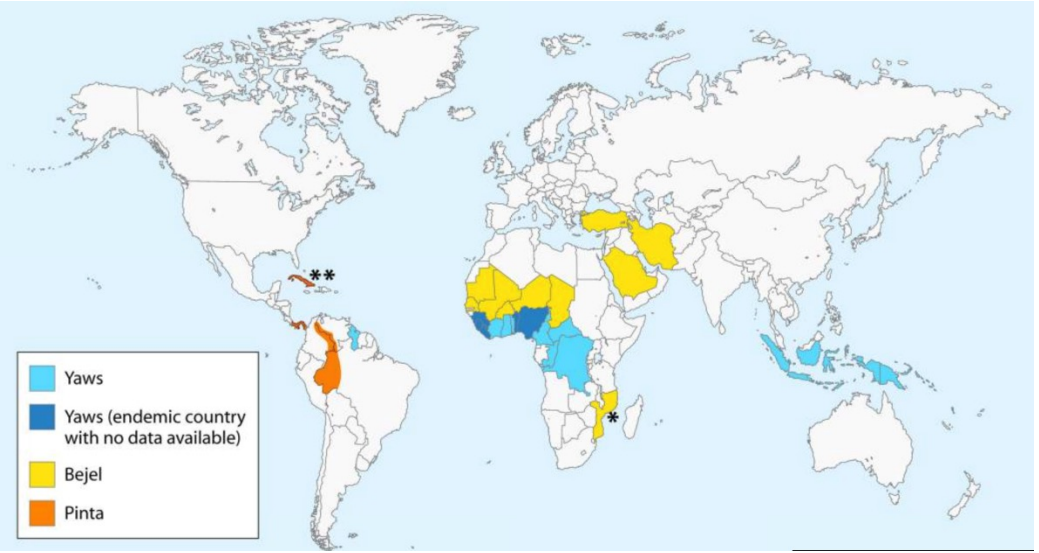
**Endemic Treponematoses:**

**Yaws**: *T. pallidum spp. Pertenue*

**Bejel:** *T Pallidum spp. Endemicum*

**Pinta**: *T Pallidum spp. carateum*

- Mainly cause disease of the skin, joints, soft tissue, oral cavity and bone
- No evidence of vertical transmission




Giacani L, Lukehart SA. The endemic treponematoses. Clin Microbiol Rev. 2014 Jan;27(1):89-115.

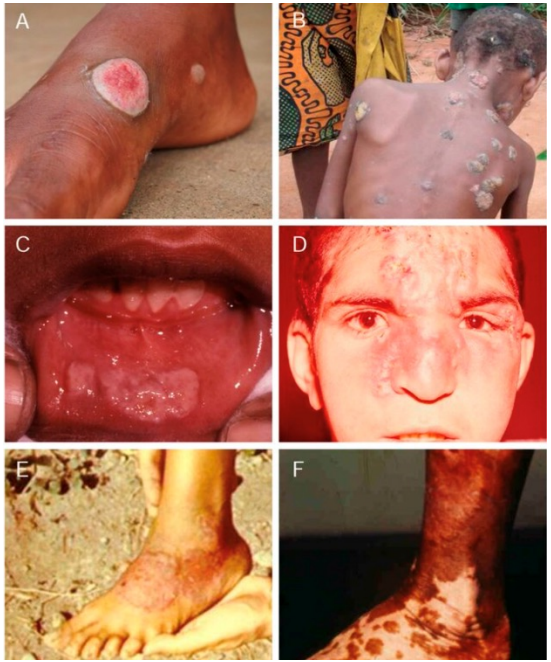
# Human Treponematoses

Have a clonal origin with common ancestor

Genomically, morphologically, and serologically similar

Infection occurs following an exposure of mucosal surfaces or traumatized skin

The organisms multiply and disseminate hematogenously or via lymphatic systems.




A: Papillomatous primary yaws lesion
B: Disseminated papilloma of secondary yaws
C: labial mucosal plaques of primary bejel
D: Disfiguring infiltration of the nose, glabella, and forehead in a patient with secondary bejel
E: Squamous plaque of primary pinta
F: Late achromic pinta.

November 2013 PLOS Neglected Tropical Diseases 7(10):e2283

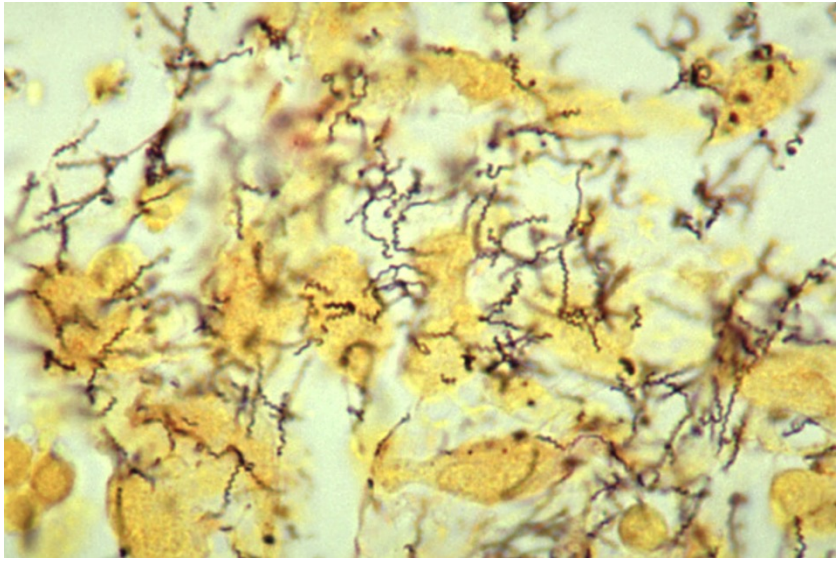
# History of Syphilis

| | |
|---|---|
| **Origins of Syphilis: Columbian Hypothesis** | • T. pallidum first arose in the Old World as a non-venereal infection and likely underwent genetic mutations giving rise to T. pallidum spp pallidum |
| **Where does the name of Syphilis come from:** | • A poem called "Syphilis, Sive Morbus Gallicus" ("Syphilis, or the French Disease"), written by Italian physician-poet Girolamo Fracastoro in 1530. |
| **The “Great Imitator”** | • Supposedly described by Sir William Osler |
| **First reported outbreak:** | • Among the French troops in Europe during the war of Naples in 1495 |

https://asm.org/articles/2019/june/revisiting-the-great-imitator,-part-i-the-origin-a

# The Beginning of Laboratory Diagnosis of Syphilis: Direct Detection of Organisms using Microscopy

**1905** T. pallidum, was first observed in diseased tissues by German zoologist Fritz Schaudinn



1906 Karl Landsteiner, used dark-field microscopy to detect syphilitic treponemes in infected specimens

https://asm.org/articles/2019/june/revisiting-the-great-imitator,-part-i-the-origin-a

# Non-Treponemal Testing

**In 1906 the Wassermann, Neisser and Bruck**

- Developed the first serologic test for the diagnosis of syphilis
- Complement Fixation

**In 1907 Landsteiner dilucidated the antibodies**

- "Reagins" were directed against a cardiolipin found tissue

**In 1922 a flocculation test was developed**

- Led to development of RPR and VDRL

**In 2018 A study found that *T. pallidum* contained a cardiolipin**

- The increase in the anti cardiolipin antibody production are the combined effects of both the *T. pallidum* cardiolipin antigen and the damaged host-cell cardiolipin antigen during syphilis infection.

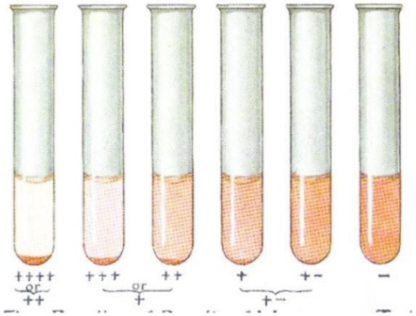
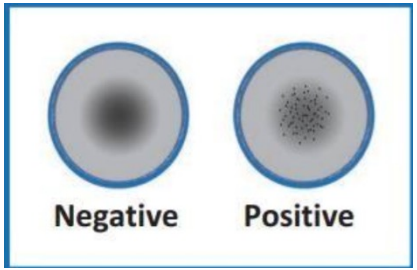


Figure 5. Wasserman test [19]




https://asm.org/articles/2019/june/revisiting-the-great-imitator,-part-i-the-origin-a

