Epidemiologic and Clinical Overview of Adult and Congenital Syphilis

Melanie Taylor MD, MPH, AAHIVM
Medical Epidemiologist
CDC Division of HIV Prevention
Assignee, Arizona Department of Health Services
Assignee, Maricopa Department of Public Health
HIV Physician, Phoenix Indian Medical Center (2011-present)

MDT7@cdc.gov

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Disclosures

None

23 yo pregnant female with rash presents in labor at 33 weeks gestation

- **HPI:** Rash on abdomen x one week. No prenatal care. She denies fever, chills, N/V/D. Reports active fetal movement
- **PMHx:** COVID in 2020 with recovery. On no medications
- **SocHx:** She is married and lives with her husband, actively uses methamphetamines.
- **PE:** gravida, diffuse maculopapular rash on abdomen and back, inguinal lymphadenopathy
- **Delivery:** Live-born infant (2,200 grams) is born despite efforts to delay labor.

23 yo pregnant female with rash presents in labor at 33 weeks gestation

- **Maternal labs obtained at delivery:** RPR 1:512, TPPA Positive, HIV positive by 4th generation testing
- **Infant:** profound anemia, hydrops fetalis, *death* at 48 hours due to circulatory collapse
- **Husband/father:** RPR 1:1024, TPPA Positive, HIV positive

- ***Screening for syphilis as part of early prenatal care may have prevented this case.***

Who should be screened for syphilis?
US Preventive Services Task Force Grade A Recommendations

- ***"The USPSTF recommends early screening for syphilis infection in all pregnant women".***
- All pregnant women are at risk. All pregnant women should be tested for syphilis as early as possible when they first present to care. If a woman has not received prenatal care prior to delivery, she should be tested at the time she presents for delivery.

- ***"The USPSTF continues to recommend screening for syphilis in nonpregnant persons who are at increased risk for infection".***
- Population: Asymptomatic, nonpregnant adolescents and adults who are at increased risk for syphilis infection

Syphilis Screening Recommendation by I H S Chief Medical Officer, October 25, 2022

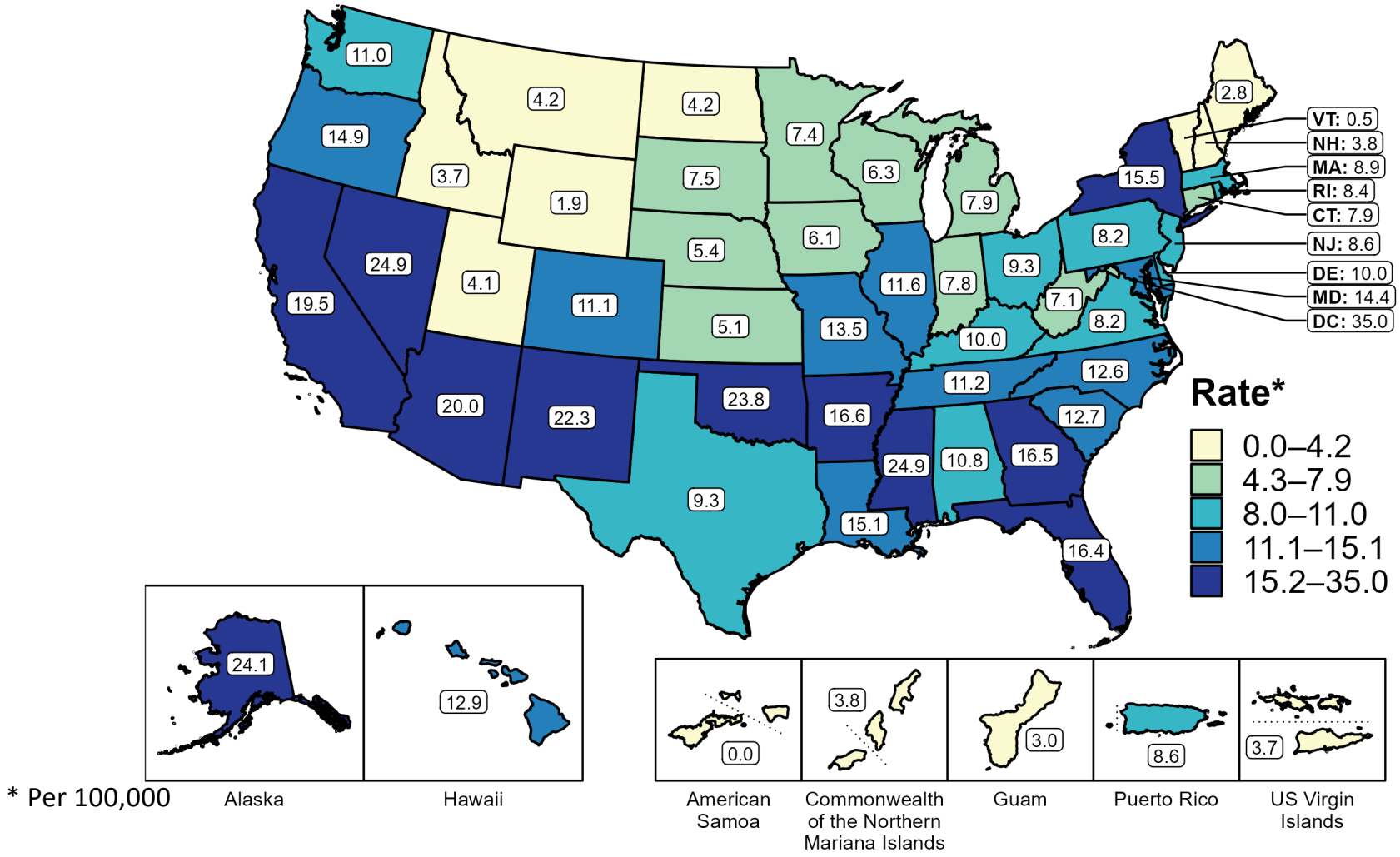
- Annual syphilis testing for persons aged 13-64 to eliminate syphilis transmission by early case recognition.
  - An annual EHR reminder should be turned on at all sites to facilitate testing for two years or until incidence rates decrease locally to baseline.
- Adoption of an STI/HIV/Viral hepatitis testing bundle at all sites to screen broadly:
  - Syphilis screening test with reflex RPR and TPPA
  - Pregnancy test
- Adoption of "Golden Ticket Testing": On-demand, no-provider/no nurse, lab visits for testing, including the above bundle
- Enhance screening rates by screening outside the hospital/clinic in the community
- Field treatments for syphilis by PHNs with Benzathine Penicillin.

Syphilis

- ***Treponema pallidum***
- Sexual, vertical, and horizontal transmission
- **Curable with penicillin**
- 4 stages

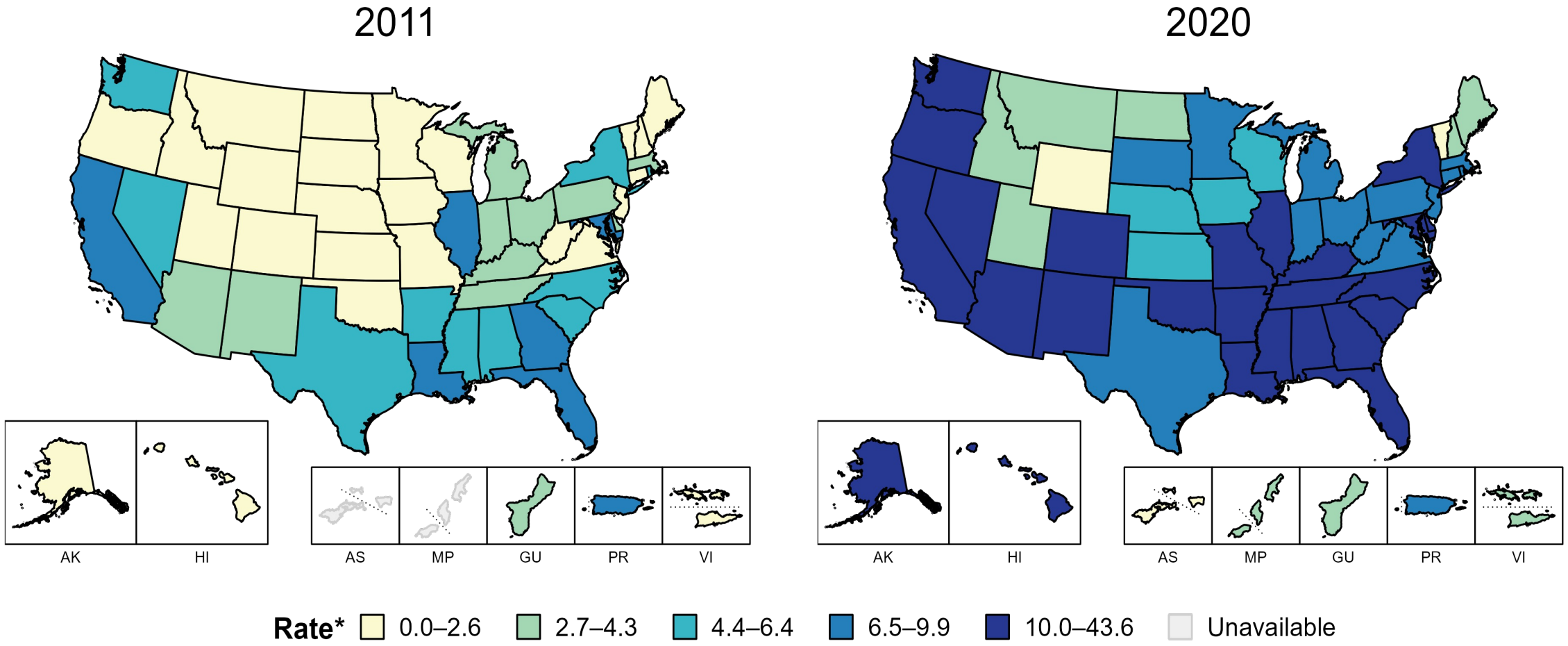
1. Primary
2. Secondary
3. Early (non-primary, non-secondary)
4. Unknown duration or late

Primary and Secondary Syphilis — Rates of Reported Cases by State, United States and Territories, 2020



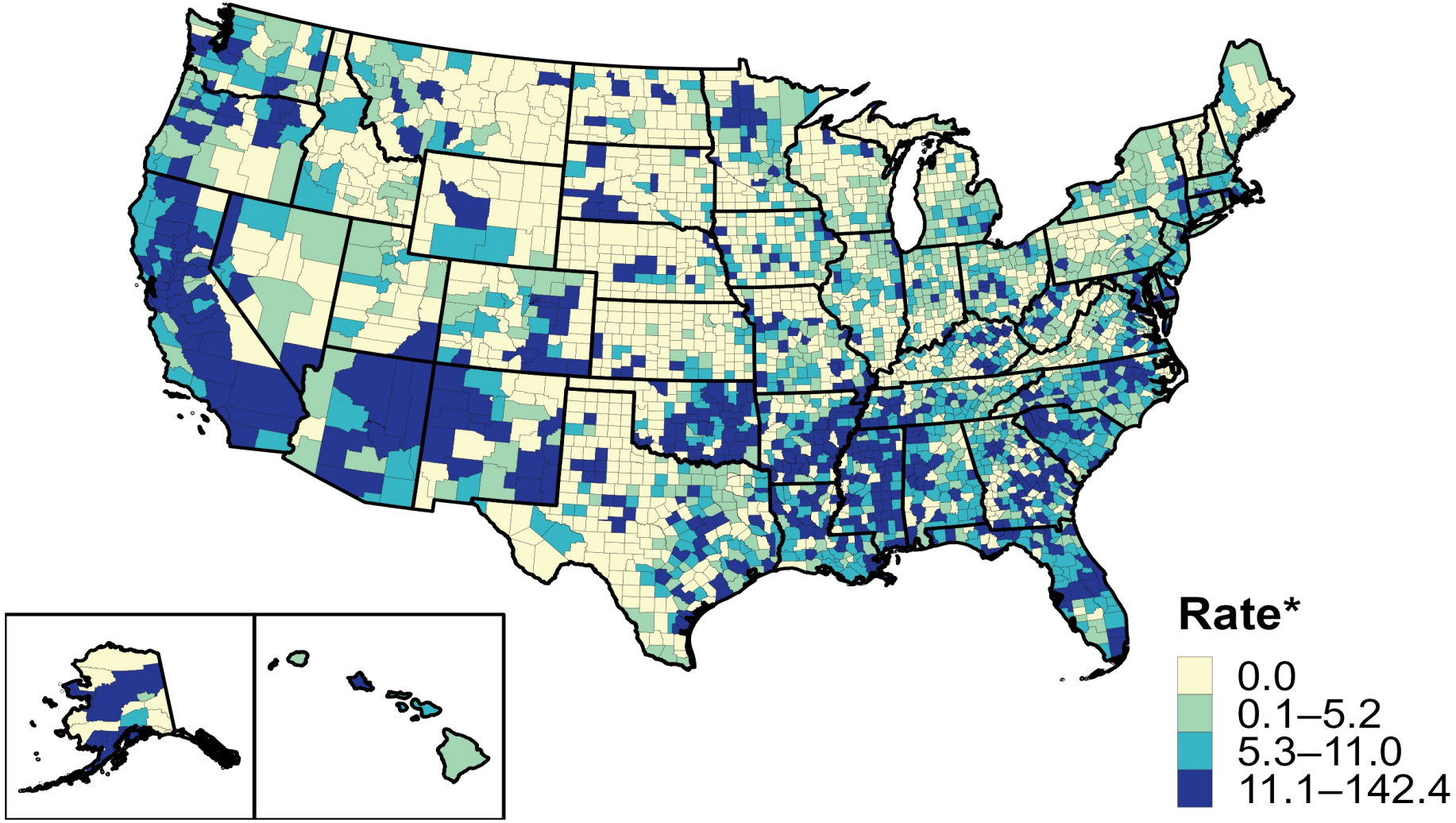
https://www.cdc.gov/std/statistics/2020/figures.htm

Primary and Secondary Syphilis — Rates of Reported Cases by State, United States and Territories, 2011 and 2020



https://www.cdc.gov/std/statistics/2020/figures.htm

Primary and Secondary Syphilis — Rates of Reported Cases by County, United States, 2020



* Per 100,000

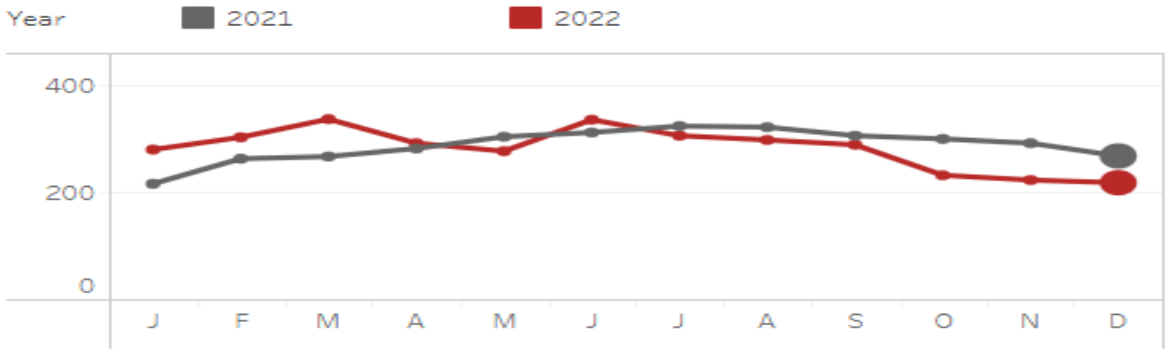
https://www.cdc.gov/std/statistics/2020/figures.htm

Syphilis in Arizona

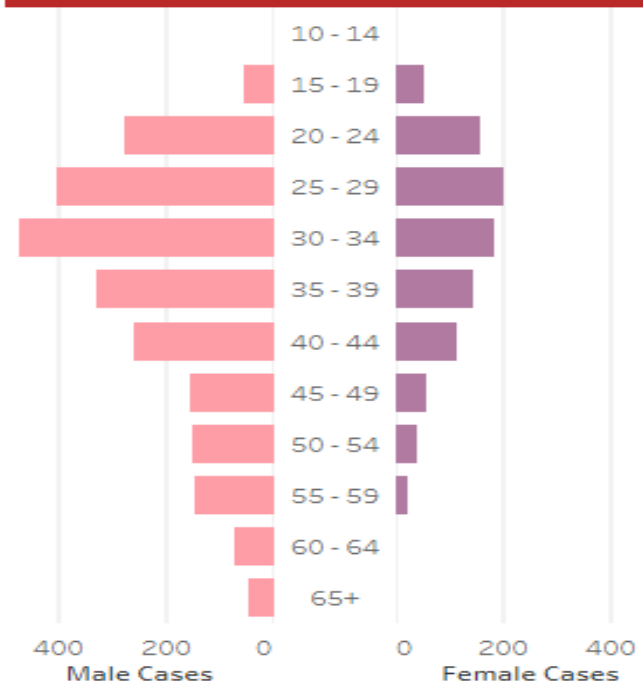
(Data as of March 2023)

Chlamydia	Gonorrhea	Syphilis
40,712 cases	16,600 cases	3,391 cases

Cases by Month and Year



Cases by Age and Gender

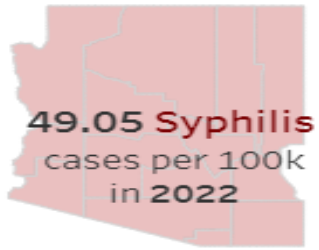


Transgender female cases (41) are included with female cases. Transgender male cases (0) are included with male cases. There are 0 unspecified transgender cases.

