HIV/Syphilis/GC/Chlamydia: What CHRs need to know

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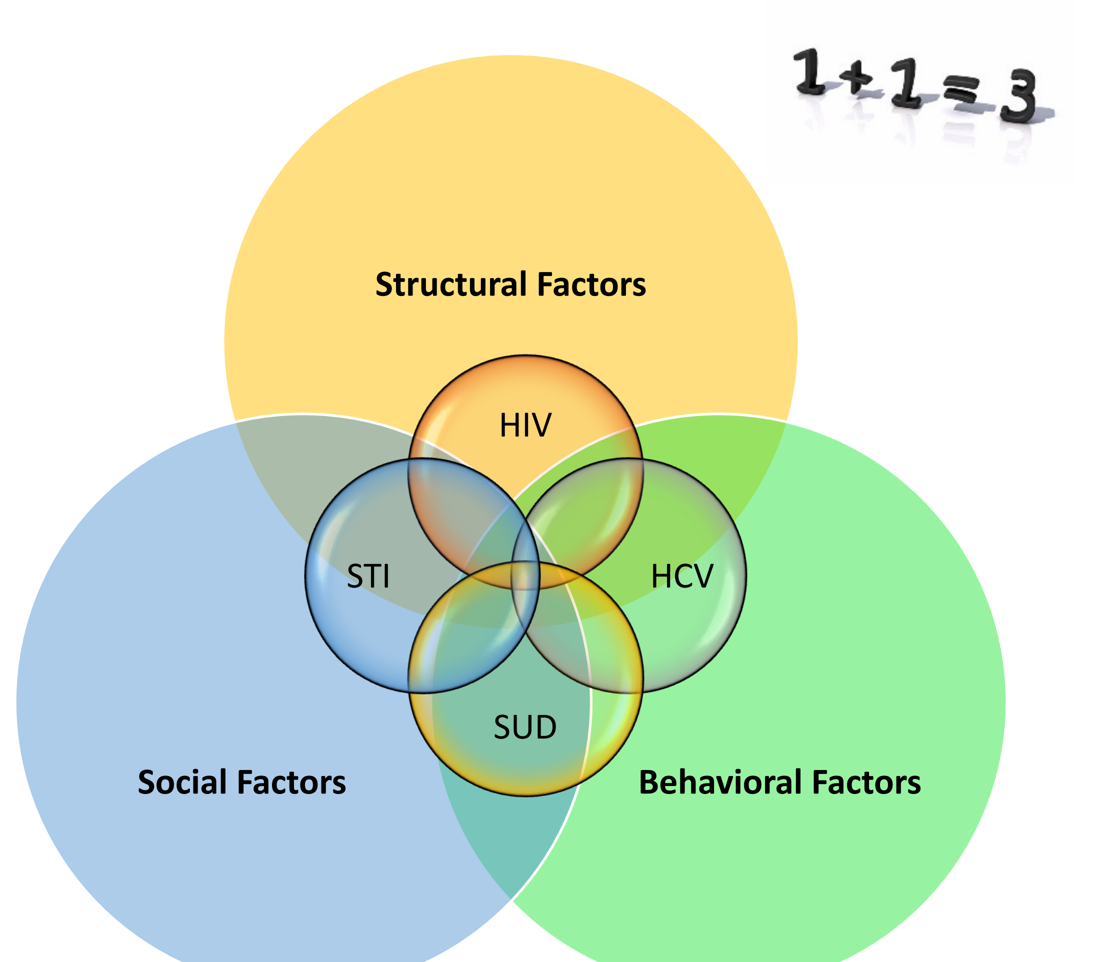
Syndemic

Core principles:

- **Clustering** of two or more conditions in a specific population
- Their **synergism** in producing excess burden of disease in a population
- **Precipitation and propagation** by large scale behavioral, structural and social forces



Singer, M. and Clair, S. (2003), Syndemics and Public Health: Reconceptualizing Disease in Bio-Social Context. Medical Anthropology Quarterly, 17: 423-441. https://doi.org/10.1525/maq.2003.17.4.423

HIV: Human Immunodeficiency Virus
HCV: Hepatitis C virus
SUD: Substance Use Disorder