# Non-Treponemal Testing

In 2018 A study found that *T. pallidum* contained a cardiolipin

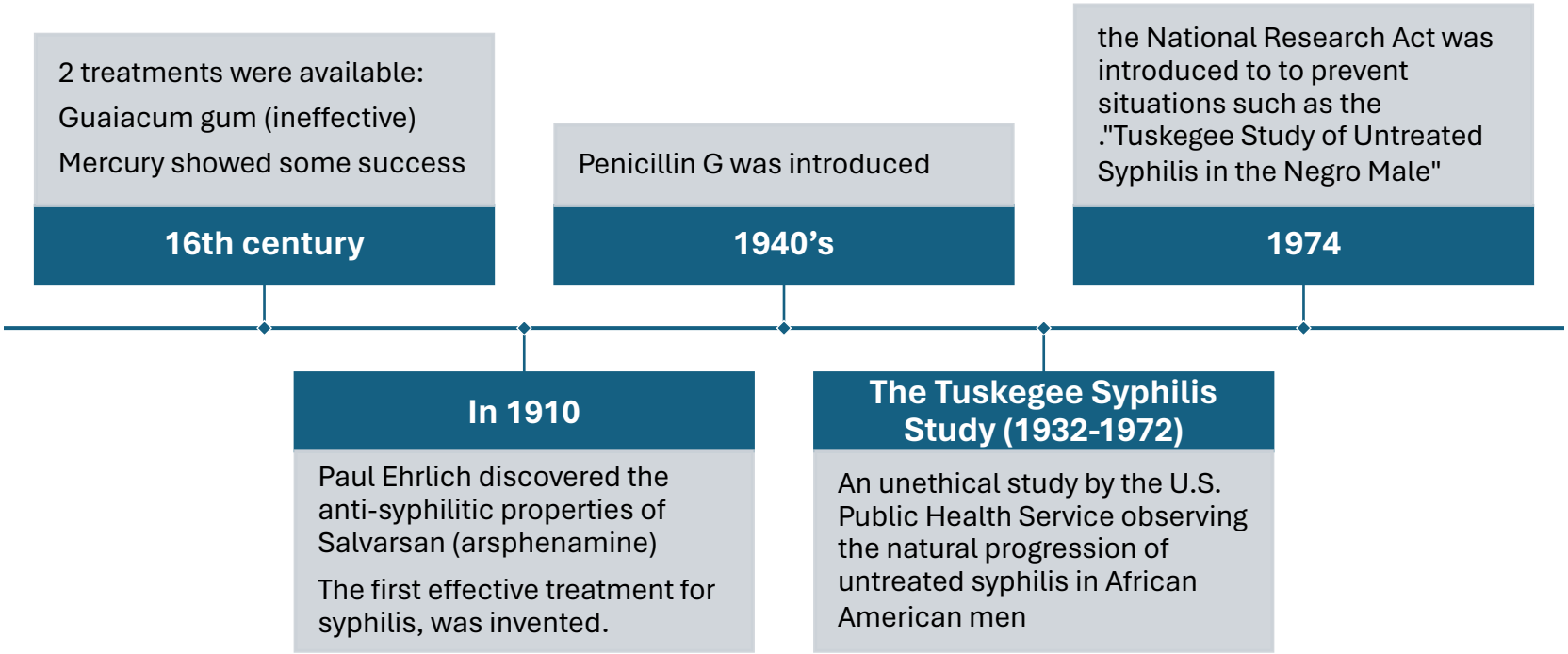
- The increase in the Wasserman antibody (anti-phospholipid antibody) production was suggested to be a result of the combined effects of both the *T. pallidum* cardiolipin antigen and the damaged host-cell cardiolipin antigen during syphilis infection.

In the 1940s structure of the antigen in the Wassermann test was identified

- It is a diphosphatidylglycerol called cardiolipin
- Commonly found in normal non-syphilitic tissues

https://asm.org/articles/2019/june/revisiting-the-great-imitator,-part-i-the-origin-a

# History of Syphilis: Treatment




https://asm.org/articles/2019/june/revisiting-the-great-imitator,-part-i-the-origin-a

# Case 1:

**HPI:**

- 20 yo cis-gender female who has sex with cis-gender males, presents for a pregnancy test only. She reports last had oral and vaginal sex without protective barrier 3 weeks ago and had 2 partners over the past 6 months. No current signs or symptoms, and doesn't recollect any in the past year
- Never tested for HIV; last gonorrhea/chlamydia (urine only) and RPR tests were 11 months ago, all negative

**Social History:**

- Denies drug use, reports unstable housing and transportation, no regular access to phone

**Labs in Office**

- Rapid pregnancy test: **negative**
- Agrees to rapid HIV/Syphilis test in office when offered incentive
- HIV: **non-reactive**; Syphilis (treponemal antibody): **reactive**

# Case 1:
# What are the recommended next steps? (Check all that apply)

A. No further testing necessary, as initial reason for the visit (pregnancy testing) already completed

B. Draw serum HIV, test for gonorrhea and chlamydia in the urine and throat

C. Draw RPR, wait for results (~1 week) to determine treatment

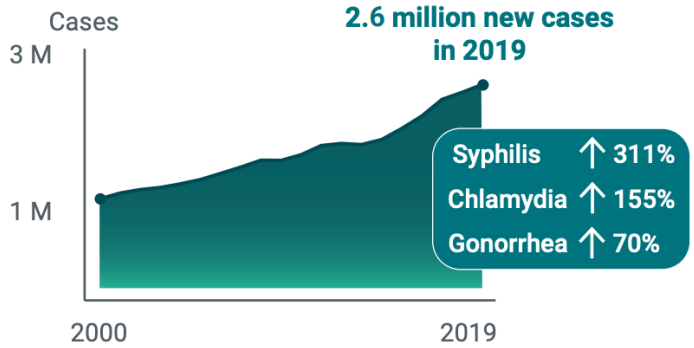
D. Draw RPR and immediately administer 2.4 MU IM injection of benzathine penicillin for early latent stage syphilis

E. Draw RPR and immediately administer 2.4 MU IM injection of benzathine penicillin weekly x 3 weeks (total 7.2 MU) for late latent stage syphilis

# Reversing the Rise in STIs: Integrating Services to Address the Syndemic of STIs, HIV, Substance Use, and Viral Hepatitis

## STI Overview

### Chlamydia, gonorrhea, and syphilis cases have been increasing for years.



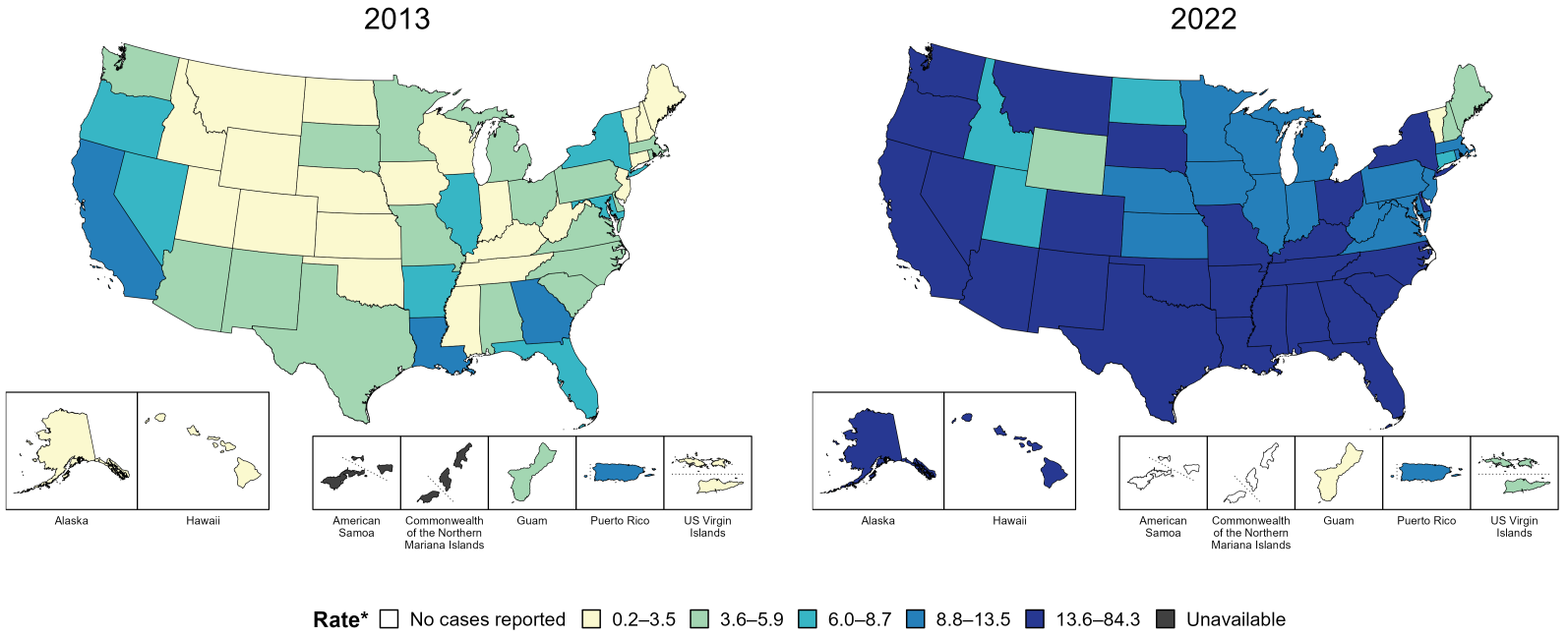

### People most affected by STIs include:

- Adolescents and people aged 15-24 years
- Gay, bisexual, and other men who have sex with men
- Pregnant people
- People from some racial and ethnic minority groups

Reported cases of sexually transmitted infections (STIs) have increased dramatically in recent years. HIV, substance use, and viral hepatitis affect similar populations as STIs and each of these health concerns directly affects the others. A holistic, whole-of-society approach, including addressing social and economic barriers, is required to improve this syndemic and America's health.