Cases by Race/Ethnicity

Hispanic/Latino	1,376 (40.6%)
White	853 (25.2%)
American Indian/Alaskan Native	490 (14.5%)
Black/African American	446 (13.2%)
Multi-Racial/NHPI/Other**	100 (2.9%)
Unknown	90 (2.7%)
Asian	36 (1.1%)

Incidence Rate



Cases (Syphilis): 3,381 ***
Population : 6,893,098

* Data for the most recent year may be incomplete due to reporting delays.
** Native Hawaiiaan & Pacific Islander (NHPI) populations are included in Multi Racial/Other.
*** Cases do not include values suppressed from view. Incidence rate is calculated using the number shown.

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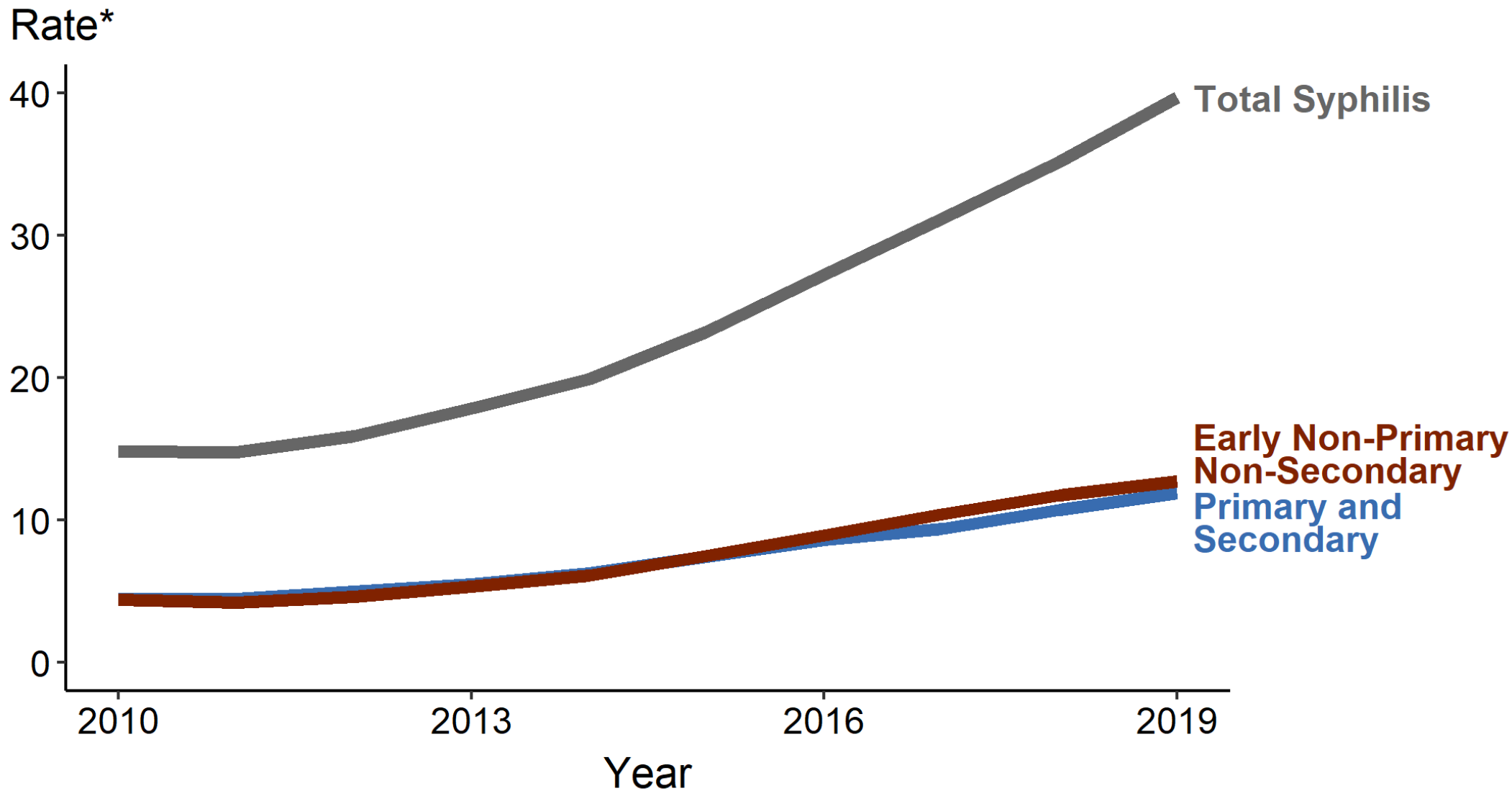
[ADHS - Sexually Transmitted Infection (STI) Control - STI Data (azdhs.gov)]

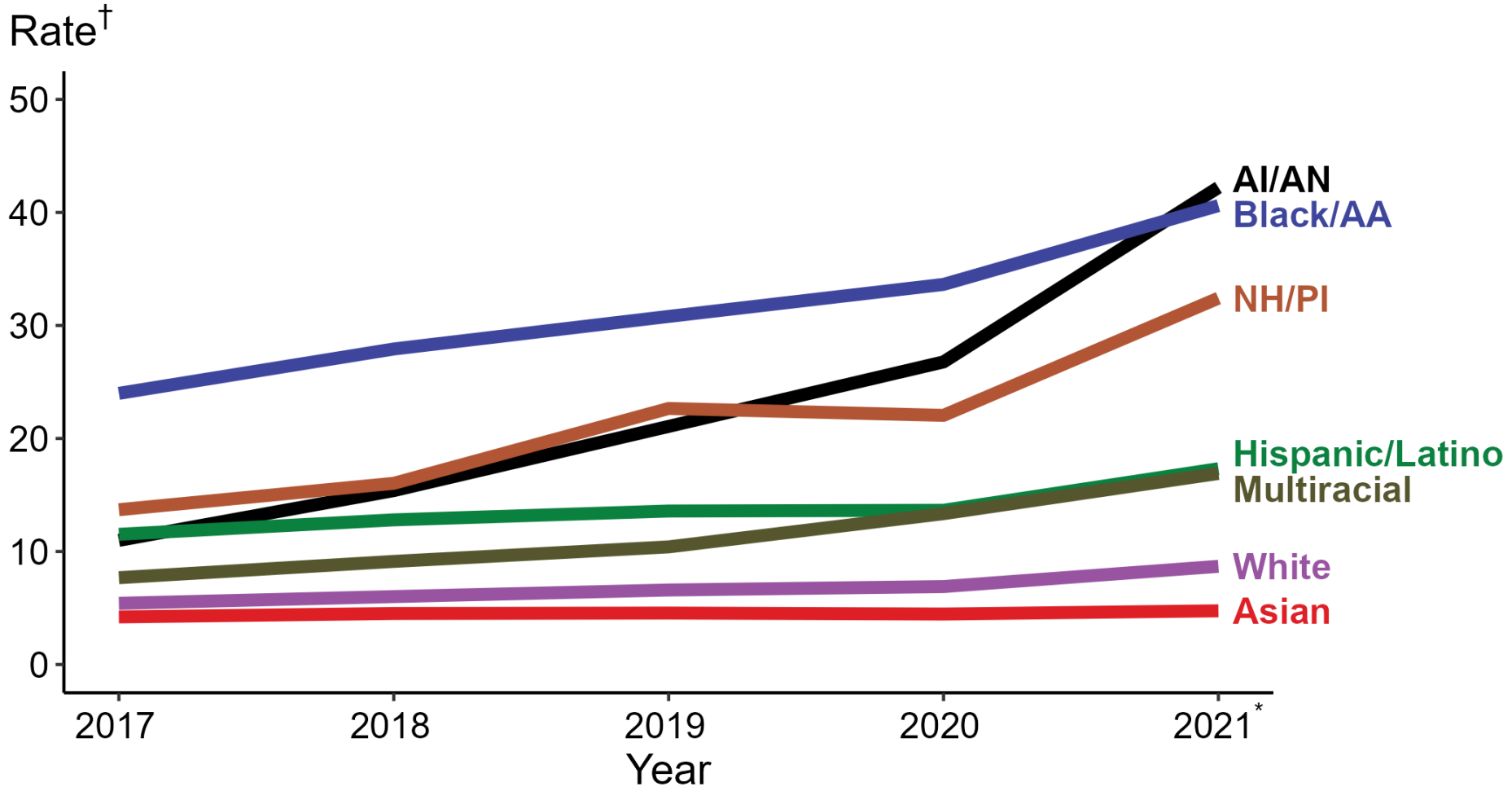
Syphilis — Rates of Reported Cases by Stage of Infection, United States, 2010–2019



Cases per 100,000 population

https://www.cdc.gov/std/statistics/2019/figures/SYPH-1.htm

Primary and Secondary Syphilis — Rates of Reported Cases by Race/Hispanic Ethnicity, United States, 2017–2021*

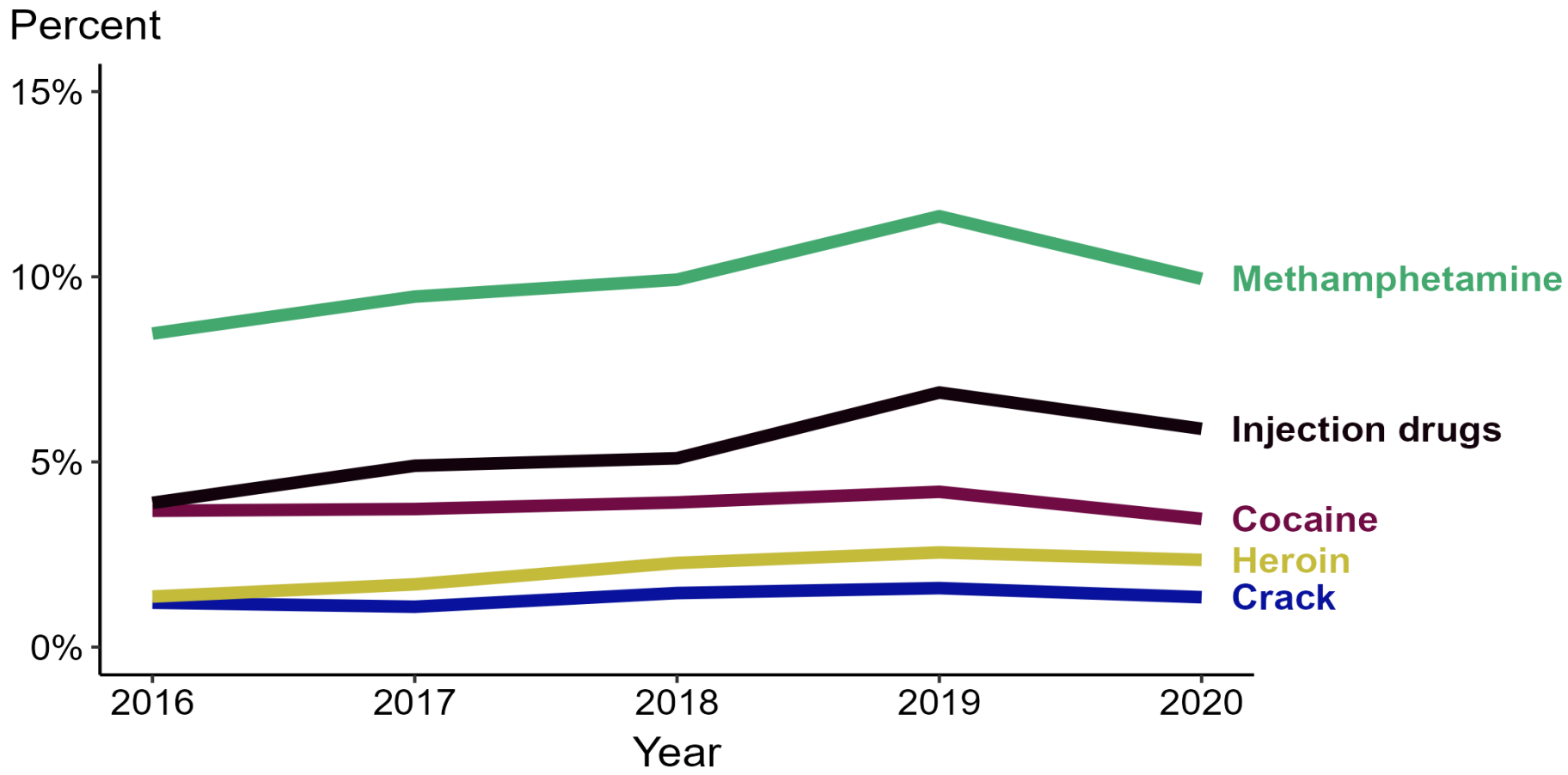


* Reported 2021 data are preliminary as of July 7, 2022: Preliminary 2021 STD Surveillance Data (cdc.gov)

† Per 100,000

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

Primary and Secondary Syphilis — Percentage of Cases Reporting Selected Substance Use Behaviors*, United States, 2016–2020



* Proportion reporting injection drug use, methamphetamine use, heroin use, crack use, or cocaine use within the last 12 months calculated among cases with known data (cases with missing or unknown responses were excluded from the denominator).

Clinical Case 1

28 yo male MSM, newly diagnosed with HIV, presents to your clinic for initial evaluation. In addition to HIV, he was diagnosed with chlamydia and has an RPR of 1:64 and a positive TPPA.

He denies prior history of syphilis and does not have any drug allergies. He remembers having a rash on his chest/abdomen and hands about 2 months ago which resolved.

He reports 6 sexual partners (both male and female) in the last 3 months

What treatment (based on staging) would you offer this patient for his syphilis results (elevated RPR and positive TPPA)?

- ❑ A. One injection of benzathine penicillin 2.4MU for his primary stage of infection
- ❑ B. One injection of benzathine penicillin 2.4MU for his secondary stage of infection
- ❑ C. One injection of benzathine penicillin 2.4MU for his early latent stage of infection
- ❑ D. Three injections of benzathine penicillin 2.4MU (one per week x 3 weeks) since he is HIV positive
- ❑ E. Treatment with doxycycline as this would also treat his chlamydia

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What additional public health case management is needed for his diagnoses?

- ❑ A. The patient should be counseled only on his risk for onward HIV transmission
- ❑ B. The patient should undergo public health interview to elicit sexual contacts for notification of and referral for their exposure to HIV, syphilis and chlamydia
- ❑ C. The patient does not need additional public health follow-up for contact tracing
- ❑ D. The patient should be expected to notify and refer all recent sexual contacts for clinical evaluation.