Syndemic

Linkage to Care

Screening

Quality of Care

HCV/HIV/STI

SUD ↔ Behavior Risk

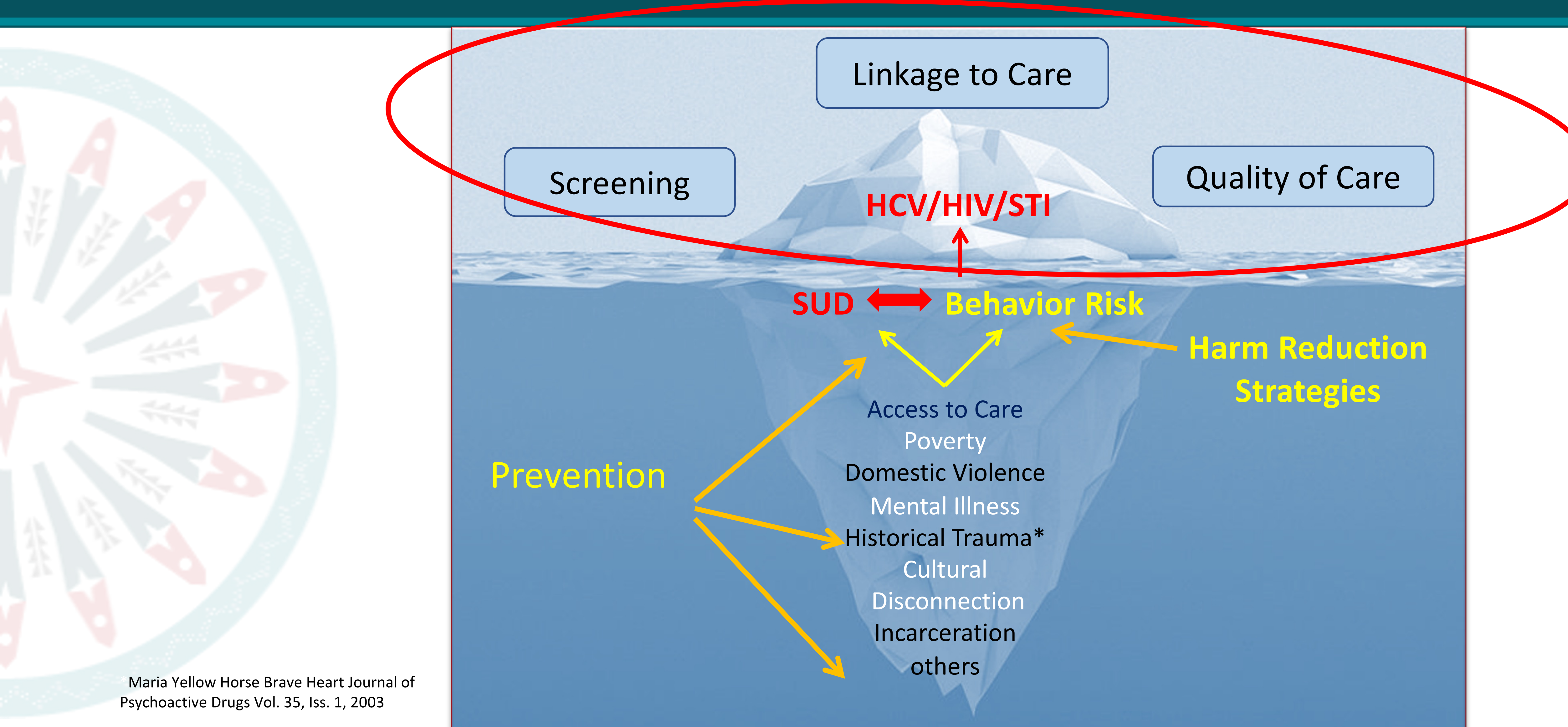
Harm Reduction Strategies

Prevention

Access to Care
Poverty
Domestic Violence
Mental Illness
Historical Trauma*
Cultural Disconnection
Incarceration
others

Maria Yellow Horse Brave Heart Journal of Psychoactive Drugs Vol. 35, Iss. 1, 2003

Syndemic



Maria Yellow Horse Brave Heart Journal of Psychoactive Drugs Vol. 35, Iss. 1, 2003