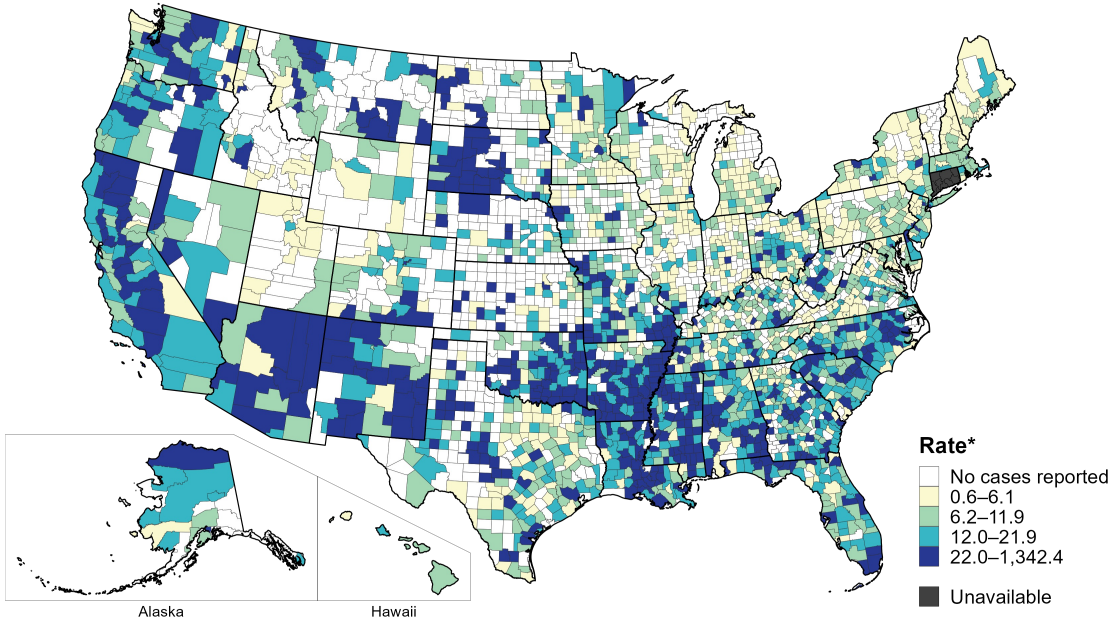
www.cdc.gov/std/statistics/2019/syndemic-infographic.pdf

# Primary and Secondary Syphilis — Rates of Reported Cases by Jurisdiction, United States and Territories, 2013 and 2022




* Per 100,000

# Primary and Secondary Syphilis — Rates of Reported Cases by County, United States, 2022



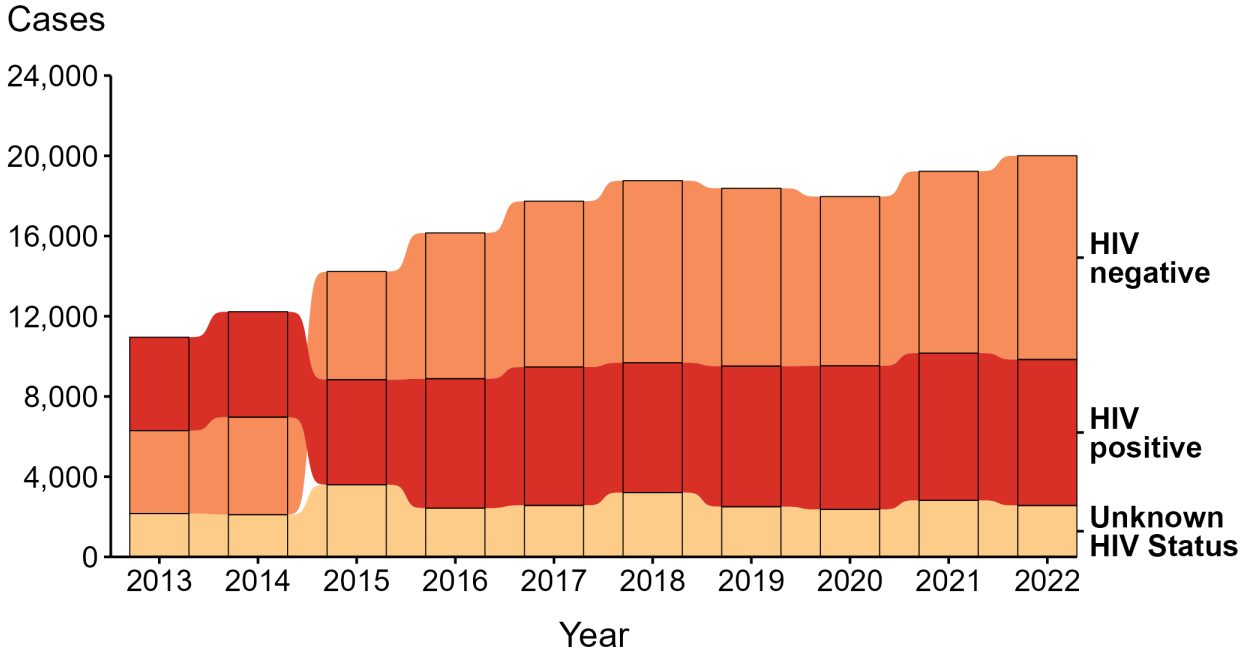

* Per 100,000

# Primary and Secondary Syphilis — Reported Cases and Rates by State, United States, 2022

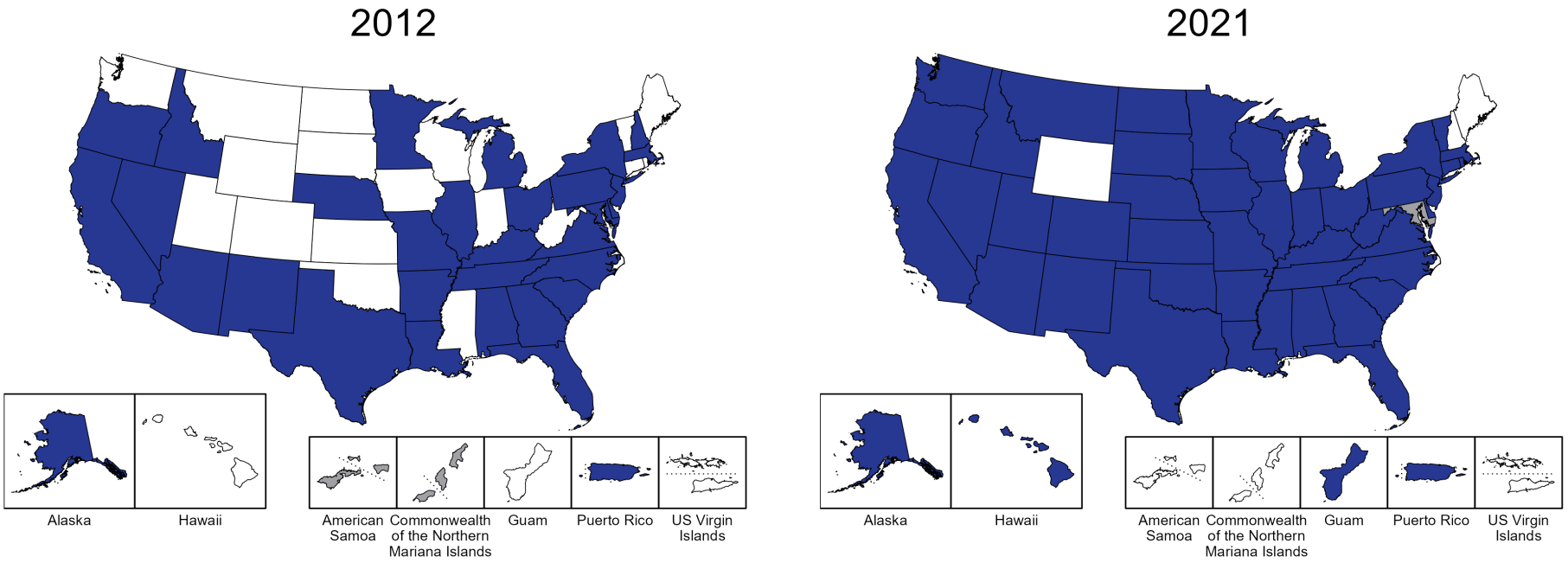
| Rank* | State | Cases | Rate per 100,000 Population |
|---|---|---|---|
| 1 | South Dakota | 767 | 84.3 |
| 2 | New Mexico | 761 | 36.0 |
| 3 | Arkansas | 1,001 | 32.9 |
| 4 | Oklahoma | 1,278 | 31.8 |
| 5 | Mississippi | 913 | 31.1 |
| 6 | Arizona | 2,151 | 29.2 |
| 7 | Montana | 325 | 28.9 |
| 8 | Nevada | 902 | 28.4 |
| 9 | Louisiana | 1,225 | 26.7 |
| 10 | Oregon | 1,117 | 26.3 |
| 11 | Washington | 1,920 | 24.7 |
| 12 | Missouri | 1,454 | 23.5 |
| 13 | Alabama | 1,190 | 23.5 |
| 14 | Delaware | 238 | 23.4 |
| 15 | North Carolina | 2,473 | 23.1 |
| 16 | Alaska | 160 | 21.8 |
| 17 | Florida | 4,618 | 20.8 |
| 18 | Ohio | 2,402 | 20.4 |
| 19 | California | 7,849 | 20.1 |
| 20 | Georgia | 2,182 | 20.0 |
| 21 | South Carolina | 1,033 | 19.6 |
| 22 | New York | 3,603 | 18.3 |
| | **US TOTAL†** | **59,016** | **17.7** |