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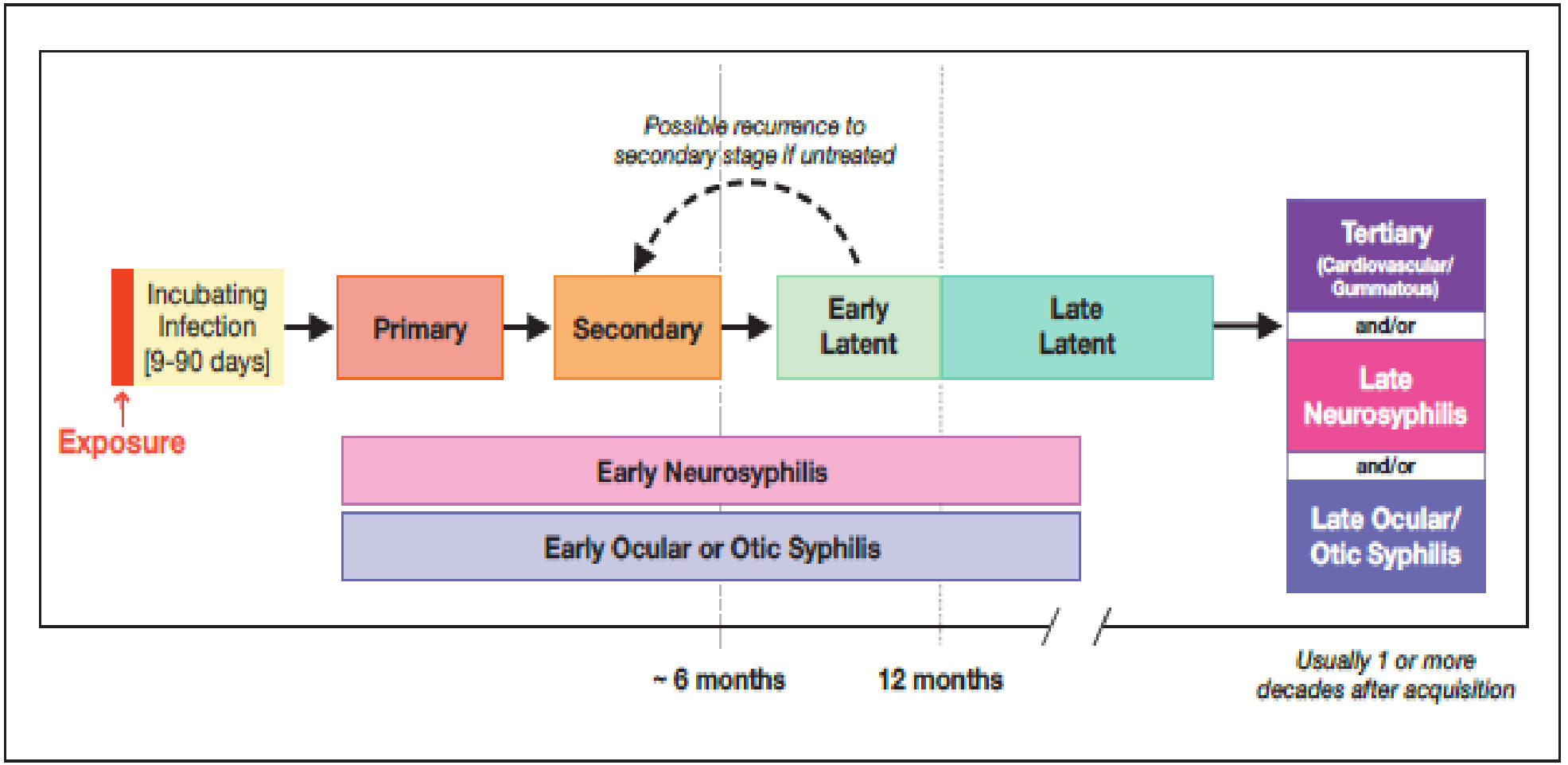
Natural History of Untreated Syphilis



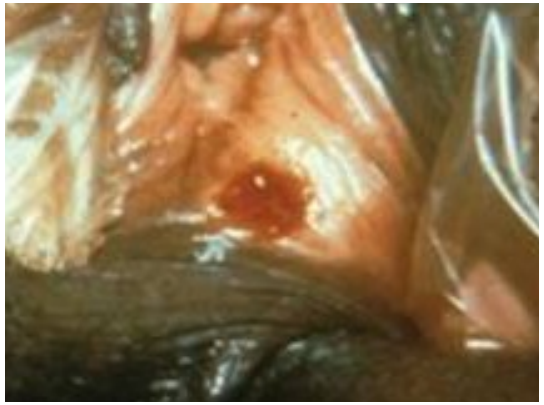
The Diagnosis, Management and Prevention of Syphilis An Update and Review. New York City Department of Health and Mental Hygiene Bureau of Sexually Transmitted Infections and the New York City STD Prevention Training Center . May 2019. https://www.nycptc.org/x/Syphilis_Monograph_2019_NYC_PTC_NYC_DOHMH.pdf

Case Definitions: Primary Syphilis

Clinical Description

Characterized by one or more ulcerative lesions (e.g. chancre), which might differ in clinical appearance.

Classic Presentation
Single painless ulcer or chancre at the site of infection
Atypical Presentation
Multiple, atypical, or painful lesions at the site of infection



Vaginal

Tongue

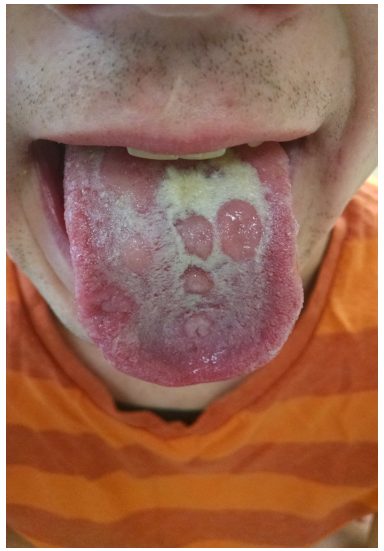
Penile

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

Case Definitions: Secondary Syphilis

Clinical Description

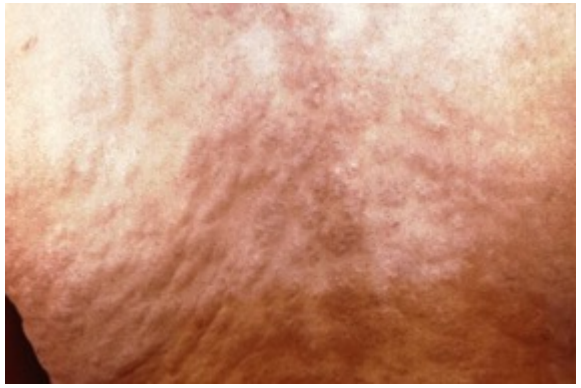
Characterized by localized or diffuse mucocutaneous lesions (e.g., rash – such as non-pruritic macular, maculopapular, papular, or pustular lesions), often with generalized lymphadenopathy. Other signs can include mucous patches, condyloma lata, and alopecia. The primary ulcerative lesion may still be present.



Mucous patches

Palmar/plantar rash

Torso/back rash



Condyloma lata

Alopecia

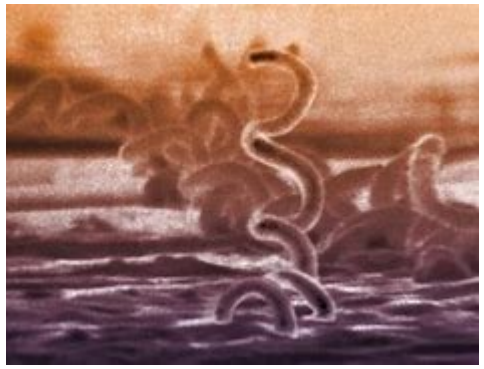
1. https://www.cdc.gov/std/syphilis/images.htm
2. https://www.cdc.gov/std/statistics/2019/case-definitions.htm

Case Definitions: Early (non-primary non-secondary)

Clinical Description

Stage of infection caused by *T. pallidum* in which initial infection has **occurred within the previous 12 months**, but there are no current signs or symptoms of primary or secondary syphilis.

Less than 12 months duration by (1) interval from prior negative syphilis test (or 4-fold titer increase) OR (2) report of symptoms consistent with syphilis within prior 12 months OR (3) sexual contact with a known case (or sexual debut) within prior 12 months



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

Case Definitions: Unknown duration or late

Clinical Description

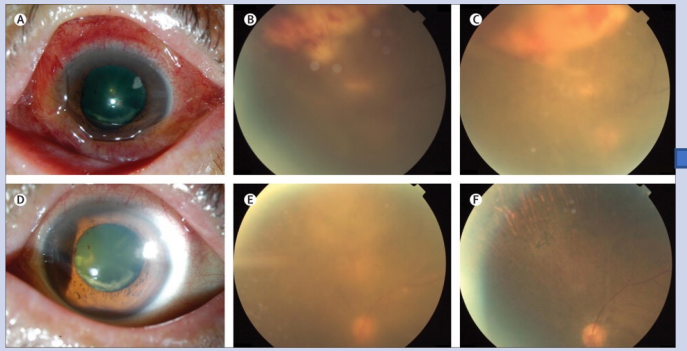
Stage of infection caused by *T. pallidum* in which initial infection has **occurred >12 months** previously or in which there is **insufficient evidence** to conclude that infection was acquired during the previous 12 months.

Unknown or greater than 12 months duration by: (1) interval from prior negative syphilis test (or 4-fold titer increase) OR (2) report of symptoms consistent with syphilis occurring > 12 months ago OR (3) sexual contact with a known case > 12 months ago (4) Neurologic, ocular, otic signs without evidence of acquiring infection in prior 12 months.

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

Neurologic manifestations can occur at any stage

Neurosyphilis	Ocular syphilis	Otosyphilis
Infection of the central nervous system with *T. pallidum,* as evidenced by manifestations including: 1. Syphilitic meningitis, 2. Meningovascular syphilis, 3. General paresis, 4. Dementia, 5. Tabes dorsalis	Infection of any eye structure with *T. pallidum.* Manifestations can involve any structure in the anterior and posterior segment of the eye including: 1. Conjunctivitis 2. Anterior uveitis 3. Posterior uveitis 4. Panuveitis 5. Posterior interstitial keratitis 6. Optic neuropathy 7. Retinal vasculitis Ocular syphilis may lead to decreased visual acuity including permanent blindness.	Infection of the cochleovestibular system with *T. pallidum,* as evidenced by manifestations including sensorineural hearing loss, tinnitus, and vertigo. Typically presents with cochleo-vestibular symptoms including 1. Tinnitus 2. Vertigo 3. Sensorineural hearing loss 4. Unilateral/Bilateral 5. Have a sudden onset 6. Progress Rapidly Otic syphilis can result in permanent hearing loss



https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(13)70198-1/fulltext

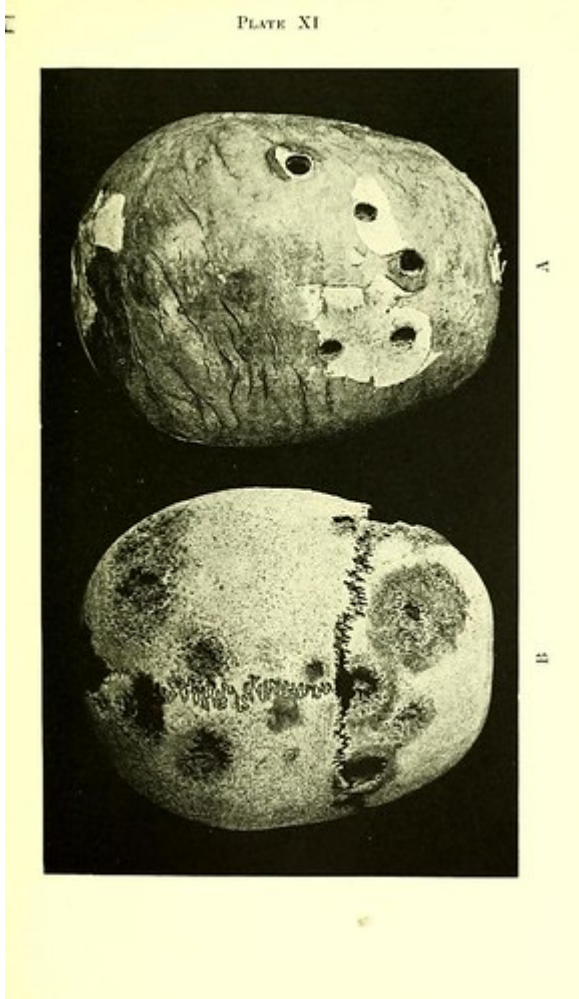
https://www.cdc.gov/std/statistics/2019/case-definitions.htm)

Late Clinical Manifestations/Tertiary Syphilis

Clinical description

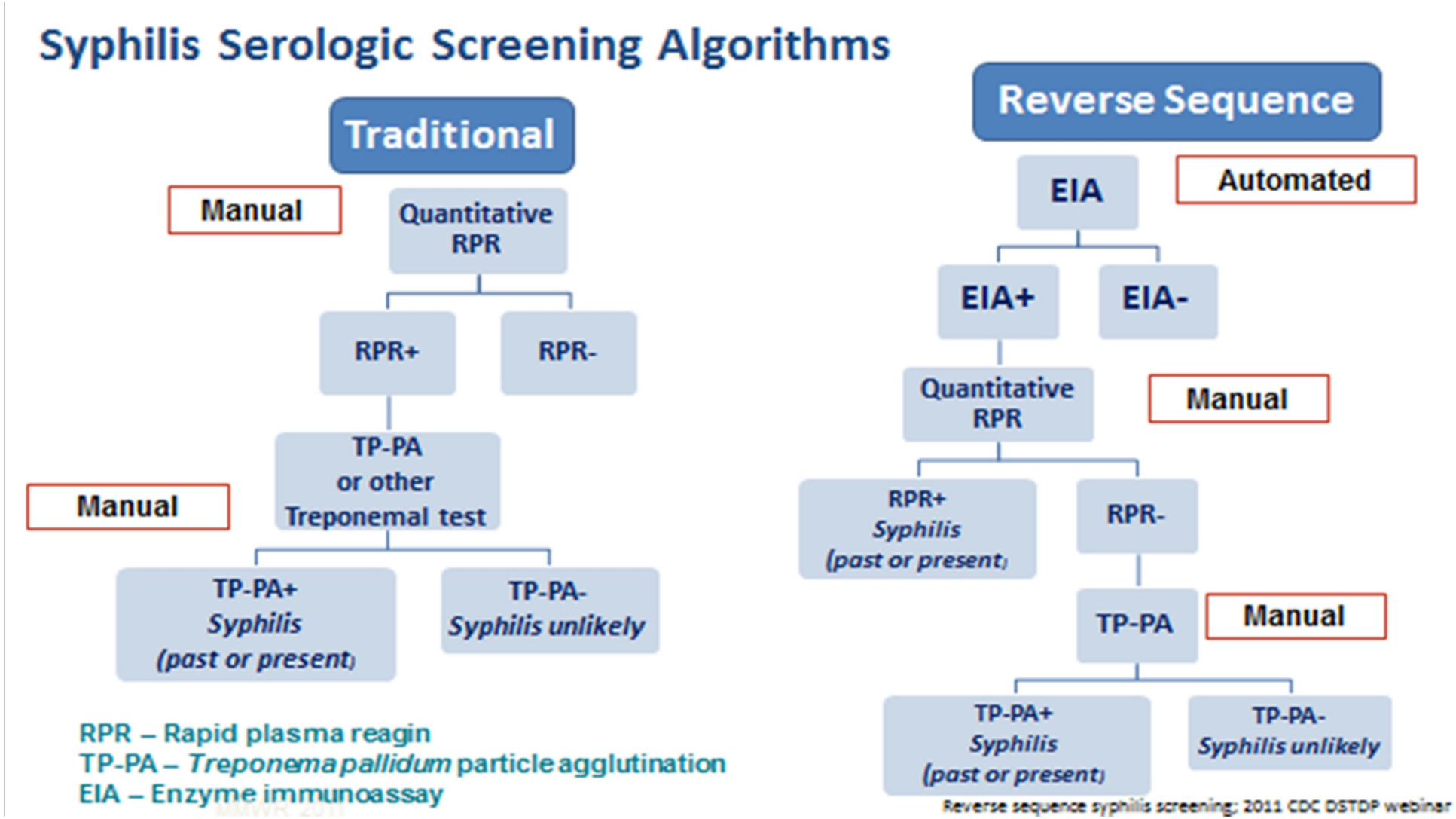
Late clinical manifestations of syphilis (tertiary syphilis) may include inflammatory lesions of:

1. Cardiovascular system (e.g., aortitis, coronary vessel disease),
2. Skin (e.g., gummatous lesions),
3. Bone (e.g., osteitis),
4. Other structures including the upper and lower respiratory tracts, mouth, eye, abdominal organs, reproductive organs, lymph nodes, and skeletal muscle)
5. Neurologic manifestations (e.g., general paresis and tabes dorsalis)



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

Serologic Diagnosis of Syphilis



Clinical Case 2

31 yo female presents to clinic for a routine PAP smear. On physical exam, the medical provider notices two painless ulcers on opposing sides of her labia minora.

The patient reports sexual contact only with her husband. Three weeks ago she noticed that he had a large ulcer at the base of his penis. They do not use condoms

Her last menstrual period was two months ago. She has no drug allergies. A rapid fingerstick syphilis treponemal test is positive

What would be the optimal treatment of this patient in clinic today?