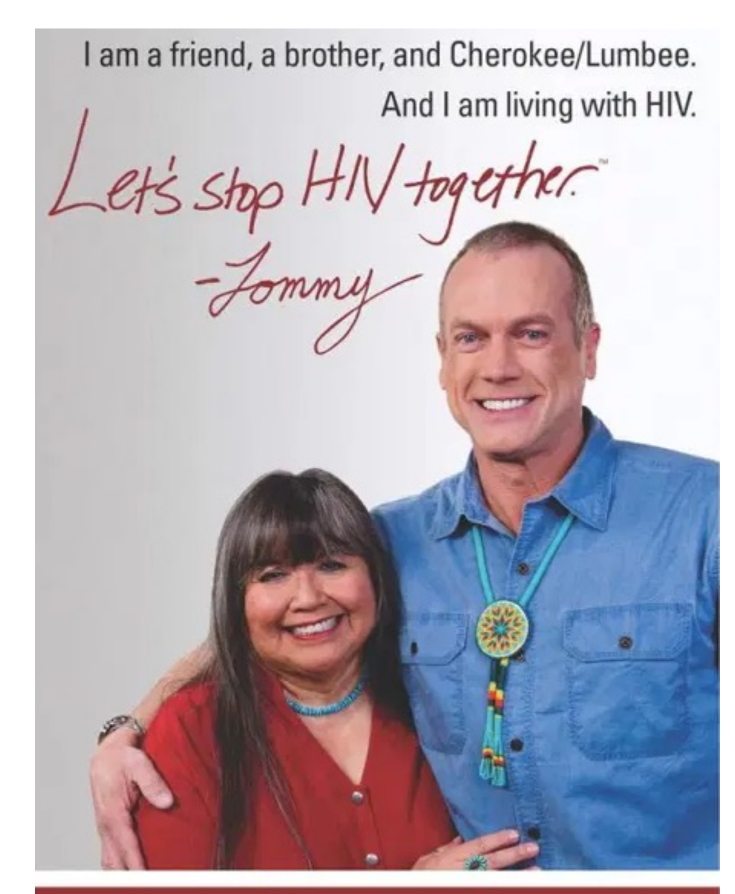
What is HIV?

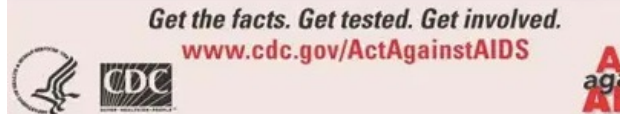
What Is HIV?

HIV (*human immunodeficiency virus*) is a virus that attacks cells that help the body fight infection, making a person more vulnerable to other infections and diseases. It is spread by contact with certain bodily fluids of a person with HIV, most commonly during unprotected sex (sex without a condom or HIV medicine to prevent or treat HIV), or through sharing injection drug equipment.

HIV in the United States

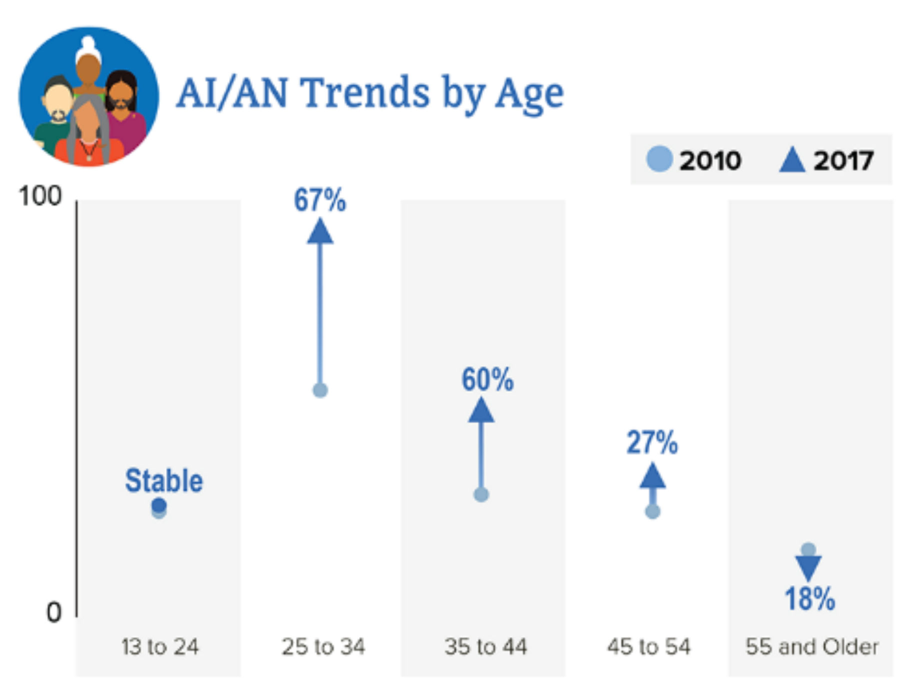
- 1.2 million people living with HIV
- 36,400 new HIV infections in 2018
  - 7% decrease compared with 2014
- Lifetime risk for men who have sex with men 1 in 6 (17%)