https://www.cdc.gov/std/statistics/2022/tables/21.htm

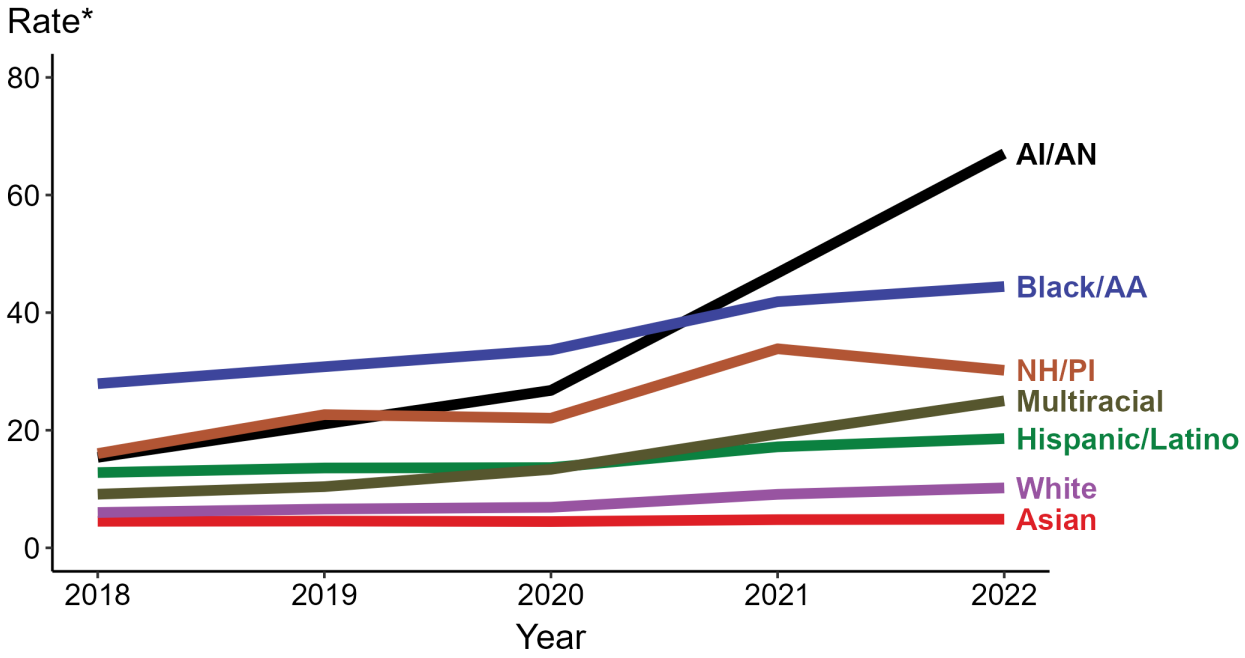
# Primary and Secondary Syphilis — Reported Cases Among Men Who Have Sex with Men by HIV Status, United States, 2013–2022



# Congenital Syphilis — Reported Cases by Year of Birth and State, United States and Territories, 2012 and 2021



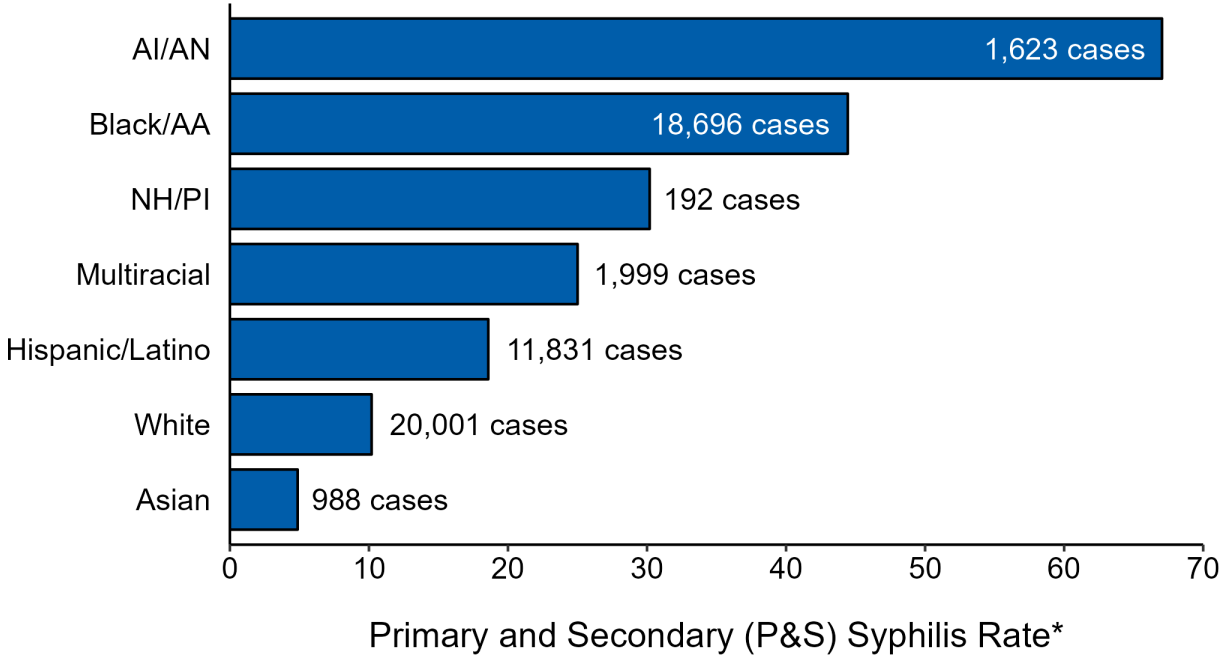
# Primary and Secondary Syphilis — Rates of Reported Cases by Race/Hispanic Ethnicity, United States, 2018–2022




* Per 100,000

**ACRONYMS:** AI/AN = American Indian or Alaska Native; Black/AA = Black or African American; NH/PI = Native Hawaiian or other Pacific Islander

# Primary and Secondary Syphilis — Case Counts and Rates of Reported Cases by Race/Hispanic Ethnicity, United States, 2022



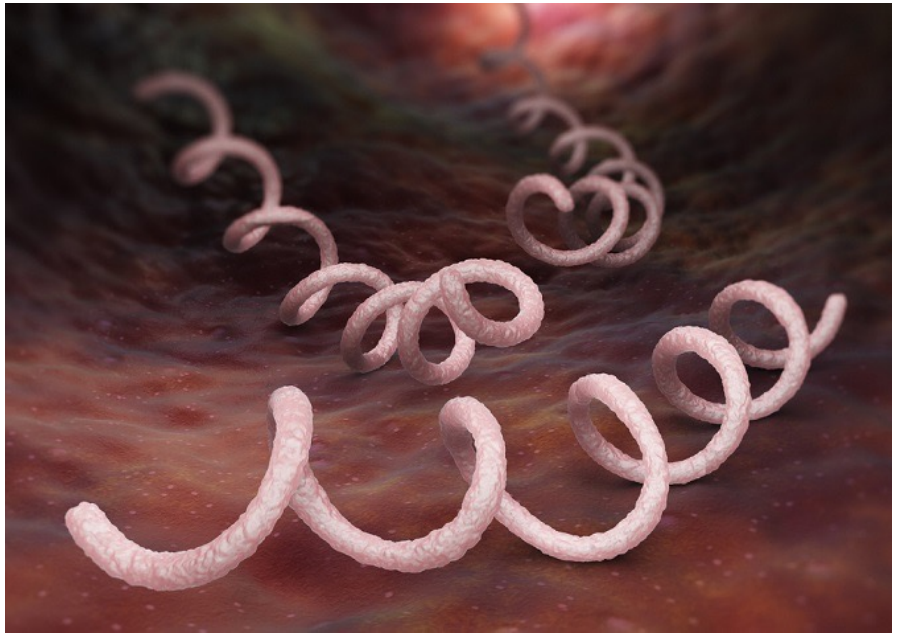

* Per 100,000 population

**NOTE:** In 2022, a total of 3,686 P&S syphilis cases (6.2%) had missing, unknown, or other race and were not reported to be of Hispanic ethnicity. These cases are not shown in this plot.