- ❑ A. Test her for pregnancy, syphilis, HIV, and other STIs. Call her with results in one week and ask her to return to clinic if treatment is needed
- ❑ B. Give her presumptive treatment for syphilis now with one injection of benzathine penicillin 2.4 MU. Test her for pregnancy. Test her for HIV, and other STIs. Refer her case to PHN for contact tracing.
- ❑ C. Counsel her on the need to have her partner tested first to identify possible exposure to syphilis or herpes
- ❑ D. Refer her to an STD specialty clinic for testing

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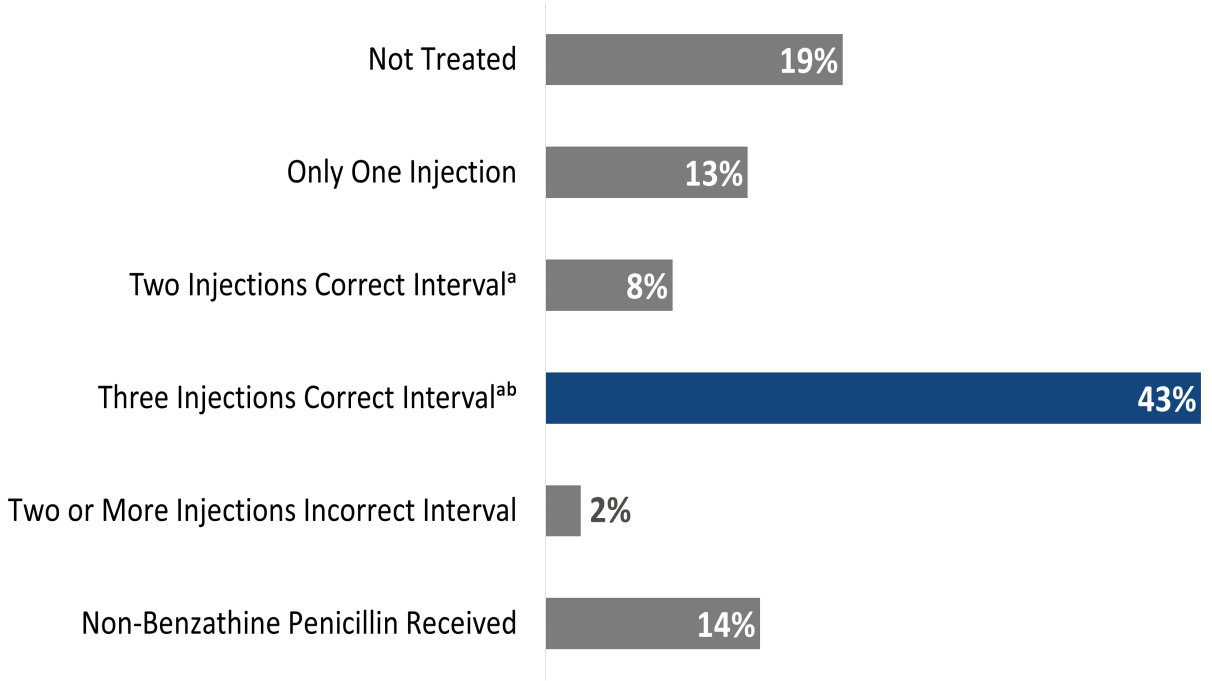
Treatment of syphilis: Overview

Stage				
Primary	**Secondary**	**Early non-primary, non secondary**	**Late Latent/ or Unknown Duration**	**Neurosyphilis, ocular syphilis and otosyphilis**
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 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

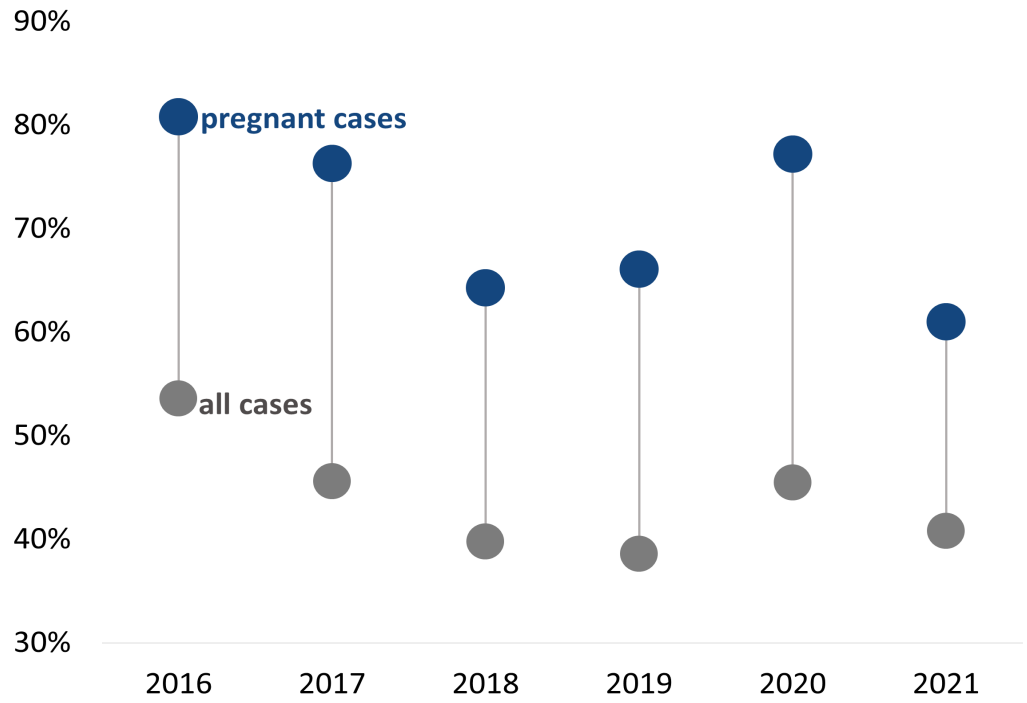
Syphilis Treatment Compliance: Benzathine Penicillin Treatment Rates Among People with Late Latent and Unknown Duration Syphilis in Maricopa County, Arizona

The treatment completion rate for **all 3 injections of benzathine penicillin G was 43%** at 7-9 days between doses from 2016-2021 (n = 5,372 cases).



[a]Validated: Captures Communicable Disease Investigator (CDI) documentation of each individual injection
[b]Non-validated: Captures CDI documentation of patient reported "3 injections with benzathine penicillin at 1 week intervals" from 2016-2019

The treatment completion rate for all 3 injections of benzathine penicillin G at 7-9 days between doses was higher among **pregnant cases** when compared to **all cases**.

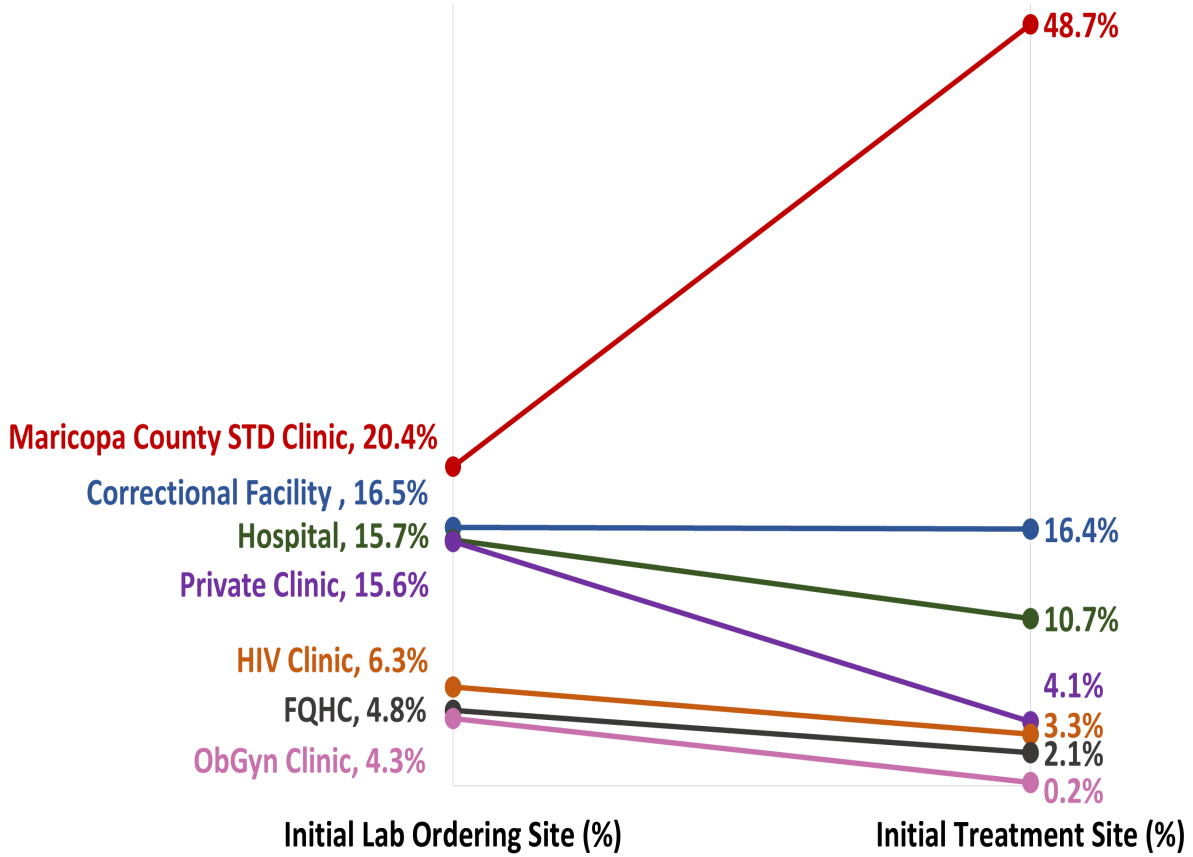


Bell J, Mangone E, et al. Abstract. 2022 CDC National STD Prevention Conference, September 2022

Access to benzathine penicillin for syphilis patients, Maricopa County, AZ 2021 (n = 2977)

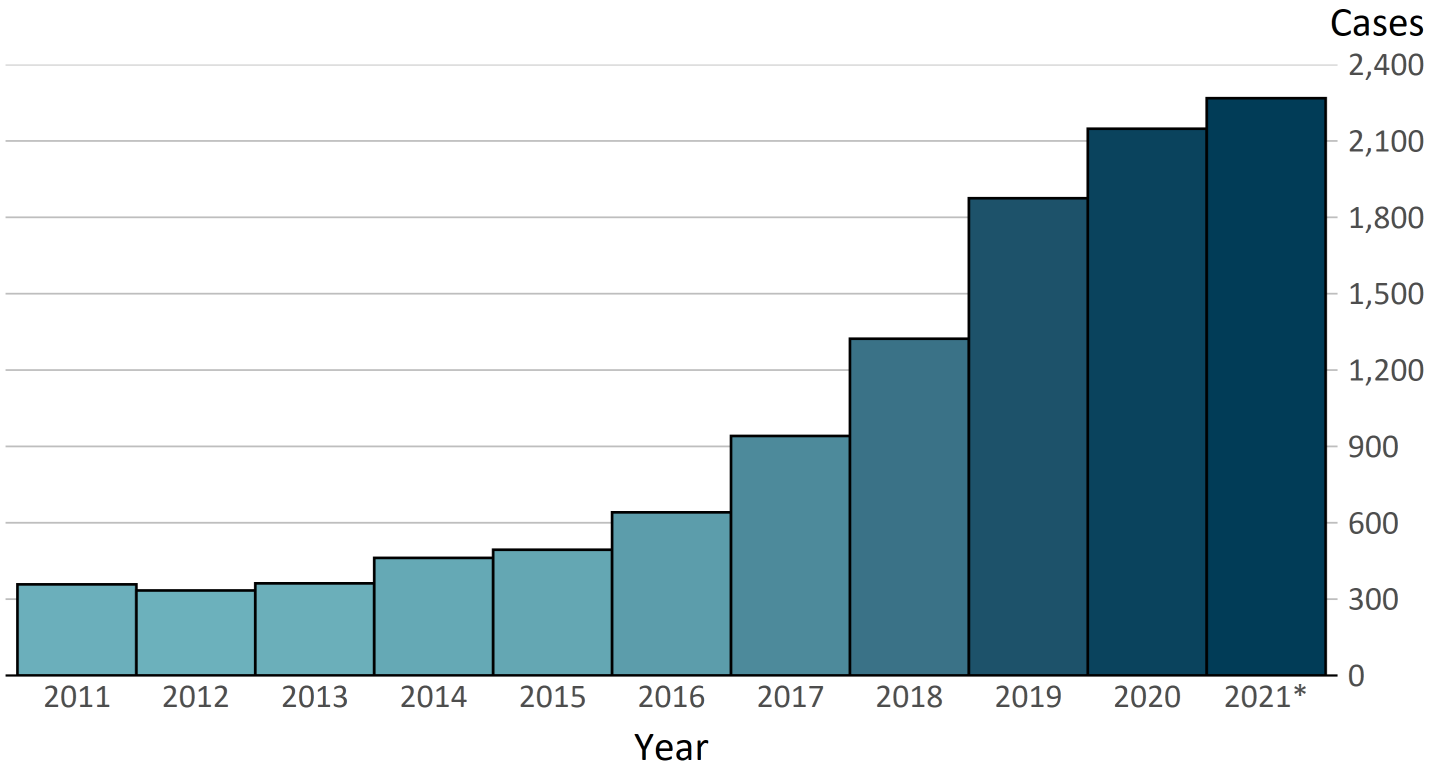
Site Category	Initial Lab Ordering Site (n)	Initial Lab Ordering Site AND Initial Treatment Site (n)	Proportion (%)
Maricopa County STD Clinic	607	594	98%
Correctional Facility	492	466	95%
Hospital	468	196	42%
Private Clinic	434	97	22%
HIV Clinic	200	100	50%
FQHC	145	49	34%
ObGyn	129	6	**5%**
Hospital ER/Urgent Care	126	15	12%
Indian Health Service	115	105	91%
Community Health Center	58	50	86%
Laboratory	55	0	0%
Blood Bank	37	0	0%
Mental Health	35	7	20%
Military	32	24	75%
Family Planning/Planned Parenthood	16	10	63%
Drug Treatment	16	1	6%
School based Clinic	9	8	89%
Other Health Department	3	3	100%

Among syphilis cases that received penicillin as initial treatment (n = 2,977), **Maricopa County STD Clinic treated nearly 50%** despite only serving as the initial lab ordering site for 20% of cases.



Mangone E, Bell J. Abstract. 2022 American Public Health Association Conference, November 2022.

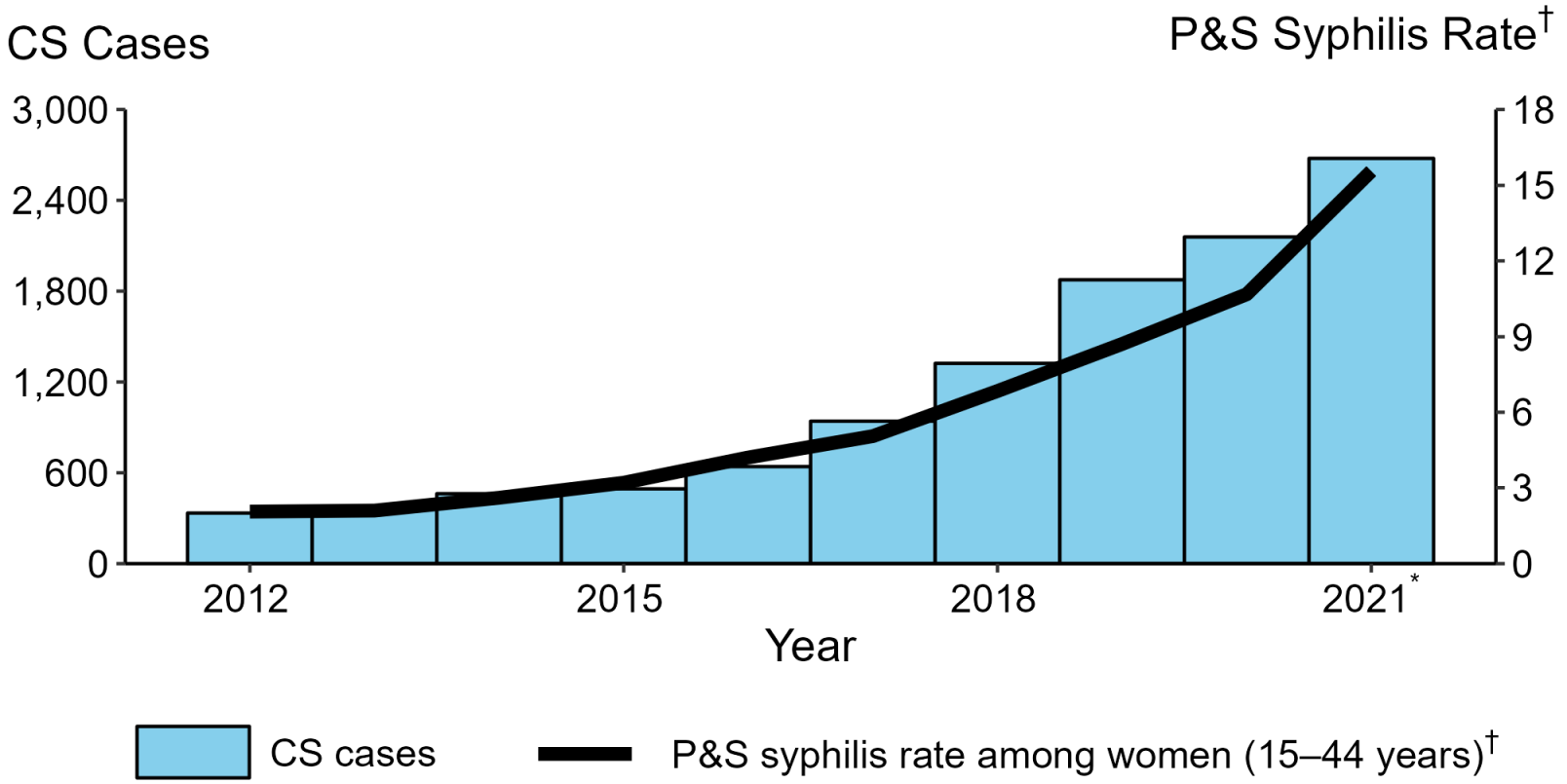
In the United States, 2,268 infants born in 2021* have already been reported as cases of congenital syphilis



* Reported 2021 congenital syphilis data are preliminary as of March 9, 2022.