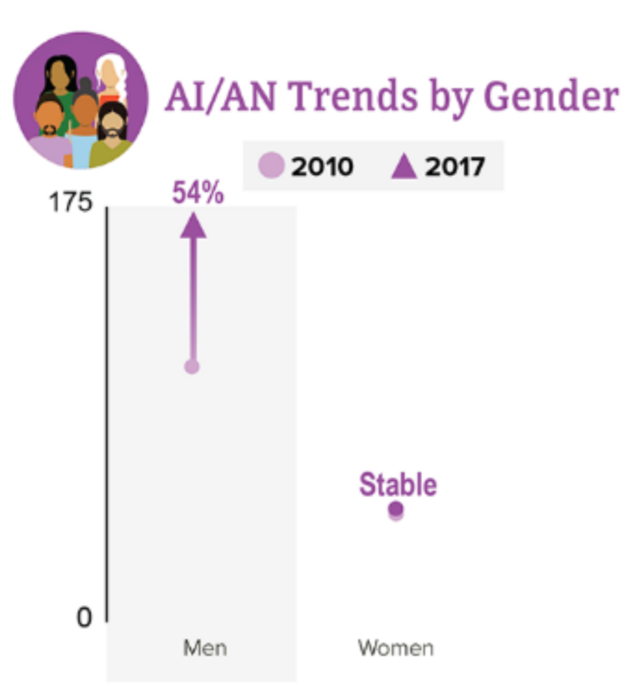




https://www.hiv.gov/hiv-basics/overview/data-and-trends/statistics
Hess K, et al. *Ann Epidemiol.* 2017;27:238-243.

HIV and American Indians & Alaska Natives



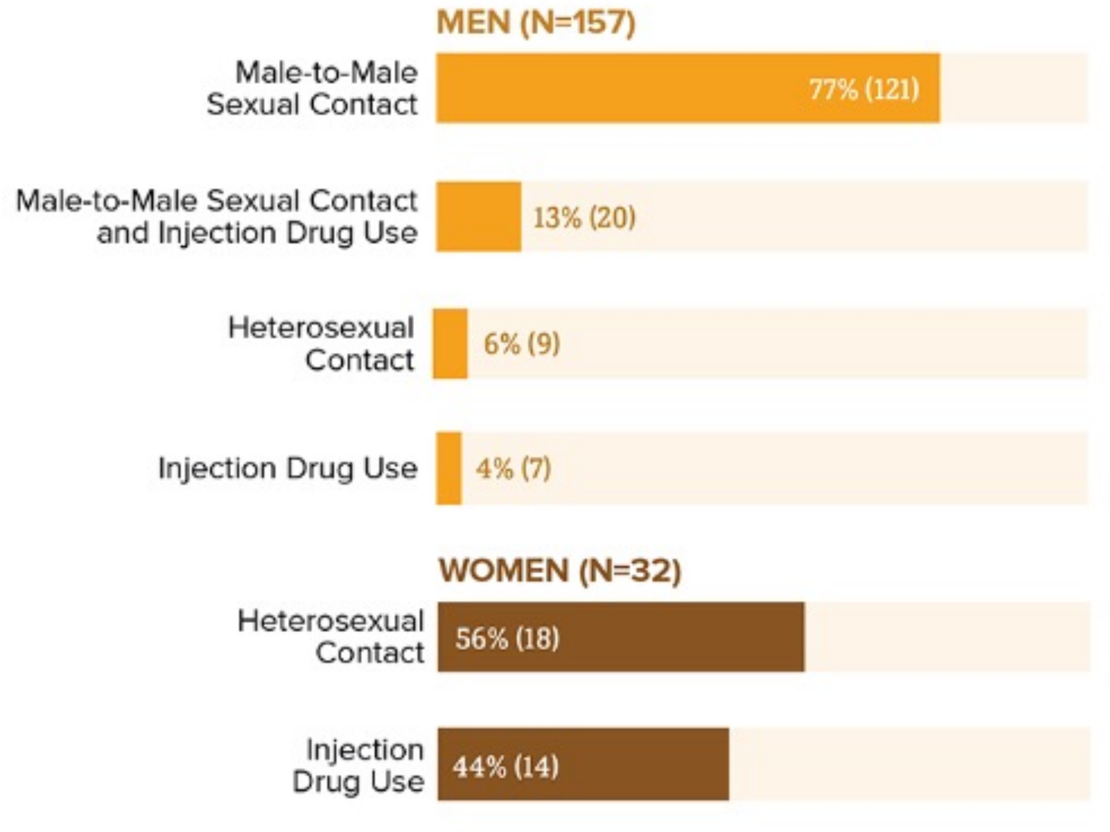


*Changes in populations with fewer HIV diagnoses can lead to a large percentage increase or decrease.