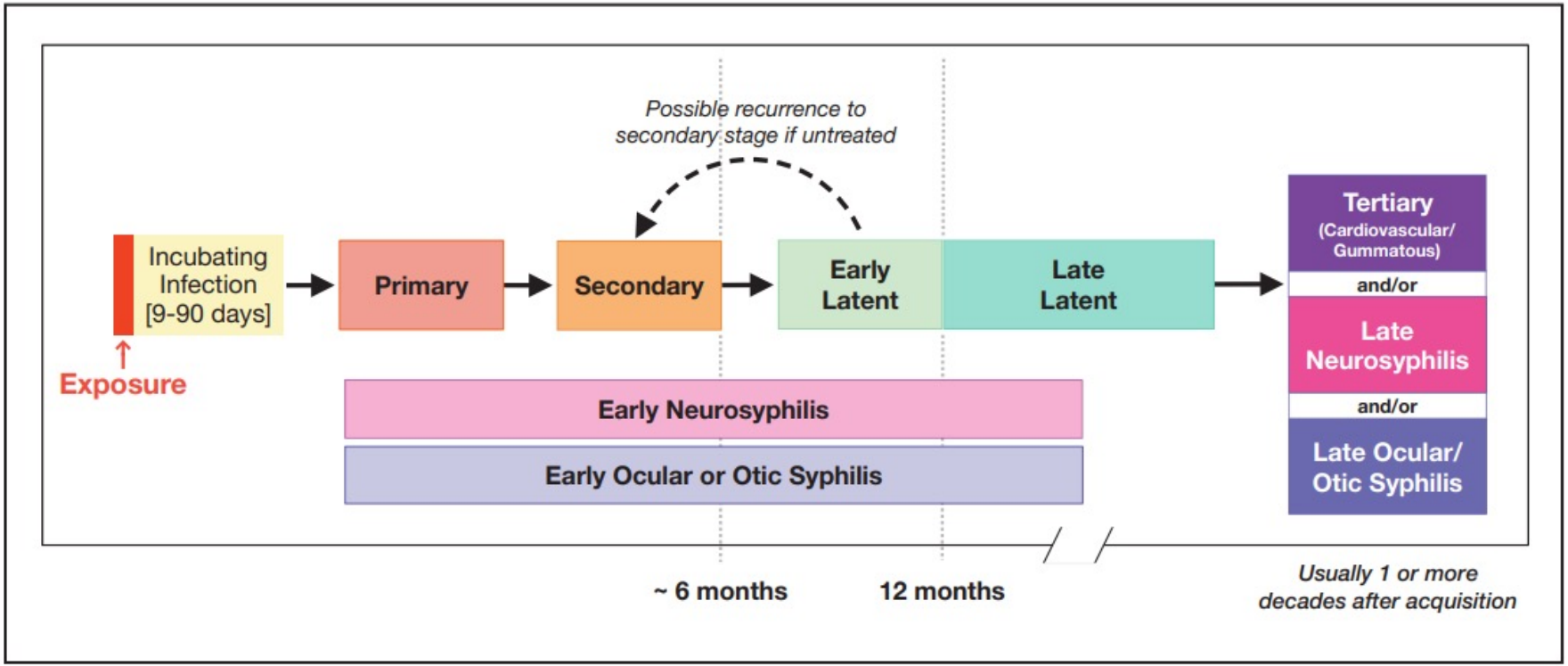
**ACRONYMS:** AI/AN = American Indian or Alaska Native; Black/AA = Black or African American; NH/PI = Native Hawaiian or other Pacific Islander

# Syphilis

- **Sexual** (horizontal) and vertical transmission
- Average incubation period is **21 days** (can range from 10-90 days)
- **Four stages**
  - Primary
  - Secondary
  - Early (non-primary, non-secondary)
  - Unknown duration or late



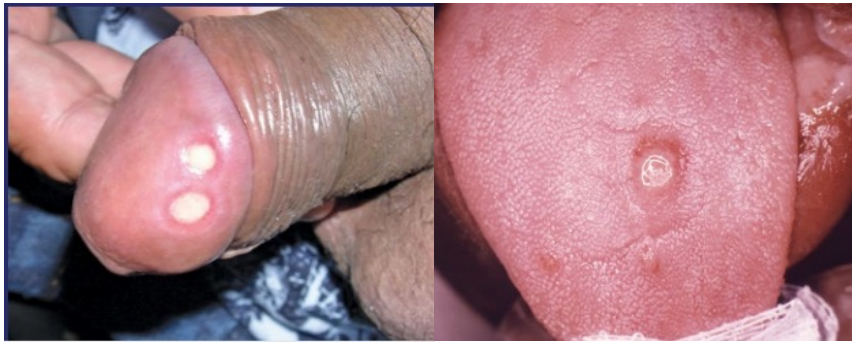
# The Natural History of Untreated Syphilis

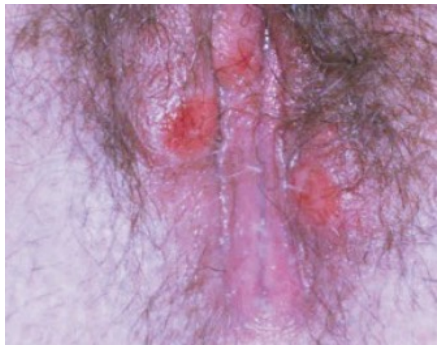



https://www.nycptc.org/x/Syphilis_Monograph_2019_NYC_PTC_NYC_DOHMH.pdf

# Primary Syphilis

- **A single chancre** marks the onset of primary syphilis (can be multiple)
- **Usually firm, round, and painless** Located where syphilis enters the body
- Can appear in **difficult to notice** locations (anus, vagina)
- **Lasts 3 to 6 weeks** and heals regardless of whether a person receives treatment
- If untreated, **will progress** to the secondary stage



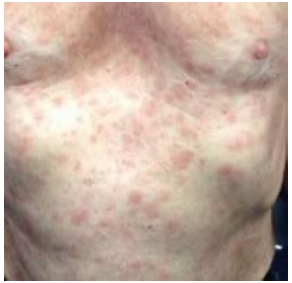


**40 % present with multiple painful ulcers**

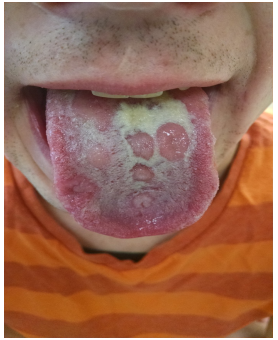
The Diagnosis, Management and Prevention of Syphilis (nycptc.org)

# Secondary Syphilis

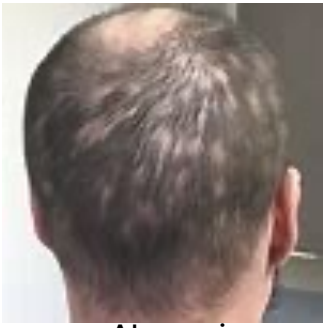
- **Skin rashes**
  - Usually does not itch, may appear as rough, red, brown spots
- **Mucous membrane lesions**
  - Sores in the mouth, vagina or anus mark the second stage of symptoms
- **Other symptoms:**
  - Fever, swollen lymph nodes, sore throat, hair loss, aches and pains
- **Resolves** regardless of whether a person receives treatment
- If untreated, **will progress** to the latent and possible tertiary stages



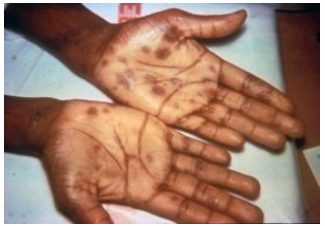
Torso rash



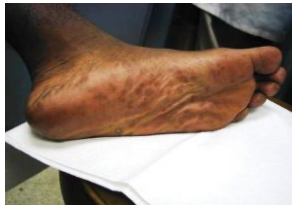
Mucous patches



Alopecia



Palmar rash



Plantar rash

Condyloma lata

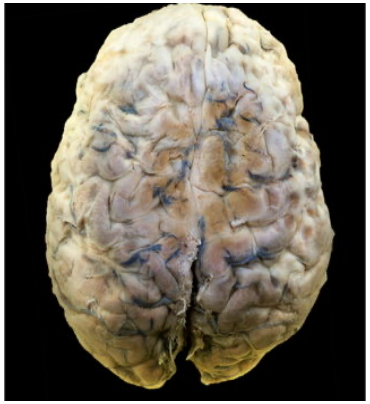
https://www.cdc.gov/std/syphilis/images.htm. 2.https://www.cdc.gov/std/statistics/2019/case-definitions.htm

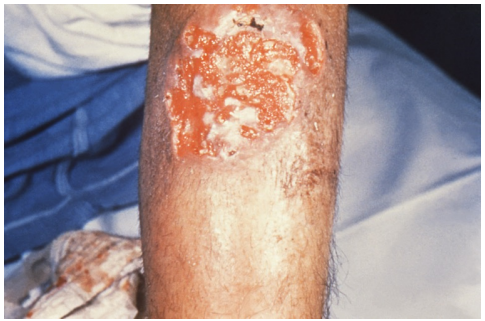
# Latent Syphilis

- Latent (hidden) stage of syphilis is when there are no visible signs or symptoms of syphilis
- Early latent syphilis is where infection occurs **within the past 12 months**
- Late latent syphilis is where infection occurs **more than 12 months ago**
- Latent syphilis of unknown duration is when there is **not enough evidence** to confirm initial infection was within the previous 12 months