Congenital Syphilis — Reported Cases by Year of Birth, United States, 2011–2021*

Congenital Syphilis — Reported Cases by Year of Birth and Rates of Reported Cases of Primary and Secondary Syphilis Among Women Aged 15–44 Years, United States, 2012–2021*

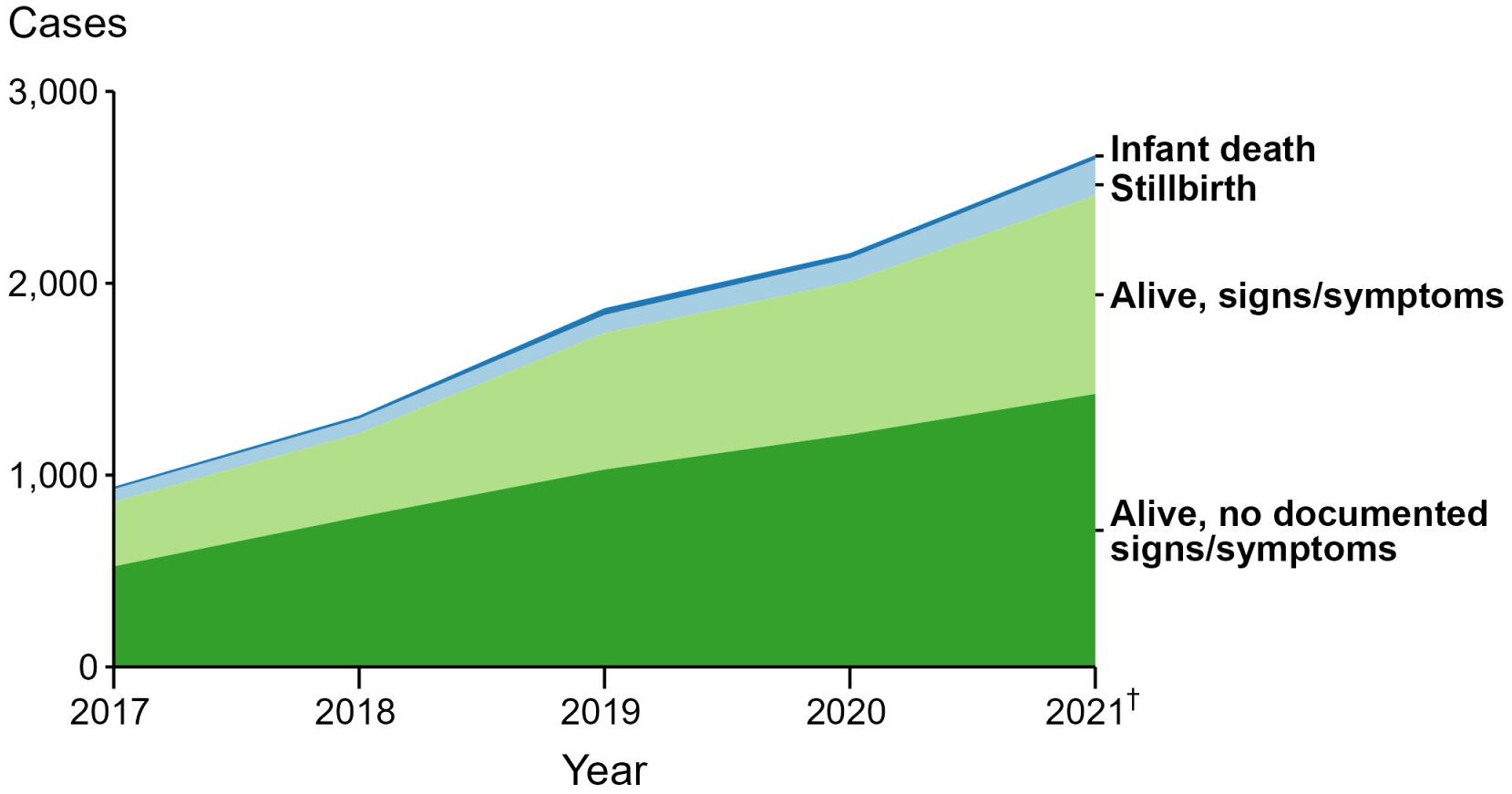


* Reported 2021 data are preliminary as of July 7, 2022

† Per 100,000

ACRONYMS: CS = Congenital syphilis; P&S = Primary and secondary syphilis

Congenital Syphilis — Reported Cases by Vital Status and Clinical Signs and Symptoms* of Infection, United States, 2017–2021†

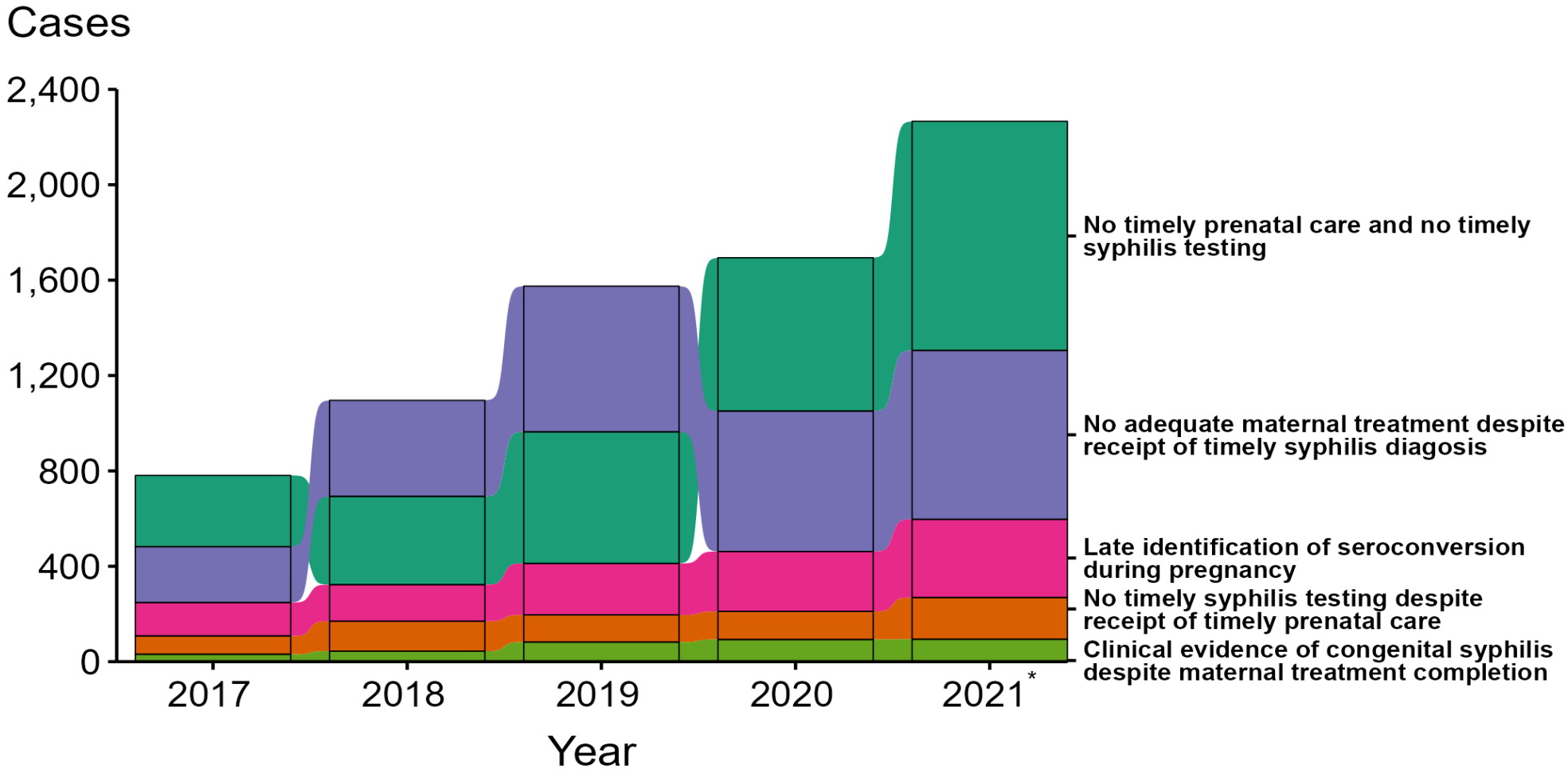


* Infants with signs/symptoms of congenital syphilis have documentation of at least one of the following: long bone changes consistent with congenital syphilis, snuffles, condyloma lata, syphilitic skin rash, pseudoparalysis, hepatosplenomegaly, edema, jaundice due to syphilitic hepatitis, reactive CSF-VDRL, elevated CSF WBC or protein, or evidence of direct detection of *T. Pallidum*.

† Reported 2021 data are preliminary as of July 7, 2022

NOTE: Of the 8,974 congenital syphilis cases reported during 2017 to 2021, 30 (0.3%) did not have sufficient information to be categorized.

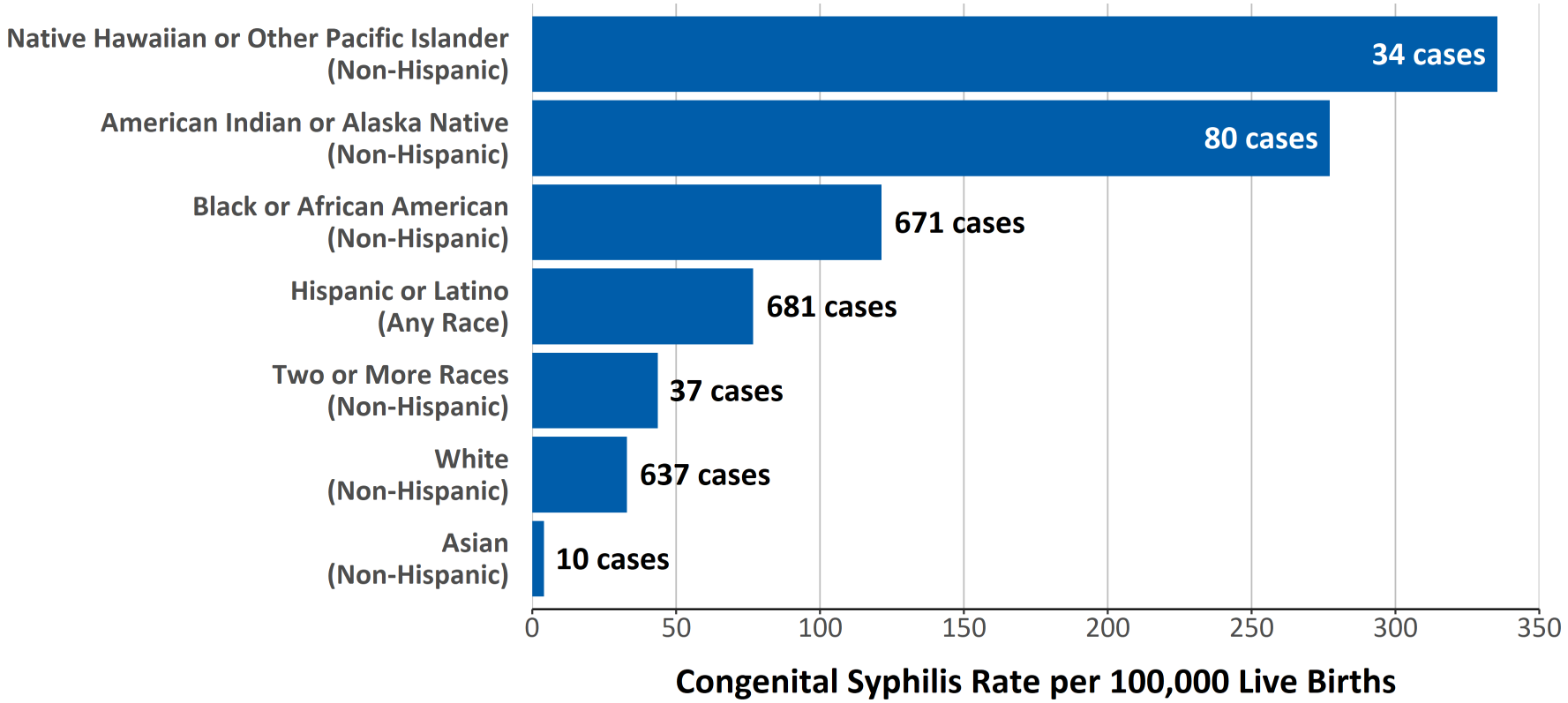
Congenital Syphilis — Missed Prevention Opportunities among Mothers Delivering Infants with Congenital Syphilis, United States, 2017–2021*



* Reported 2021 data are preliminary as of July 7, 2022

NOTE: Of the 8,974 congenital syphilis cases reported during 2017 to 2021, 1,562 (17.4%) were not able to have the primary missed prevention opportunity identified due to insufficient information provided to CDC related to maternal prenatal care, testing, or treatment.

Racial and ethnic disparities in rates of reported congenital syphilis continued to persist in 2021*

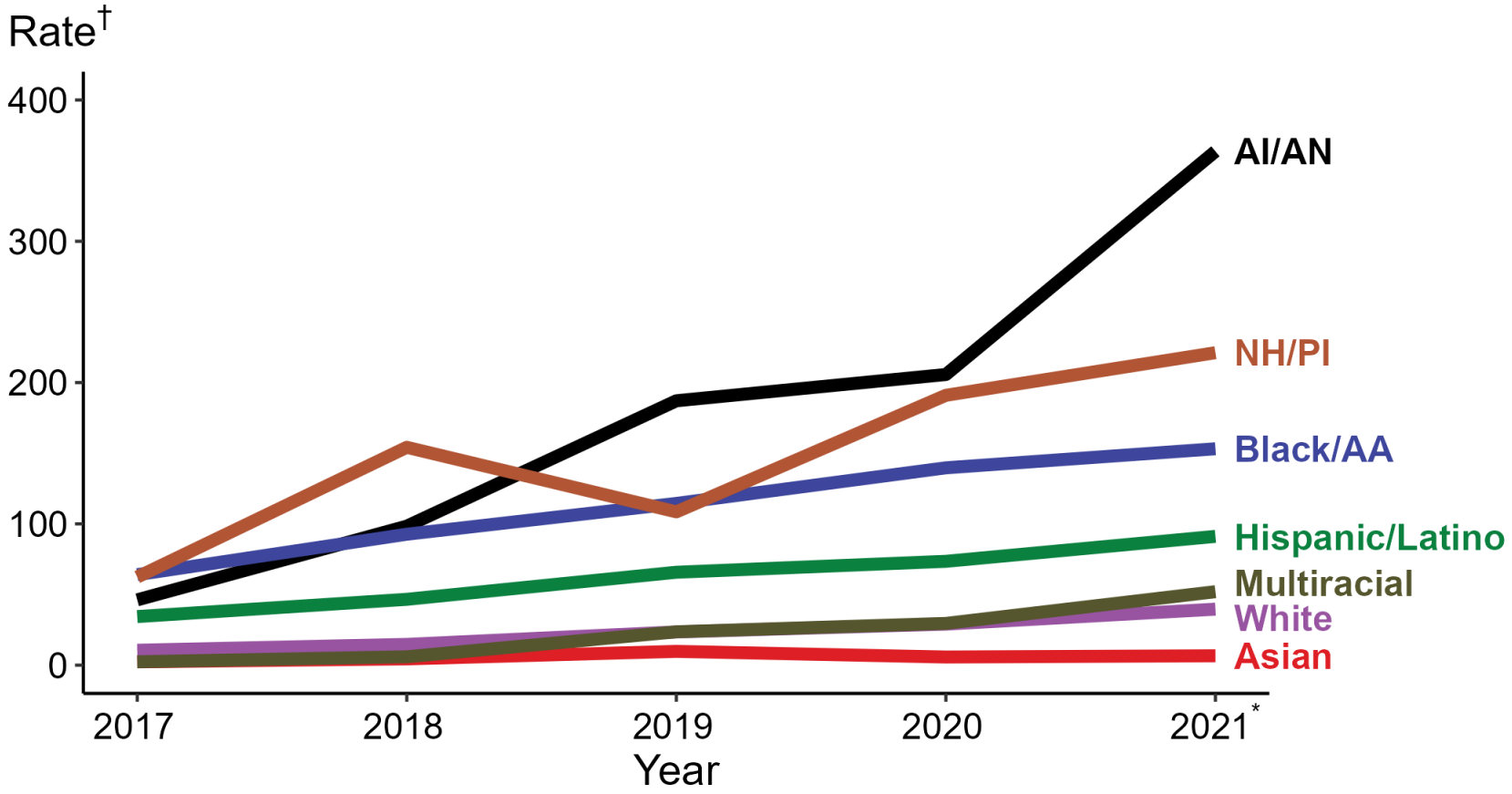


* Reported 2021 congenital syphilis data are preliminary as of March 9, 2022.