Source: CDC. NCHHSTP AtlasPlus. Accessed April 27, 2020.

HIV and American Indians & Alaska Natives

- AI/AN represent 1.3% of the U.S. population and are ~0.5% of the HIV diagnoses in 2018



https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-report-2018-preliminary-vol-30.pdf

Ending the HIV Epidemic

Ending
the
HIV
Epidemic
A PLAN FOR AMERICA

75%
reduction in new
HIV infections
by 2025
and at least
90%
reduction
by 2030.

www.hiv.gov

Ending the HIV Epidemic

Diagnose all people with HIV as early as possible.

Treat people with HIV rapidly and effectively to reach sustained viral suppression.

Prevent new HIV transmissions by using proven interventions, including pre-exposure prophylaxis (PrEP) and syringe services programs (SSPs).

Respond quickly to potential HIV outbreaks to get needed prevention and treatment services to people who need them.

How is HIV Spread from Person to Person?

Having vaginal or anal sex with someone who has HIV without using a condom or taking medicines to prevent or treat HIV.

Anal sex is riskier than vaginal sex.

For anal sex, the receptive partner is at more risk than the insertive partner.

Sharing injection drug equipment, such as needles, with someone who has HIV.

From mother to child during pregnancy, birth, or breastfeeding.

However, the use of HIV medicines and other strategies have helped lower the risk of mother-to-child transmission of HIV to 1% or less in the United States.