# Tertiary Syphilis

- Rare, develops in a subset of untreated syphilis infections
- Appears 10-30 years after infection, can be fatal
- Can affect multiple organ systems including: brain, nerves, heart, blood vessels, eyes, liver, bones, joints





https://www.cdc.gov/std/statistics/2019/case-definitions.htm)

https://phil.cdc.gov/Details.aspx?pid=17837

# Neurologic Manifestations of Syphilis

- **Can occur at any stage**

| **Neurosyphilis** (Nervous System) | **Ocular Syphilis** (Visual System) | **Otosyphilis** (Auditory/Vestibular System) |
|---|---|---|
| - Severe headache<br>- Trouble with muscle movements<br>- Paralysis<br>- Numbness<br>- Altered mental status | - Eye pain or redness<br>- Floating spots in field of vision<br>- Sensitivity to light<br>- Can lead to permanent blindness | - Ringing in ears (tinnitus)<br>- Balance difficulties<br>- Vertigo<br>- Can lead to permanent hearing loss |

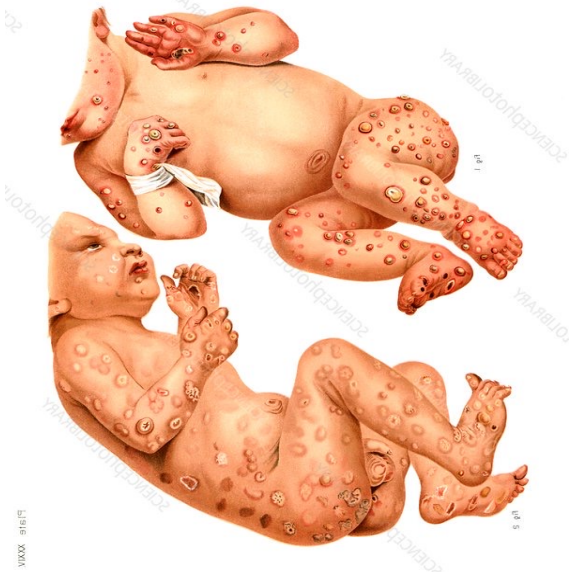
# Congenital Syphilis Transmission

| | |
|---|---|
| **How** | • Transplacental during maternal spirochetemia<br>• Direct contact with an infectious lesion during birth<br>• Not transferred into breast milk |
| **When during gestation?** | • At any time during gestation with increasing frequency as gestation advances. |
| **Transmission according to syphilis stage:** | • Primary or secondary syphilis: **60% to 90%**<br>• Early latent: **40%**<br>• Late latent syphilis: **10%** |

N Engl J Med. 1952;247(2):48.

# Congenital Syphilis

- Occurs when a pregnant person with syphilis passes the infection on to their baby during pregnancy
- Testing for pregnant people is recommended at the **first prenatal visit, during the third trimester (28 weeks), and at the time of delivery**
- Any person who delivers a **stillborn infant after 20 weeks gestation** should receive testing for syphilis
- Untreated syphilis in pregnant people results in infant death in **up to 40 percent** of cases



# Barriers to Diagnosis and Treatment of Syphilis During Pregnancy

- **Risk factors**
  - Poor access to prenatal care
  - Lack of syphilis testing during pregnancy
  - Lack of adequate treatment of confirmed syphilis during pregnancy
  - Mother coinfected with HIV
- **Social vulnerabilities**
  - Homelessness
  - Substance abuse
  - Incarceration

# Syphilis Screening Guidelines

## CDC

- Asymptomatic persons at increased risk*
- MSM - at least annually
  - Every 3 to 6 months if at increased risk
- All pregnant women at the first prenatal visit, and at 28 weeks of gestation and at delivery if at high risk**

## IHS

- **Annual syphilis testing for persons ages 13 and older**
  - For at least 2 consecutive years
- Turn on the annual Electronic Health Record reminder at all sites
- Provide three-point syphilis testing for all pregnant people

* History of incarceration or transactional sex work, residence in region with high rates, race/ethnicity with high rates, male< 29 yo

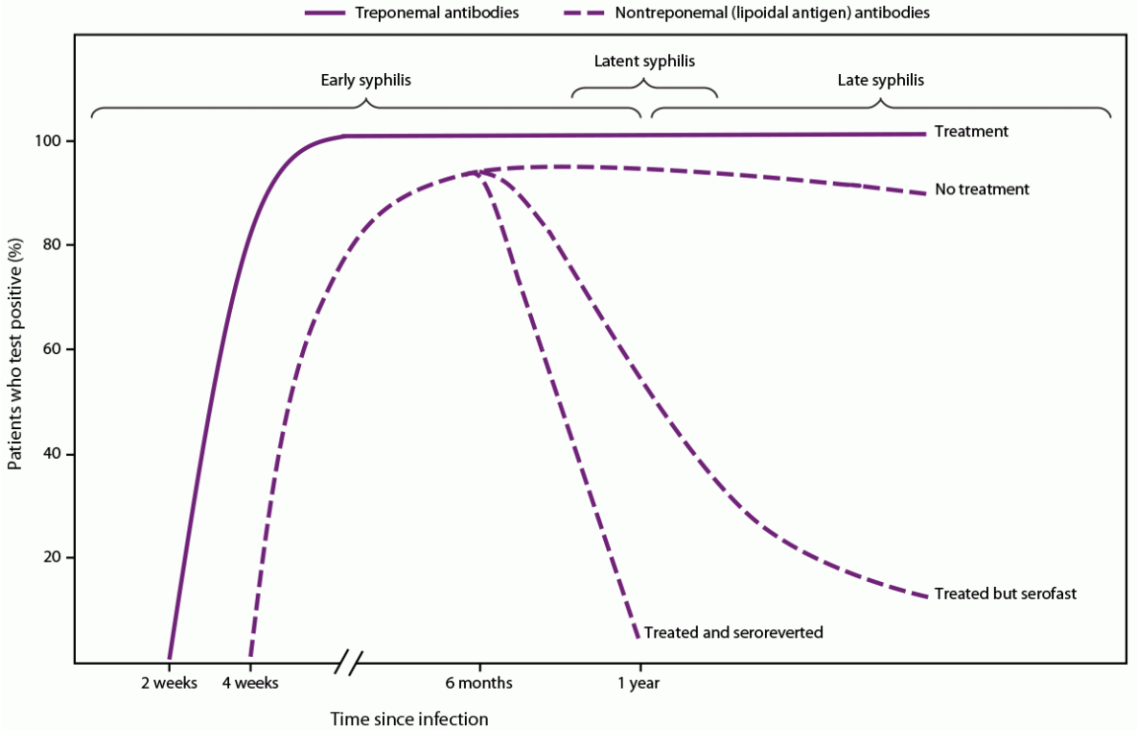
**IPatient lives in a community with high syphilis morbidity or is at risk for syphilis acquisition during pregnancy (SUD, STIs during pregnancy, multiple partners, a new partner, partner with STIs)

# Serologic Tests for Syphilis

| Nontreponemal | Treponemal |
|---|---|
| VDRL, RPR | CIE, EIA, FTA-ABS, TP-PA, rapid tests |
| Measure IgG and IgM to cardiolipin-cholesterol-lecithin antigen | Measure IgG and IgM to Treponemal antigens |
| Qualitative or quantitative | Qualitative |
| May be used as a screening test | Preferred screening test<br>More specific and sensitive than Non treponemal test |
| Titer used to follow response to therapy | Generally, remain reactive for life |

CIE: Chemiluminescent assay, Enzyme Immunoassay, FTA-ABS, Treponema Pallidum Particle-Agglutination Essay

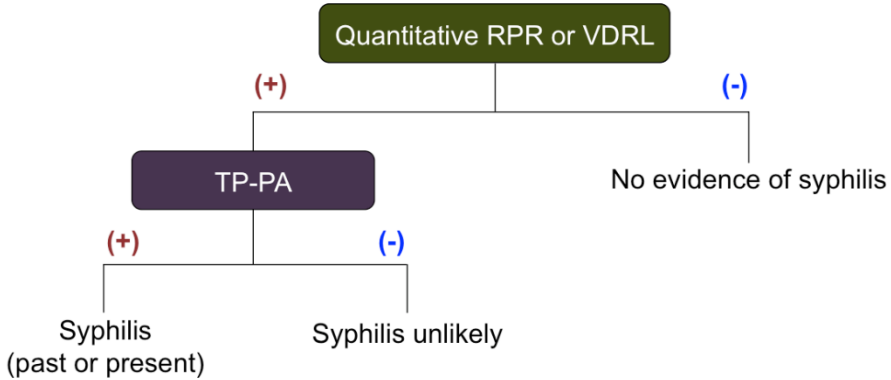
# Serologic response to infection with *Treponema pallidum*, the causative agent of syphilis