NOTE: In 2021, 118 cases (5.2%) were missing reported race and/or hispanic ethnicity.

Congenital Syphilis — Case Counts and Rates of Reported Cases by Race and Hispanic Ethnicity, United States, 2021*

Congenital Syphilis — Rates of Reported Cases by Year of Birth, Race/Hispanic Ethnicity of Mother, United States, 2017–2021*



* Reported 2021 data are preliminary as of July 7, 2022

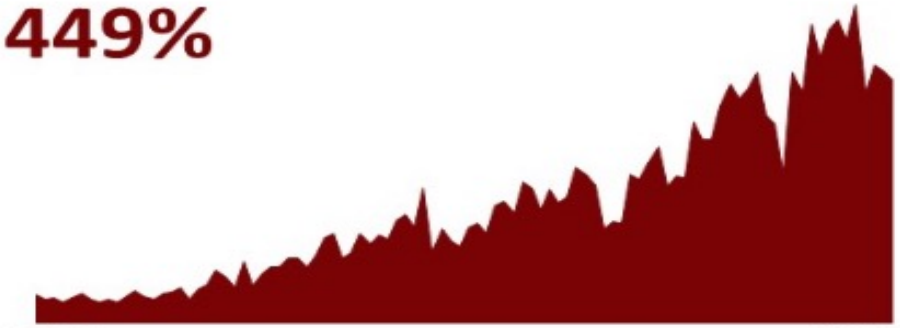
† Per 100,000 live births

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

Arizona has an outbreak of syphilis among women and babies

Since 2015, the yearly average of **syphilis** cases in women has increased

449%



Jan. 2015 Dec. 2022

How can you **protect** yourself?

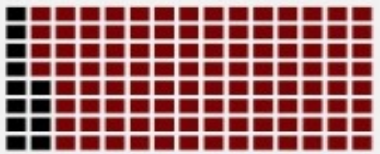
- **Use condoms** when having **ANY** type of sex
- **Reduce** number of sexual partners
- **Get tested** for STDs

2016 - 2019

The number of babies born with **syphilis doubled each year.**

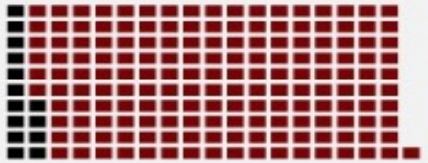
2020

Of the **120 babies born with syphilis** in 2020, **12 died.**



2021

Of the **181 babies born with syphilis** in 2021, **14 died.**



Syphilis can lead to problems with the skin, eyes, and brain, **stillbirth, or infant death.**

Up to **40%** of untreated syphilitic pregnancies result in **stillbirth or newborn death**[1]

Babies who survive spend about **10 days** in the hospital

77% of babies were symptomatic in 2019.

[1] Centers for Disease Control and Prevention. "STD Facts – Congenital Syphilis" [Online]Available: https://www.cdc.gov/std/syphilis/stdfact-congenital-syphilis.htm

Infographic Updated: 3/16/2023 – Case counts from the current year may change as the data are still pending. There is a 3 month lag in this report to help ensure accurate counts.

ARIZONA DEPARTMENT OF HEALTH SERVICES

https://www.azdhs.gov/preparedness/epidemiology-disease-control/disease-integration-services/std-control/congenital-syphilis/index.php

Clinical Case 3

23 yo pregnant female (G1P0) presents for her first prenatal visit. She denies symptoms other than morning sickness. Her EGA is 10 weeks

She has no other medical conditions. She is allergic to penicillin which causes throat swelling.

Her prenatal labs reveal a positive syphilis EIA and an RPR of 1:512. She denies recent symptoms of syphilis and she is no longer in contact with her sexual partner. Her last sexual encounter was 3 weeks ago.

She lives 40 miles away and used medical transport to get to clinic today.

What is the ideal clinical management for this patient with syphilis?

- ❑ Administer benzathine penicillin 2.4 MU now as she is unlikely to be truly allergic to penicillin.
- ❑ Begin treatment with doxycycline 100 mg BID as an alternative regimen for treatment of syphilis since she is allergic to penicillin
- ❑ Ask her to return to clinic at her convenience for penicillin desensitization and treatment
- ❑ Admit her to the hospital for penicillin desensitization followed by the first injection of benzathine penicillin 2.4 MU of a 3 weekly dose series.
- ❑ Retest her for syphilis as test results may be false positive since she is pregnant

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Penicillin Allergy

- Patients often are incorrectly labeled as allergic to penicillin
  - Evaluate what symptoms were experienced by patients with reported penicillin allergy

- 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 . Page

Clinical Manifestations of Congenital Syphilis (CS)

https://www.cdc.gov/ncbddd/birthdefects/surveillancemanual/quick-reference-handbook/congenital-syphilis.html

Scenario 1: Confirmed, proven or highly probable congenital syphilis	Scenario 2: Possible congenital syphilis	Scenario 3: Congenital syphilis less likely	Scenario 4: Congenital syphilis unlikely
Neonate with: • a physical exam consistent with CS • serum quantitative nontreponemal serology 4-fold greater than mother's or • a positive darkfield or PCR test of placenta, body fluids or positive silver stain of placenta or cord	**Neonate with** a normal physical exam and a serum quantitative nontreponemal serologic titer equal to or < 4-fold of the maternal titer at delivery and **one** of the following: • The mother was not treated, was inadequately treated, or has no documentation of treatment. • The mother was treated with erythromycin or a regimen not recommended in these guidelines • The mother received recommended regimen but treatment was initiated <30 days before delivery.	**Neonate with** a normal physical examination and a serum quantitative nontreponemal serologic titer equal or <4-fold of the maternal titer at delivery and **both** of the following are true: • The mother was treated during pregnancy, treatment was appropriate for the infection stage, and the treatment regimen was initiated ≥30 days before delivery. • The mother has no evidence of reinfection or relapse	**Neonate with:** • a normal physical exam • serum quantitative nontreponemal serology equal to or less than 4-fold mother's at delivery and • Mother's treatment was adequate before pregnancy • Mother's nontreponemal titer remained low and stable before and during pregnancy and at delivery
Evaluation: CSF with VDRL, cell ct, protein, CBC/diff, long bone radiographs, neurologic eval (eye, auditory, imaging)	CSF analysis for VDRL, cell count, and protein** CBC, differential, long-bone radiographs	No evaluation is recommended	No evaluation is recommended
Treatment: **Aqueous crystalline penicillin G** 100,000–150,000 units/kg/body wt./day, administered as 50,000 units/kg body wt./dose IV q 12 hours during the first 7 days of life and q 8 hours thereafter for a total of 10 days OR **Procaine penicillin G** 50,000 units/kg body weight/dose IM in a single daily dose for 10 days	**Treatment:** **Aqueous crystalline penicillin G** 100,000–150,000 units/kg/body wt./day, administered as 50,000 units/kg body wt./dose IV q 12 hours during the first 7 days of life and q 8 hours thereafter for a total of 10 days OR **Procaine penicillin G** 50,000 units/kg body weight/dose IM in a single daily dose for 10 days OR **Benzathine penicillin** 50,000 units/kg	**Treatment:** **Benzathine penicillin G 50,000** units/kg body weight/dose IM in a single dose * Another approach involves not treating the newborn if follow-up is certain but providing close serologic follow-up every 2–3 months for 6 months for infants whose mothers' nontreponemal titers decreased at least fourfold after therapy for early	**No treatment recommended** • Benzathine penicillin 50,000 units/kg body weight as a single IM injection might be considered, if follow-up is uncertain and the neonate has a reactive nontreponemal test. • Neonates should be followed serologically to ensure the nontreponemal test returns to negative

Syphilitic Stillbirth

Clinical case definition

A fetal death that occurs **after a 20-week gestation** OR in which the fetus weighs **>500g** AND the **mother had *untreated or inadequately* treated* syphilis at delivery**.

* Adequate treatment is defined as completion of a penicillin-based regimen, in accordance with CDC treatment guidelines, appropriate for stage of infection, initiated 30 or more days before delivery.

Comments: For **reporting** purposes, congenital syphilis includes:

1. cases of congenitally acquired syphilis among infants and children
2. syphilitic stillbirths

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

Maternal Screening for Syphilis

1. All pregnant women should be tested for syphilis early in pregnancy at the **first prenatal visit** or at the time of pregnancy confirmation

2. In **high prevalence areas or who are at high individual risk***, retesting at 28 weeks and delivery is recommended. High-risk* pregnant women should be screened at **delivery**.

3. No mother or baby should be discharged from the hospital without documentation of maternal syphilis testing (during pregnancy and/or delivery)

4. Women who experience a **fetal death** at ≥20 weeks should be tested for syphilis.

*Examples of high risk: ***multiple prior STIs, recent incarceration, substance misuse, homelessness, transactional sex***

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

Public Health Considerations for Syphilis Outbreak Response

Provide prompt, stage-based treatment of cases and sexual partners

a) Link providers and case managers to public health investigative staff for effective disease intervention and community prevention ***(case investigation with identification and treatment of sexual partners)***

b) Provide **presumptive** treatment of (1) symptomatic persons and (2) sexual partners of cases

c) Ensure access to prompt treatment (either health facility or field-based) using designated **case management** pathways

d) Endeavor to identify patients with **early syphilis** which requires only one injection of benzathine penicillin.

e) Repeat day of treatment RPR if most recent test is ≥6 days old

f) Clinical consultative “rounds” to share and discuss case staging and treatment

Clinical Considerations for Syphilis Outbreak Response

Expand syphilis case finding

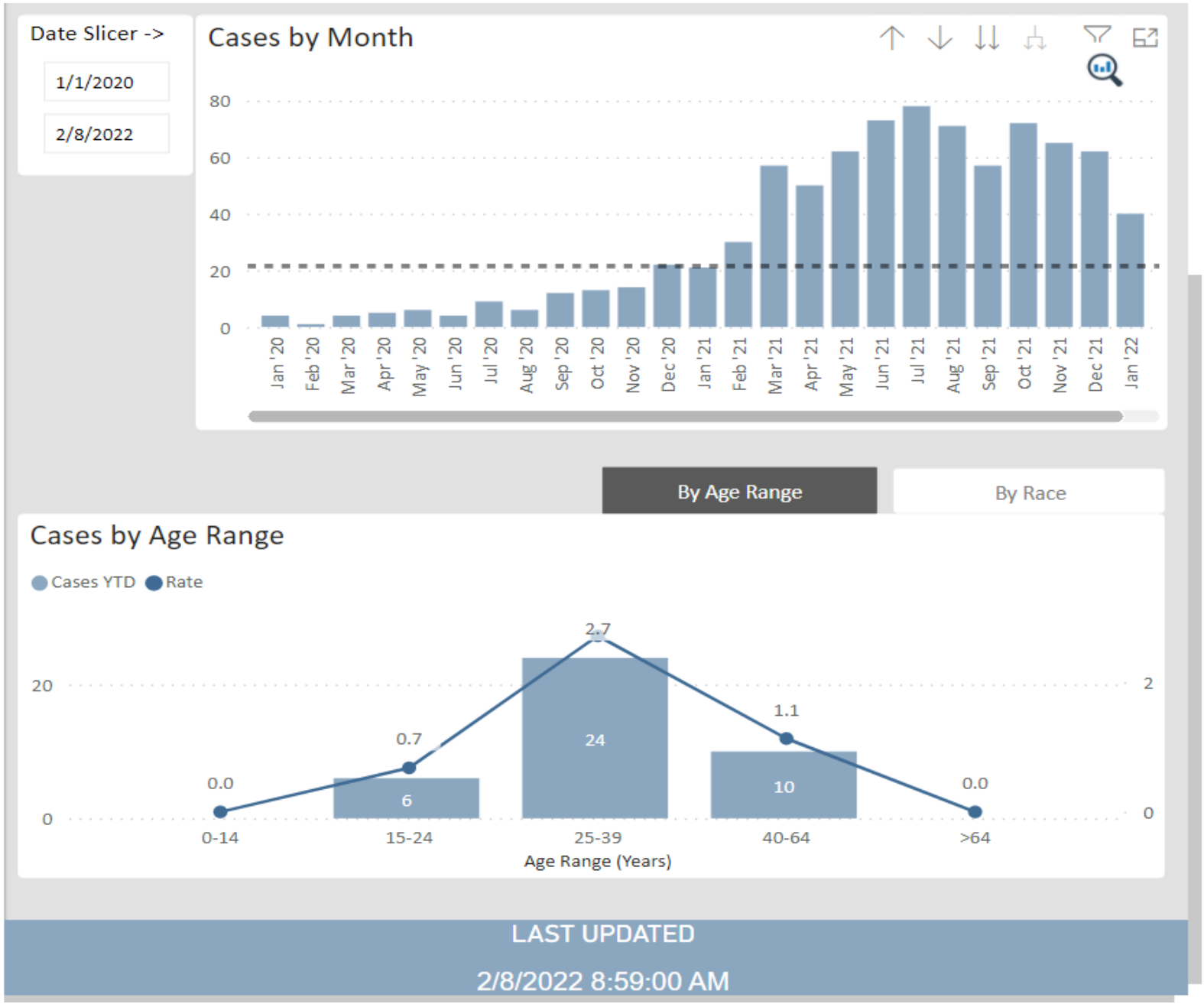
- Expand syphilis screening to populations at risk
  - Health facility- Emergency departments, OB/GYN, primary care, behavioral health

    ****(Consider Test-only Visits)**
  - Community-based – schools, community events, corrections, work/school physicals
- Implement screening reminders in E H Rs, automated order sets, and customized treatment orders for syphilis and other STIs
- Ensure **3-time point syphilis screening during pregnancy/delivery** in high-prevalence settings or among high-risk populations.
- ***Test women with syphilis or other STIs for pregnancy***

South Dakota 2021-2022

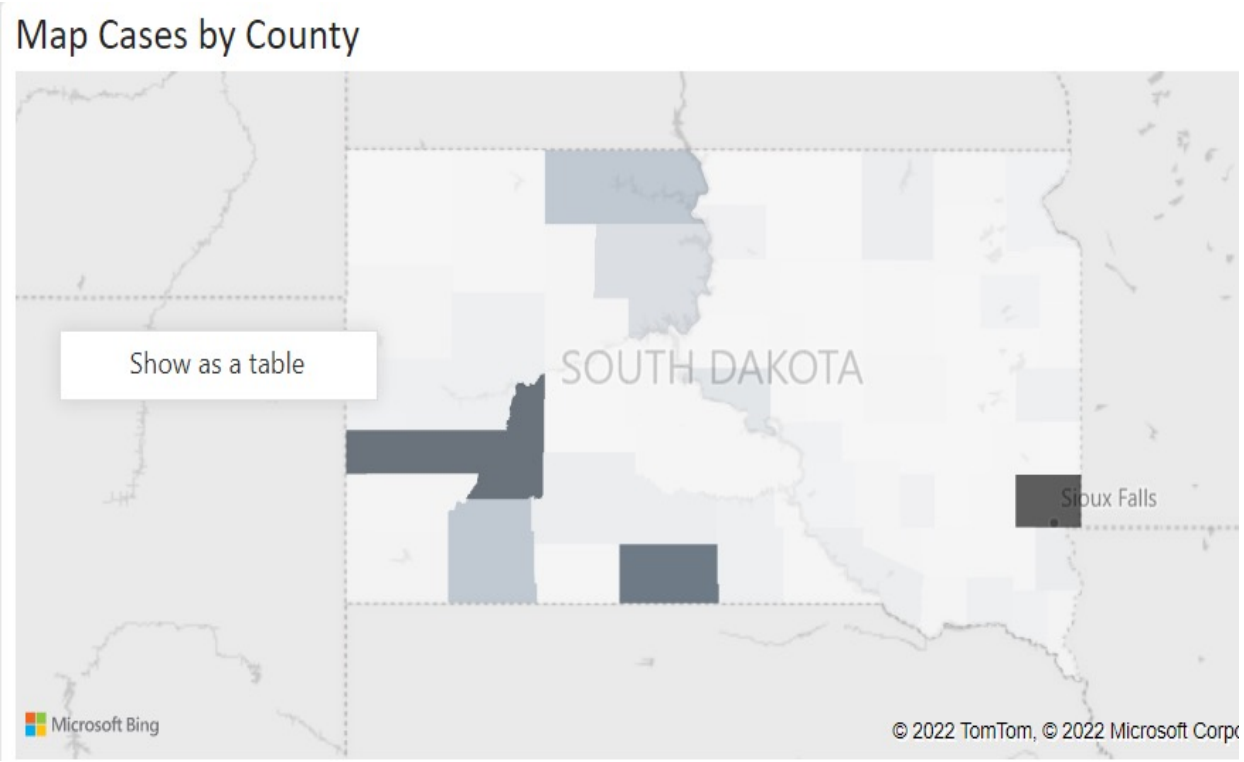
"South Dakota is experiencing a syphilis outbreak, with cases about 10 times higher than usual – about 500 so far in 2021 compared to a usual yearly reported total of 50-60 cases". *Park Rapids Enterprise* (November 14, 2021).