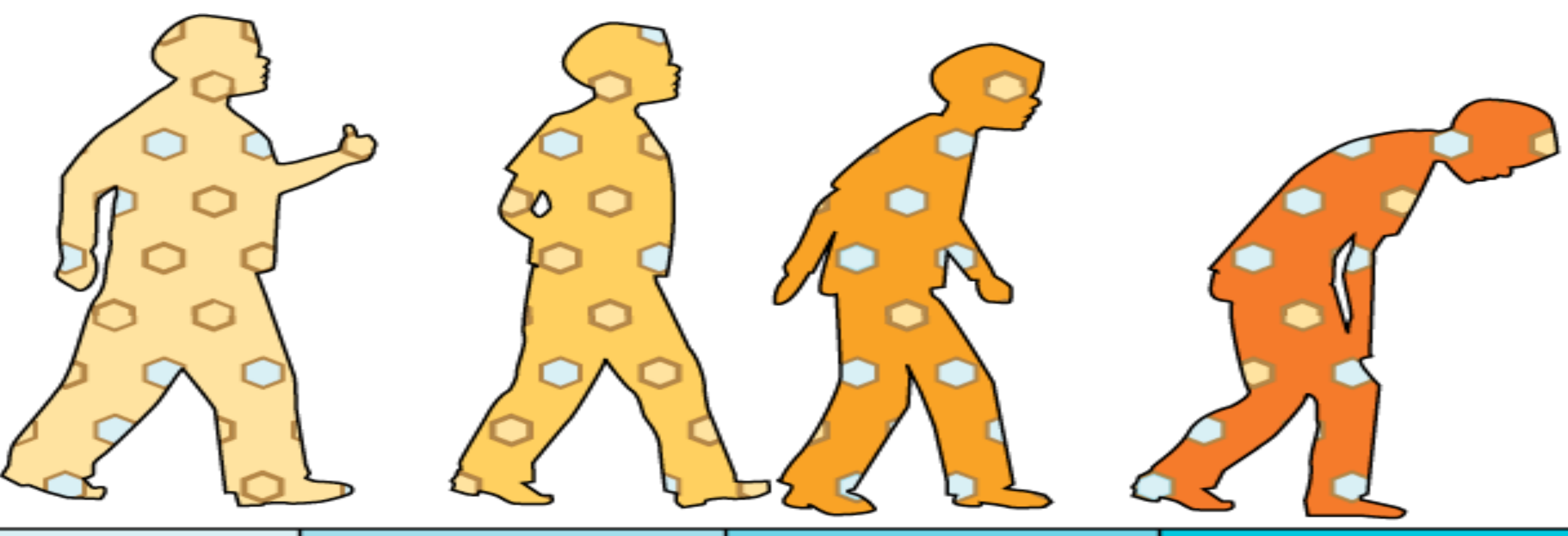
HIV Is Not Transmitted By

- Casual contact
- Working or playing with an HIV positive person
- Closed mouth kissing
- Shaking hands
- Public pools
- Hugging
- Public toilet
- Air, food, or mosquitos

If an HIV + person is on ART and virally suppressed: U=U

Retrieved from http://www.cdc.gov/hiv/resources/qa/transmission.ht

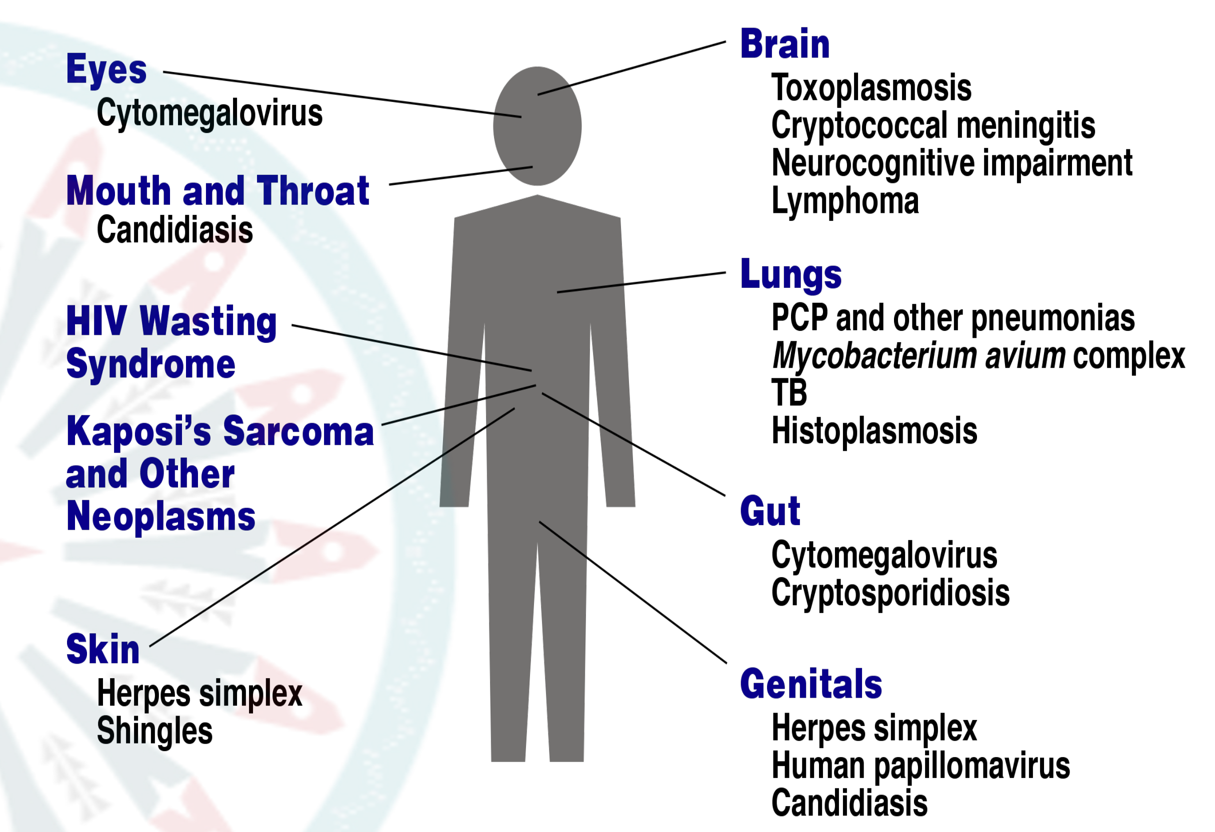
Clinical Progression



Beginning: No symptoms, no weight loss.	**After few years:** Mild weight loss, mouth ulcers, itching, skin disease.	**After several years:** Important weight loss, thrush, TB, fever.	**After 10 years:** Wasting syndrome, chronic herpes, simplex ulcerations, extrapulmonary TB