CDC Laboratory Recommendations for Syphilis Testing, United States, 2024

# Syphilis testing algorithms

## Traditional Sequence




## Reverse Sequence

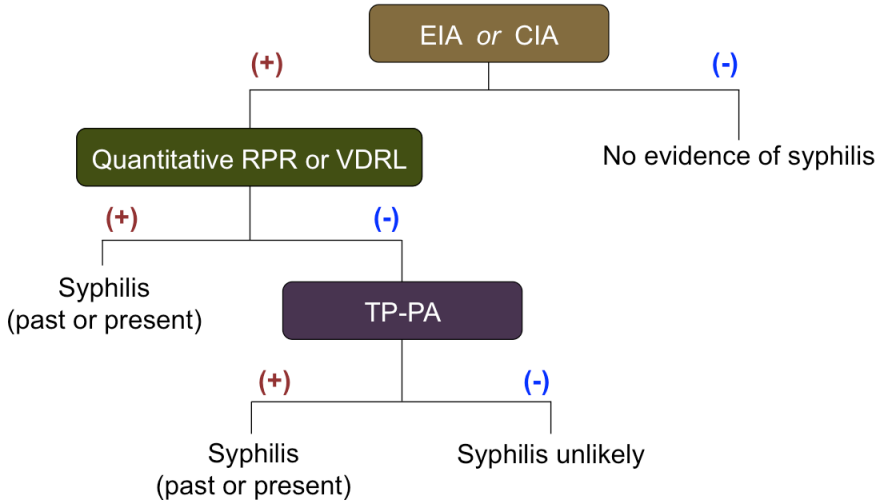


**Table 1. Sensitivity and Specificity of Serologic Tests for Syphilis**

| Test | Sensitivity during stage of infection, % (range) | | | | Specificity, % (range) |
|---|---|---|---|---|---|
| | Primary | Secondary | Latent | Late | |
| Nontreponemal tests | | | | | |
| VDRL [14] | 78 (74–87) | 100 | 96 (88–100) | 71 (37–94) | 98 (96–99) |
| TRUST [14] | 85 (77–86) | 100 | 98 (95–100) | NA | 99 (98–99) |
| RPR [14] | 86 (77–99) | 100 | 98 (95–100) | 73 | 98 (93–99) |
| Early treponemal tests | | | | | |
| MHA-TP [15] | 76 (69–90) | 100 | 97 (97–100) | 94 | 99 (98–100) |
| TPPA [16] | 88 (86–100) | 100 | 100 | NA | 96 (95–100) |
| TPHA [17] | 86 | 100 | 100 | 99 | 96 |
| FTA-ABS [14] | 84 (70–100) | 100 | 100 | 96 | 97 (94–100) |
| Enzyme immunoassays | | | | | |
| IgG-ELISA [18] | 100 | 100 | 100 | NA | 100 |
| IgM-EIA [19] | 93 | 85 | 64 | NA | NA |
| ICE [20] | 77 | 100 | 100 | 100 | 99 |
| Immunochemiluminescence assays | | | | | |
| CLIA [21] | 98 | 100 | 100 | 100 | 99 |

**NOTE.** CLIA, chemiluminescence assay; ELISA, enzyme-linked immunosorbent assay; EIA, enzyme immunoassay; FTA-ABS, fluorescent treponemal antibody absorption assay; ICE, immune-capture EIA; MHA-TP, microhemagglutination assay for *Treponema pallidum;* NA, not available; TPHA, *T. pallidum* hemagglutination assay; TPPA, *T. pallidum* particle agglutination; TRUST, toluidine red unheated serum test.

Arlene C. Seña, Becky L. White, P. Frederick Sparling, Novel *Treponema pallidum* Serologic Tests: A Paradigm Shift in Syphilis Screening for the 21st Century, *Clinical Infectious Diseases*, Volume 51, Issue 6, 15 September 2010, Pages 700–708,

# Syphilis Testing:

## Causes of Biological False Positives

### Non-Treponemal Tests *(RPR/VDRL)*

- Autoimmune disease
- Pregnancy
- Injection drug use
- Advanced age
- Other infections (HIV, HBV)
- Recent vaccination
- Chronic liver disease
- False positive occurs in 1-2% of US patients; titer usually 1:8 or less

### Treponemal Tests *(TP-AB, TPPA, EIA, CIA)*

- Autoimmune disease
- Other spirochetes
- Pregnancy
- Inflammatory disease
- Severe gingivitis
- Advanced age (>50 years),
- Tumor
- Dialysis
- Systemic infections unrelated to syphilis (TB, rickettsial diseases, endocarditis, malaria)



Rapid Plasma Reagin - StatPearls - NCBI Bookshelf (nih.gov)

# Rapid/Point-of-Care Testing

**Health Check**:

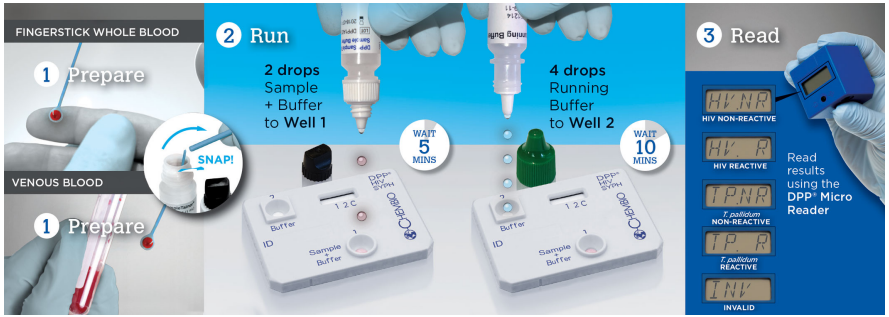
Rapid syphilis test (10 minute results)

Treponemal antibody test


**Chembio**:

Dual rapid HIV-Syphilis test (15 minute results)

HIV-1/2 antibody test / Treponemal antibody test



# Treatment

- **Rapid Treatment**
  - Treat immediately after rapid test results
- **Presumptive Treatment**
  - Symptomatic patients
  - Patients with known exposure
- **Targeted treatment**
  - Based on laboratory results

# Treatment of syphilis with Penicillin

| Stage or Presentation | | | | |
|---|---|---|---|---|
| **Primary** | **Secondary** | **Early non-primary, non secondary** | **Late Latent/ or Unknown Duration** | **Neurosyphilis, ocular syphilis and otic syphilis** |
| Benzathine penicillin 2.4 million units IM in a single dose | Benzathine penicillin 2.4 million units IM in a single dose | Benzathine penicillin 2.4 million units IM in a single dose | Benzathine penicillin 2.4 million units total administered as 3 doses of 2.4 million units IM each at 1-week intervals | Aqueous crystalline penicillin G 18-24 million units per day, administered as 3-4 million units by IV every 4 hours or continuous infusion for 10-14 days<br><br>Alternative: procaine penicillin G 2.4 million units IM 1x/day PLUS probenecid 500 mg orally 4x/day, both for 10-14 days |


https://www.cdc.gov/std/treatment-guidelines/default.htm

# As of May 2024, I H S has an adequate supply of benzathine penicillin G to treat all syphilis patients

1. Pregnant persons and HIV infected persons with syphilis as well as infants with congenital syphilis should receive priority for treatment with Benzathine penicillin G.

**Benzathine penicillin G (Bicillin L-A®) is the only recommended treatment for pregnant people infected or exposed to syphilis.**

2. Other persons with early syphilis (primary, secondary, early latent) and sexual partners should be treated with Benzathine penicillin G if supplies are adequate to cover high risk patients listed under priority #1.

3. If Benzathine penicillin G supplies are inadequate to cover patients listed as priority #2, treat early syphilis (primary, secondary, early latent) with **doxycycline 100 mg po bid for 14 days** and late latent syphilis or latent syphilis of uncertain duration with **doxycycline 100 mg po bid for 28 days.**

4. (Ceftriaxone 1 gm IV daily for 10 days may be an acceptable second-line alternate treatment for primary and secondary syphilis)