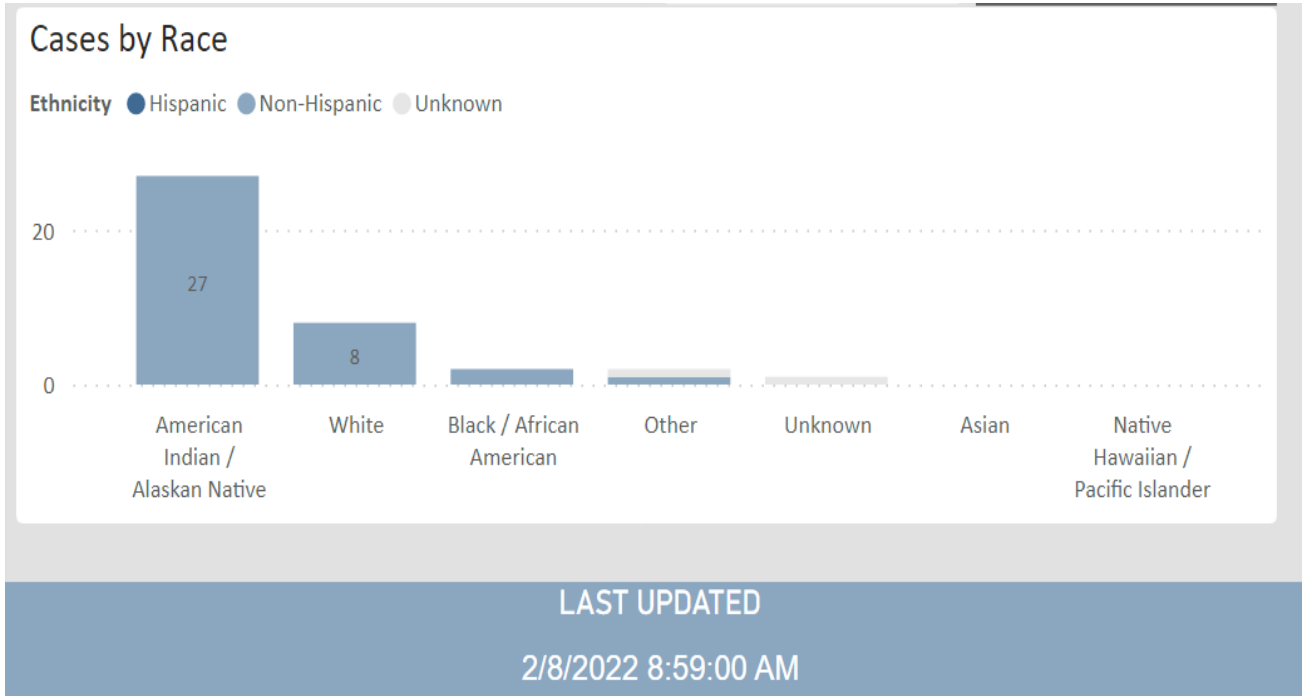
https://www.parkrapidsenterprise.com/newsmd/public-health-officials-concerned-about-std-rates-in-dakotas-minnesota-as-covid-19-pandemic-limited-testing#:~:text=South%20Dakota%3A%20South%20Dakota%20is,total%20of%2050%2D60%20cases



https://doh.sd.gov/statistics/surveillance/default.aspx

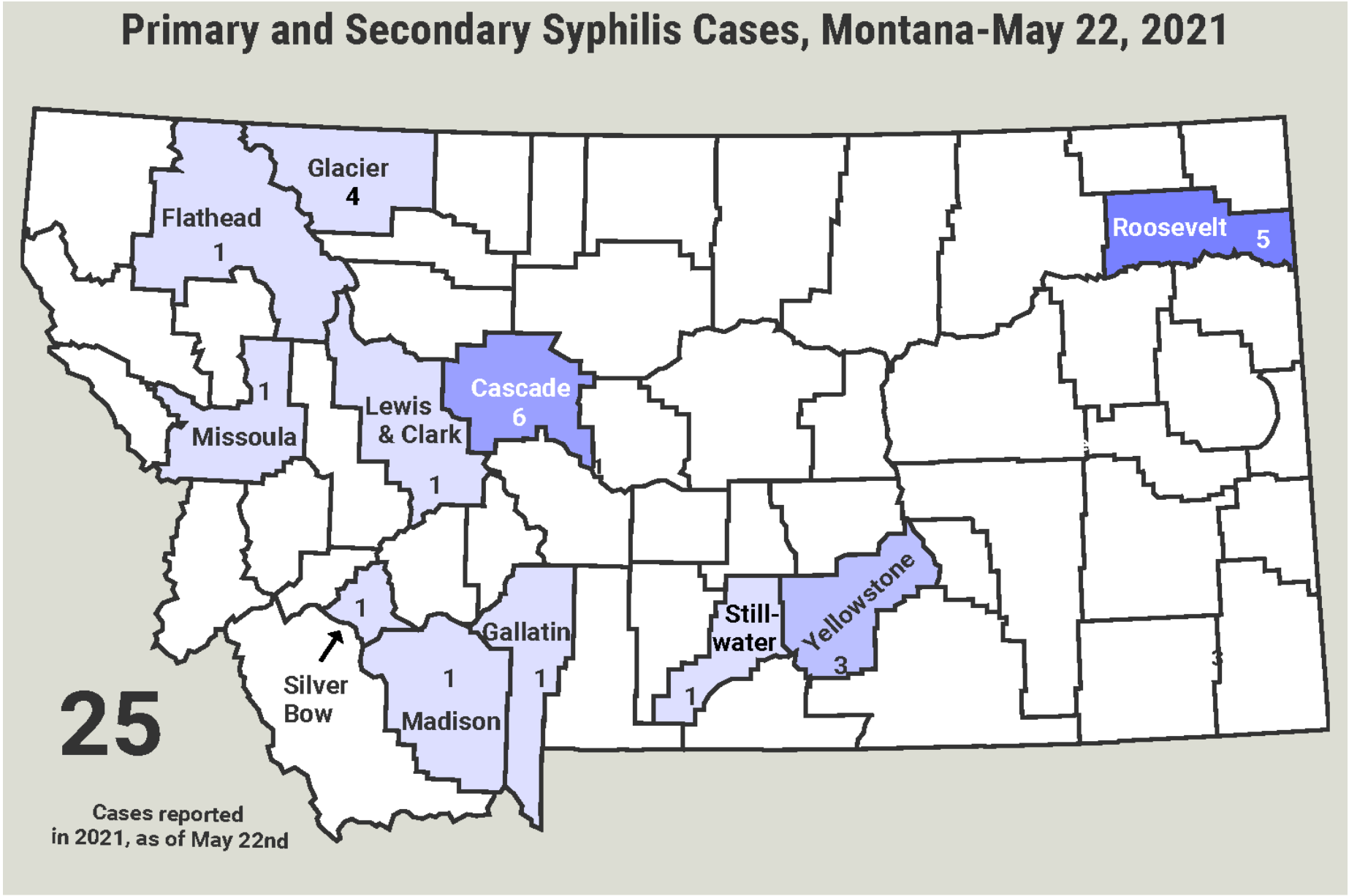
South Dakota 2021-2022





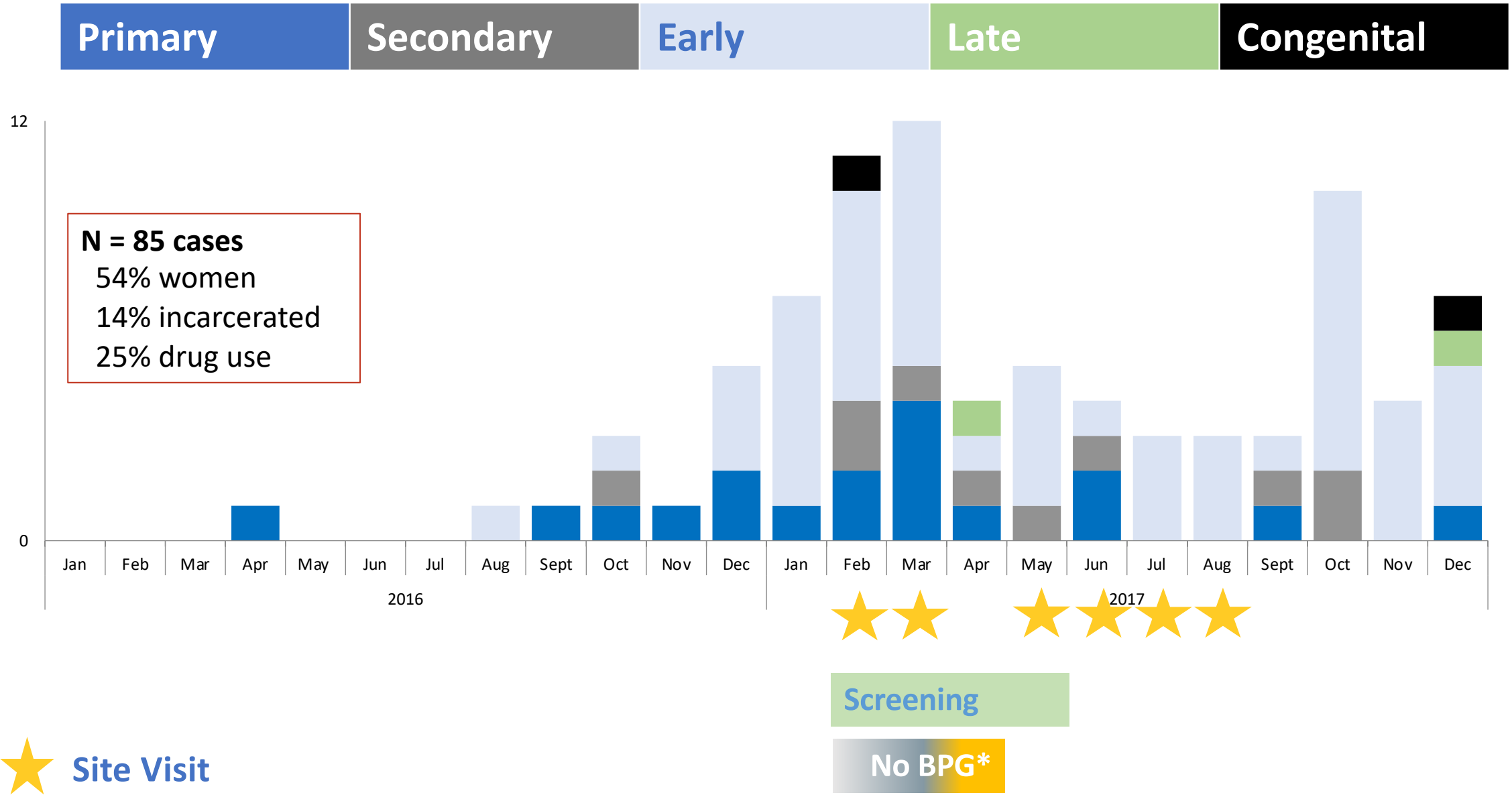
https://doh.sd.gov/statistics/surveillance/default.aspx

Montana



https://dphhs.mt.gov/publichealth/hivstd/stdprevention/syphilis

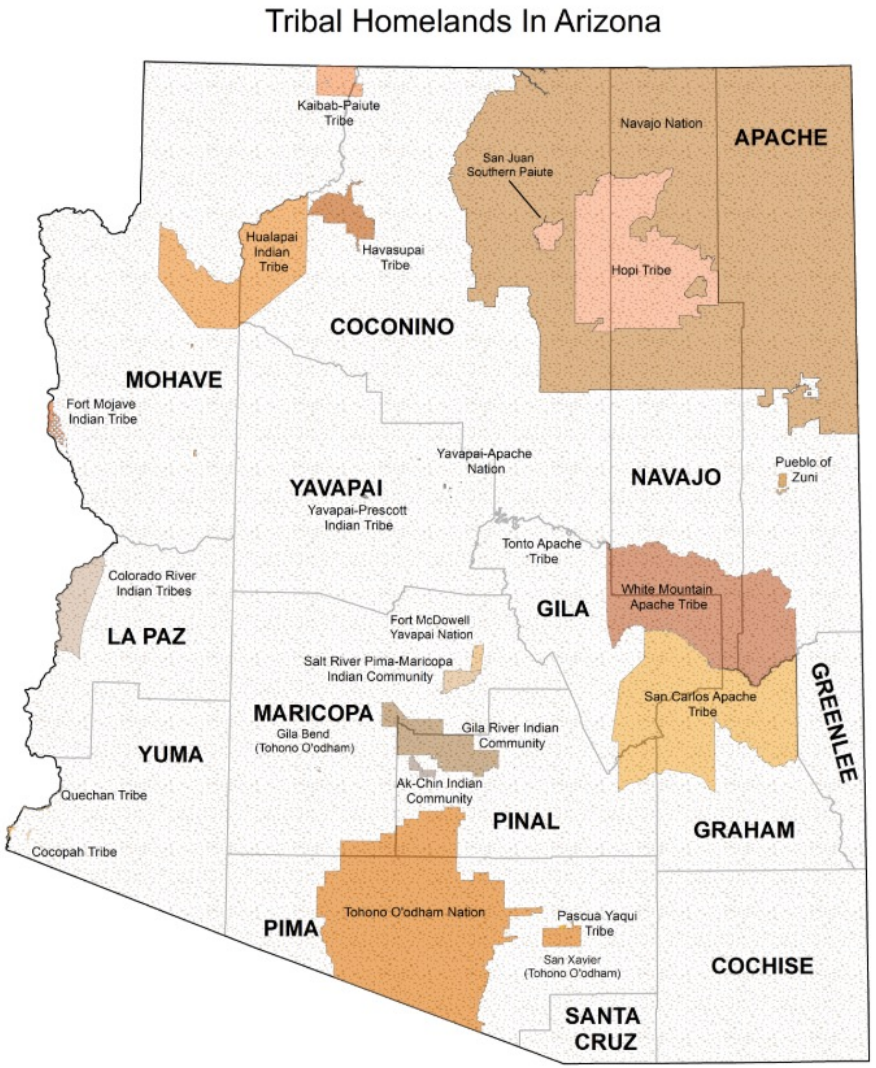
Central Arizona, 2016-2017



Browne K, Ridpath A, Scranton R et al. Abstract # 39462. 2018 National STD Prevention Conference Washington, D.C., Aug.