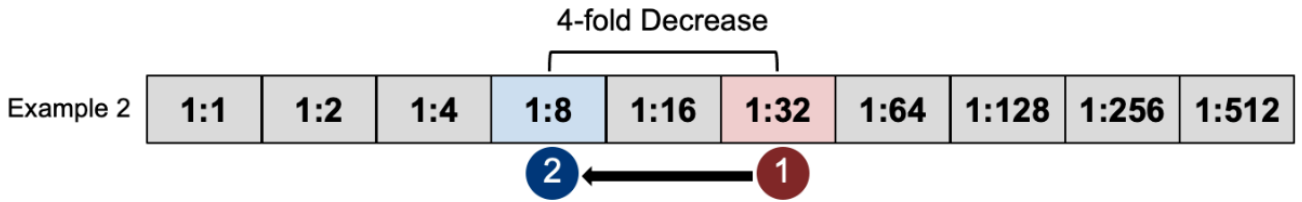
# Penicillin Allergy

- **Patients often are incorrectly labeled as allergic to penicillin**
  - Evaluate what symptoms were experienced by patients with reported penicillin allergy. Consider allergy testing.
- **Penicillin allergy causing anaphylaxis is rare**
  - In studies that have incorporated penicillin skin testing and graded oral challenge among persons with reported penicillin allergy, the true rates of allergy are low, ranging from 1.5% to 6.1%.
- **Allergies wane over time:**
  - Approximately 80% of patients with a true IgE-mediated allergic reaction to penicillin have lost the sensitivity after 10 years
- ***Desensitization is recommended for pregnant women diagnosed with syphilis followed by treatment with penicillin.***

https://www.cdc.gov/std/treatment-guidelines/STI-Guidelines-2021.pdf

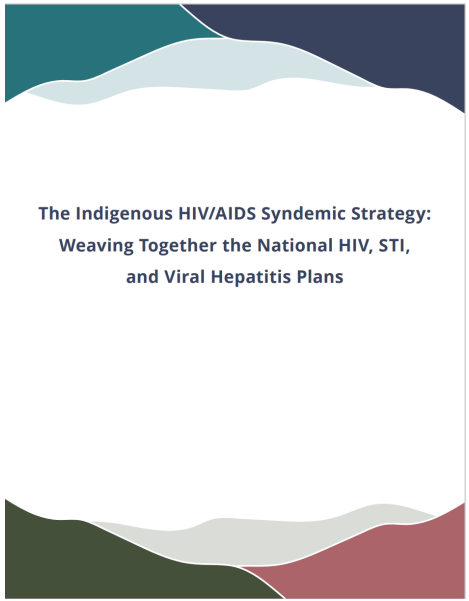
# Follow-up testing

- **Adequate serologic response to treatment: ≥4-fold decline in nontreponemal titer**
  - Early Syphilis Primary/secondary/early latent: **within 12 months**
  - Late Syphilis: Late Latent, tertiary: **within 24 months**
  - Persons with HIV: **within 24 months**
- **Serofast** (lack of seroreversion):
  - Persistent nontreponemal titer after treatment




**"Always Obtain RPR close or on the day of treatment"**

# Overlapping Epidemics: “Syndemic” Bundle for Screening



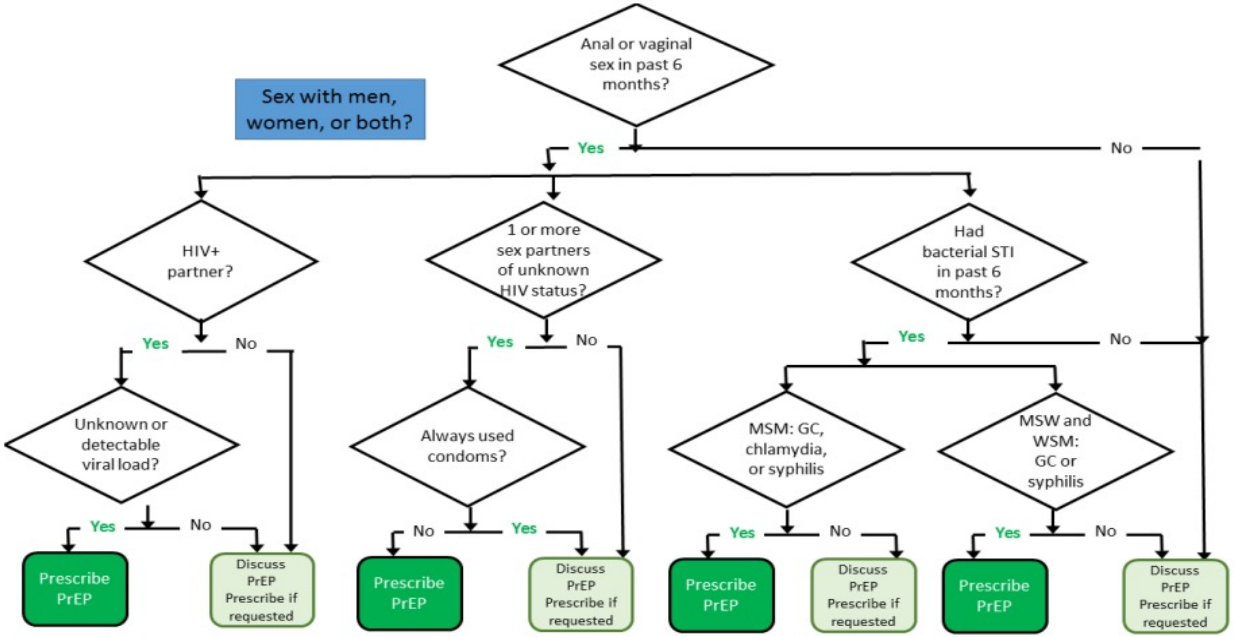

**Indian Health Service “Syndemic Bundle”**

1. Syphilis screening test with reflex RPR and TPPA
2. HIV serology (with documentation of consent if required in the local state jurisdiction)
3. Screening for gonorrhea and chlamydia at three sites: Urine, Pharynx, Rectum
4. Screening for hepatitis B and C
5. Pregnancy test

Stop-Syphilis-Letter-2-15-24.pdf (indiancountryecho.org)

https://www.indiancountryecho.org/indigenous-hiv-aids-syndemic-strategy/

# HIV Pre-exposure Prophylaxis (PrEP)




US Public Health Service: PREEXPOSURE PROPHYLAXIS FOR THE PREVENTION OF HIV INFECTION IN THE UNITED STATES – 2021 UPDATE, A CLINICAL PRACTICE GUIDELINE (cdc.gov)

# DoxyPEP

## Prevention of chlamydia, gonorrhea, and syphilis


- Take 1 dose of Doxycycline 200mg
  - < 72 hours after condomless sex

- **Who should receive DoxyPEP?**
  - Men who have sex with men (MSM)/Trans Women (TGW) on HIV PrEP or living with HIV
  - If not on HIV PrEP, MSM/TGW with history of STIs within the past 12 months, sex work, chemsex (sex under the influence of drugs)

Guidelines for the Use of Doxycycline Post-Exposure Prophylaxis for Bacterial STI Prevention (cdc.gov)

# Case 1:

**HPI:**

- 20 yo cis-gender female who has sex with cis-gender males, presents for a pregnancy test only. She reports last had oral and vaginal sex without protective barrier 3 weeks ago and had 2 partners over the past 6 months. No current signs or symptoms, and doesn't recollect any in the past year
- Never tested for HIV; last gonorrhea/chlamydia (urine only) and RPR tests were 11 months ago, all negative

**Social History:**

- Denies drug use, reports unstable housing and transportation, no regular access to phone

**Labs in Office**

- Rapid pregnancy test: **negative**
- Agrees to rapid HIV/Syphilis test in office when offered incentive
- HIV: **non-reactive**; Syphilis (treponemal antibody): **reactive**

# Case 1:
# What are the recommended next steps? (Check all that apply)

A. No further testing necessary, as initial reason for the visit (pregnancy testing) already completed

B. Draw serum HIV, test for gonorrhea and chlamydia in the urine and throat

C. Draw RPR, wait for results (~1 week) to determine treatment

D. Draw RPR and immediately administer 2.4 MU IM injection of benzathine penicillin for early latent stage syphilis

E. Draw RPR and immediately administer 2.4 MU IM injection of benzathine penicillin weekly x 3 weeks (total 7.2 MU) for late latent stage syphilis

# References


- CDC STD 2021 Treatment Guideline: https://www.cdc.gov/std/treatment-guidelines/default.htm
- STD Prevention Training Centers: https://www.cdc.gov/std/projects/nnptc.htm
- STD online self-study: https://www.std.uw.edu/
- CDC self-study: http://www.cdc.gov/std/training/std101/home.htm
- USPS Task Force: https://www.uspreventiveservicestaskforce.org/uspstf/

# Resources

- National Clinician Consultation Center http://nccc.ucsf.edu/
  - HIV Management
  - Perinatal HIV
  - HIV PrEP
  - HIV PEP line
  - HCV Management
  - Substance Use Management
- Present on ECHO
- https://hsc.unm.edu/scaetc/programs-services/echo.html
- AETC National HIV Curriculum https://aidsetc.org/nhc
- AETC National Coordinating Resource Center https://targethiv.org/library/aetc-national-coordinating-resource-center-0
- HIVMA Resource Directory https://www.hivma.org/globalassets/ektron-import/hivma/hivma-resource-directory.pdf
- Additional trainings scaetcecho@salud.unm.edu
- www.scaetc.org

# IHS/Tribal Resources

- Sexually Transmitted Infections (STI) Initiative: STI Toolkit.https://www.ihs.gov/sites/nptc/themes/responsive2017/display_objects/documents/sti/Express-STI-Guide.pdf

- https://www.indiancountryecho.org/resource-hubs/syphilis-resources/ The STOP SYPHILIS campaign offers free materials, including print materials, social media posts, and short educational videos.

- Go to www.stopsyphilis.org For questions about field testing and treatment policies and procedures, contact Tina Tah, Public Health Nursing Consultant, by e-mail at tina.tah@ihs.gov