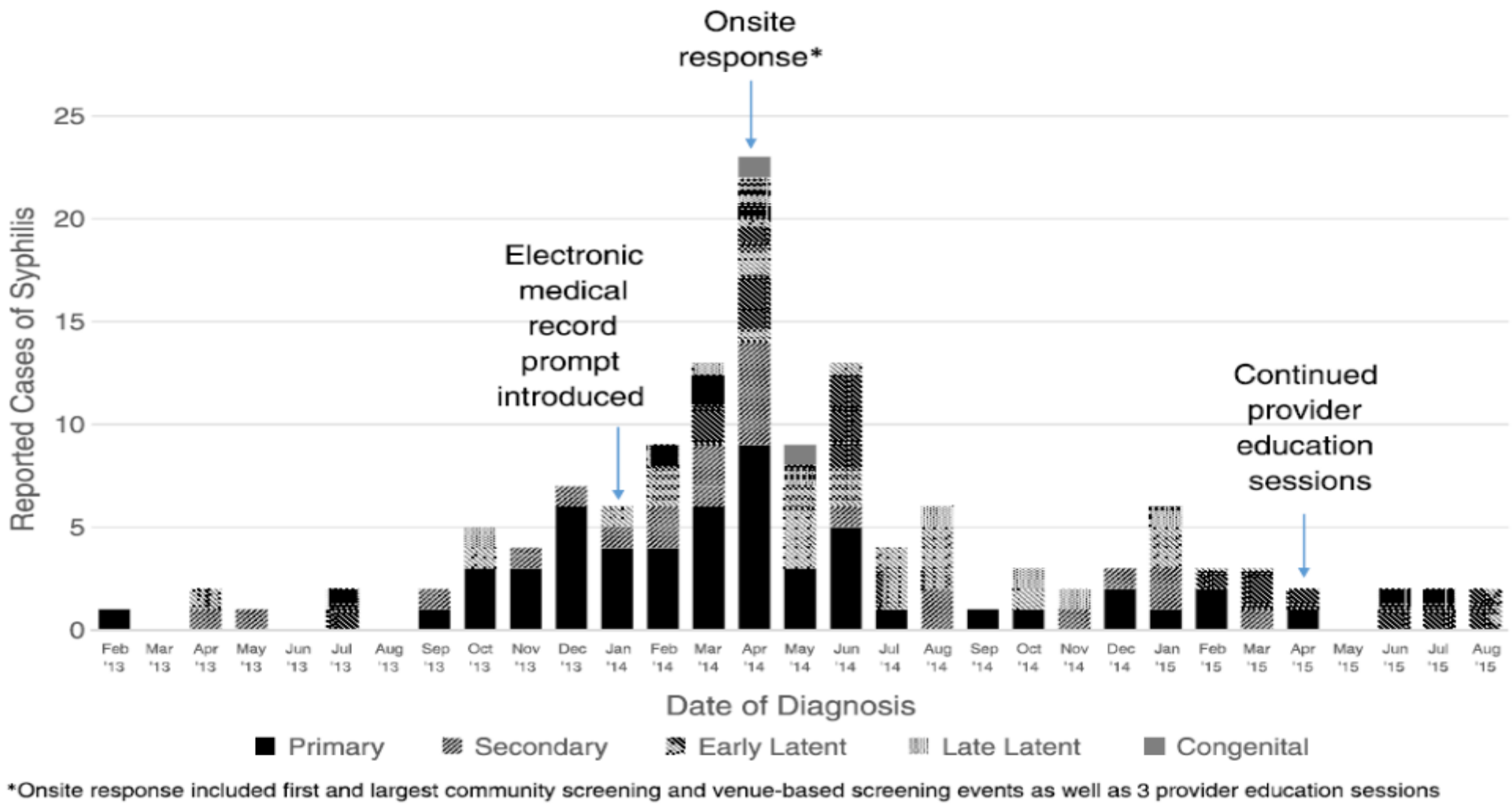
Central Arizona, 2016-2017

Methods of Case Finding	
Partner Services	**51%**
Screening *Provider screen (74%)* *Prenatal screen (11%)* *Jail screen (7%)* *Community screen (7%)*	32%
Self-Referral	14%
Referred by partner	2%



Browne K, Ridpath A, Scranton R et al. Abstract # 39462. 2018 National STD Prevention Conference Washington, D.C., Aug. 27-30, 2018. https://cdc.confex.com/cdc/std2018/webprogram/Paper39462.html

South Dakota/North Dakota: Syphilis Outbreak 2013-2015



*Onsite response included first and largest community screening and venue-based screening events as well as 3 provider education sessions

Bowen VB, et al. Multi-state syphilis outbreak among American Indians, 2013-2015. *Sexually Transmitted Diseases*. 2018;45(10):690-95

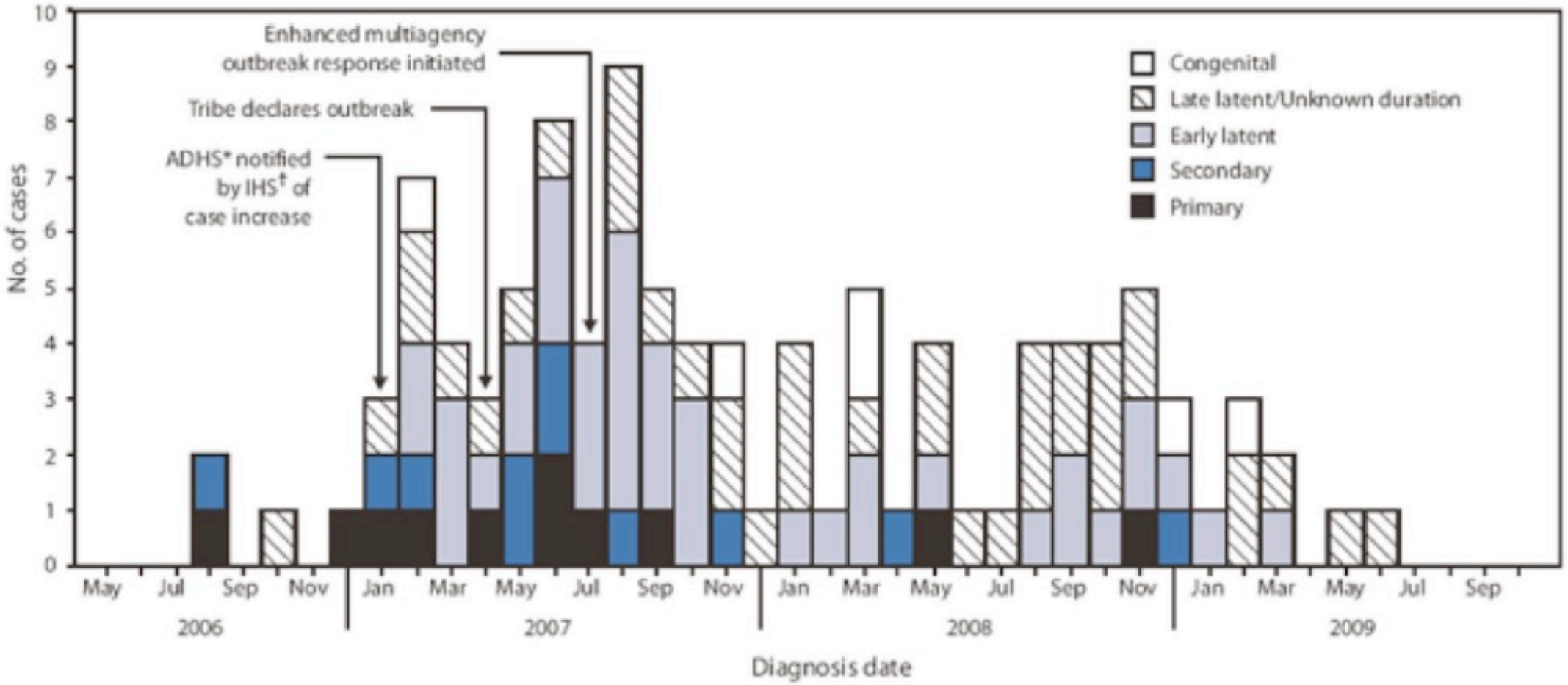
(2) South Dakota/North Dakota

2013-2015 high-yield syphilis case-finding and treatment activities

1. Increase prenatal screening, (1st,3rd trimesters and at delivery)
2. Improve community awareness and symptomatic test seeking,
3. Educate providers and increase general population screening for syphilis,
4. Implement electronic medical record reminders for providers,
5. Screen high-morbidity communities and at high-risk venues (corrections),
6. Prioritize training and delivery of sexual partner notification and management
7. Field treatment of cases and partners

Bowen VB, et al. Multi-state syphilis outbreak among American Indians, 2013-2015. *Sexually Transmitted Diseases*. 2018;45(10):690-95

Southern Arizona Syphilis Outbreak, 2007-2009



Johnson M, et al. Syphilis Outbreak Among American Indians --- Arizona, 2007–2009. *MMWR Morb Mortal Wkly Rep.* 2010 February 19; 59(6): 158–161

Southern Arizona Syphilis Response

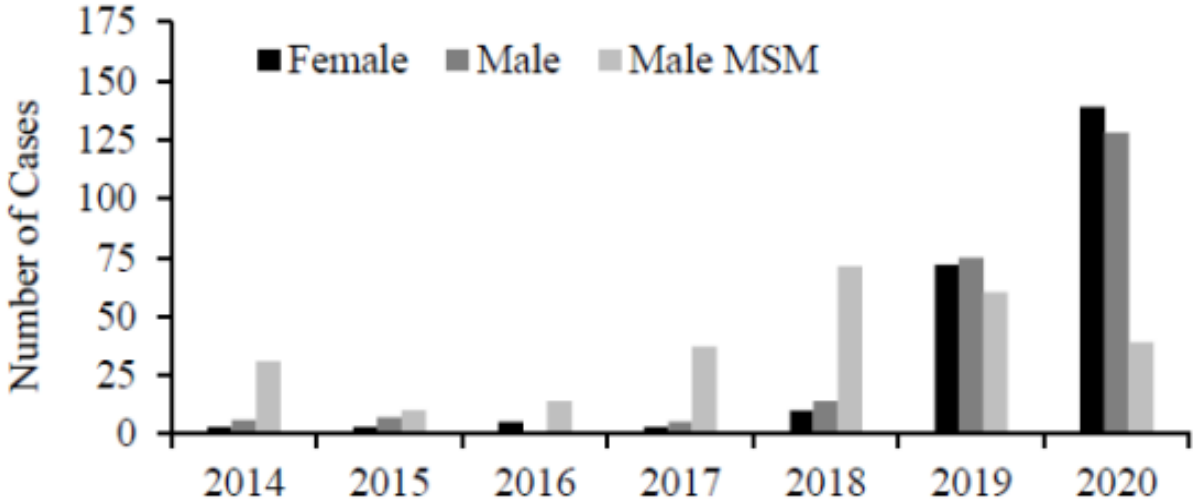
- Identification of syphilis, HIV, chlamydia, and gonorrhea screening program on the reservation to include:
  1. Clinic- and hospital-based screening of all persons aged 12–55 years receiving health care (including pregnant women),
  2. Screening of all incarcerated adults and juvenile detainees,
  3. Screening of students at seven high schools and of youths at six social events,
  4. Screening of workers at two worksites, and door-to-door screening in seven of the reservation's 11 districts.
  5. Case investigation and clinical management of sexual partners
  6. Community awareness campaign

Johnson M, et al. Syphilis Outbreak Among American Indians --- Arizona, 2007–2009. *MMWR Morb Mortal Wkly Rep*. 2010 February 19; 59(6): 158–161

Alaska 2018-2020

- Ongoing increase 2018-2020
  - 361 cases in 2020
    - (49% increase from 2019)
  - 167 (55%) were in males
  - 150 **(49%)** American Indian/Alaska Native people, 90 (29%) White persons, 23 (8%) were in Black persons,
  - 104 **(34%) were diagnosed with at least one other STD or had known HIV infection.**
  - Eight infants with congenital syphilis born to mothers who reported inconsistent or no prenatal care

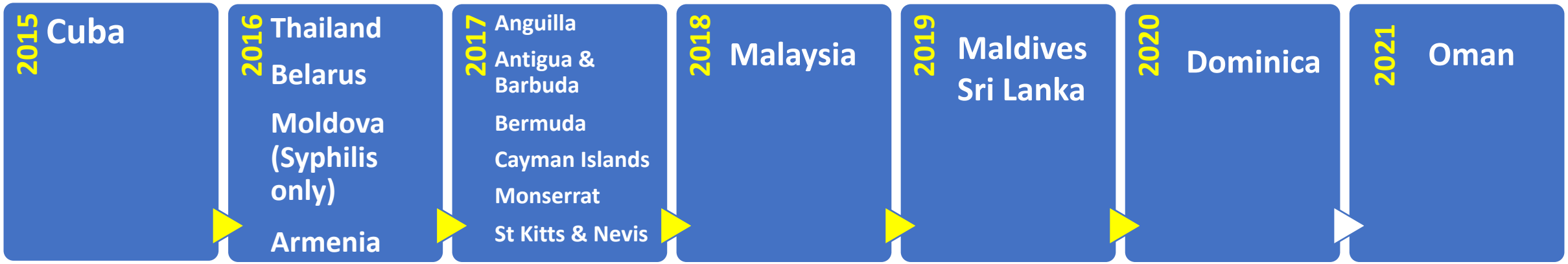
Figure. Primary, Secondary, and Early Latent Syphilis by Transmission Category — Alaska, 2014–2020 (N=733)*



** Male: men who did not self-identify as having sex with men*
Male MSM: men who self-identified as having sex with men

Syphilis Outbreak Update, Alaska 2020. State of Alaska Epidemiology Bulletin.
http://www.epi.alaska.gov/bulletins/docs/b2021_08.pdf

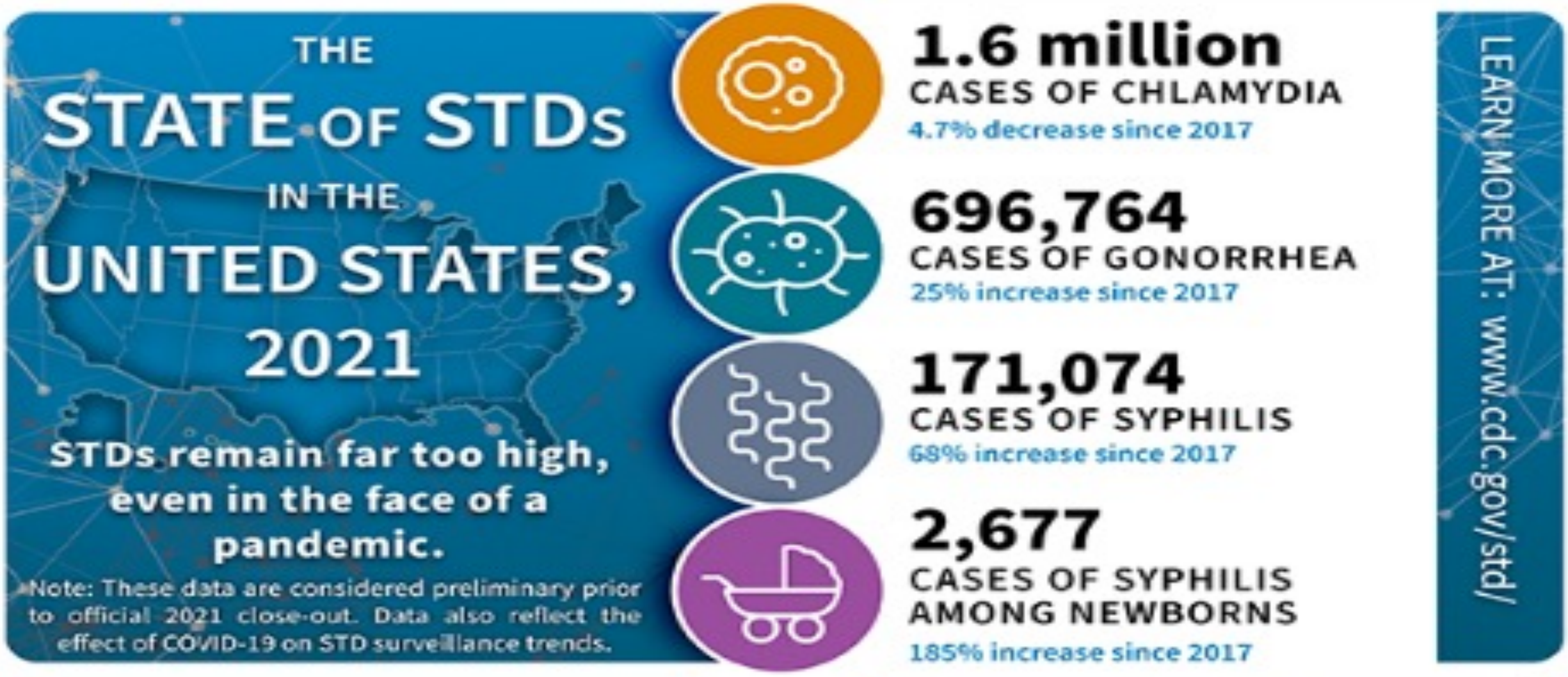
16 Countries/Territories validated by WHO for the Elimination of Mother-to-Child Transmission of HIV and/or syphilis



- Global guidance on criteria and processes for validation: elimination of mother-to-child transmission of HIV, syphilis and hepatitis B virus (who.int)
- https://www.who.int/initiatives/triple-elimination-initiative-of-mother-to-child-transmission-of-hiv-syphilis-and-hepatitis-b/validation

Provider Education Resources

- CDC STD Treatment Guidelines: https://www.cdc.gov/std/treatment-guidelines/default.htm
- Indian Country Infectious Disease ECHO: www.IndianCountryECHO.org
- CDC STD Prevention Training Centers: https://www.cdc.gov/std/training/default.htm
- University of Washington STD CME sessions: https://www.std.uw.edu/
- California Prevention Training Center Online: https://www.stdhivtraining.org/online_courses.html
- Johns Hopkins STD Prevention Training: https://www.stdpreventiontraining.com/
- New York City STD/HIV Prevention Training Center: https://www.nycptc.org/
- CDC STD Surveillance: https://www.cdc.gov/std/statistics/2019/default.htm
- CDC STD Hotline: https://www.usa.gov/federal-agencies/cdc-national-std-hotline



ANYONE WHO HAS SEX COULD GET AN STD, BUT SOME GROUPS ARE MORE AFFECTED

- YOUNG PEOPLE AGED 15-24
- GAY & BISEXUAL MEN
- PREGNANT PEOPLE
- RACIAL & ETHNIC MINORITY GROUPS

mdt7@cdc.gov

For more information, contact CDC

1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.