5–10 YEARS

Consequences of CD4 Depletion: Opportunistic Infections and Cancers



- CD4 > 500
  - Tuberculosis (TB)
- CD4 200-500
  - TB, Oral Candidiasis
- CD4 150- 200
  - TB, Candida esophagitis (CE), Pneumocystis,
- CD4 < 100
  - TB, CE, Pneumocystis, MAC, Cryptococcus, Histoplasmosis, Lymphoma
- CD4 < 50
  - TB, CE, Pneumocystis, MAC, Cryptococcus, Histoplasmosis, Cytomegalovirus

Opportunistic infections are infections that take advantage of a weakened immune system

Prevention Strategies

- TasP (Treatment as Prevention)
- Opt-out testing
  - Pregnancy, 1st and 3rd trimester at PIMC
  - Empaneled patients every 5 years at PIMC
  - Use bundles for STI testing to make sure HIV is included
- Condoms
- Talking with partners
  - Ask about their status, less partners
- Non-occupational post-exposure prophylaxis
- PrEP (Pre-Exposure Prophylaxis)

Treatment as Prevention (TasP)

Effectively zero risk of sexual transmission

HIV Treatment

- HIV medicine is called antiretroviral therapy (ART)
- Many 1 pill once a day options
- No cure for HIV and is it a manageable chronic illness
- Most people can get the virus suppressed within a few months
- Taking HIV medicine does not prevent transmission of other sexually transmitted infections

When should HIV Treatment be started?

- As soon as possible after diagnosis
- What if treatment is delayed?
  - HIV will continue to attack the person's immune system
  - The person living with HIV can transmit to others
  - The person is at higher risk of developing AIDS (Acquired Immune Deficiency Syndrome)

HIV Pre-Exposure Prophylaxis

- Pre-Exposure Prophylaxis
  - Pre= before
  - Exposure= either through sex or blood (IV drug use)
  - Prophylaxis= prevention
- Currently approved PrEP is 1 pill once a day to prevent HIV infection if exposed through sex or IV drug use
- For men, women, and transgender men and women that are at risk of acquiring HIV
- Other medications are being tested included long-acting injectable medications

Who needs PrEP?

Behavior	• Sex without condoms • Sex with partner who has HIV & not on treatment or unknown status • Sharing of injection equipment
History	• STI in the past 6 months • “High” number of sexual partners
Epidemiology	• Sexual activity in a high prevalence area or network • Commercial sex worker

https://www.cdc.gov/hiv/pdf/risk/prep/cdc-hiv-prep-guidelines-2017.pdf

CNHS: Basic Sexual History for PrEP Evaluation

Have you injected drugs in the last 6 months

- **Yes:** NEEDS PrEP Evaluation
- **No**: **Go to next question**

Do you have sex with women, men or both?

- **No:** You are done !!!!
- **Yes: Go to next question**

During sex do you use condoms?

- All the time: You are done !!!!
- Sometimes: **Go to next question**
- Never: **Go to next question**

How many sexual partners do you have

- One partner and they know their HIV status to be negative: You are done!!!
- One or more without knowing their HIV status: NEEDS PrEP Evaluation

What can I do?

- Decrease stigma
  - Talk to anyone that will listen
  - Focus on U=U and HIV Prevention
    - Did you know that people living with HIV and controlled on treatment can't transmit HIV?
- Talk to family and friends that may be at risk about PrEP
  - https://www.getyourprep.com/
- Assist patients with getting testing, treatment and prevention

Screening: Our Current Goal

Offer HIV screening to every American Indian and Alaskan Native patient at least once in their life… and more often based on risk.

SYPHILIS IS INCREASING IN THE U.S.

BUT IT IS 100% PREVENTABLE

Early 2021 data show an **increase** in primary and secondary syphilis among adults

Women up 34%
10,620 cases*

Men up 9%
36,614 cases*

Syphilis in **newborns is up 6% in 2021; 2,268** cases already reported*

33 states report increases

If you are sexually active:

- Ask your provider about how to prevent syphilis
- Talk to your partner(s) about STIs and safer sex
- Get tested, especially if you are pregnant or planning to get pregnant

If you are a healthcare provider:

- Know the syphilis burden in your community and talk to patients about sexual health
- Test patients at first prenatal visit; repeat at 28 weeks if at risk of infection**
- Treat syphilis immediately

*COVID-19 affected 2021 reporting; these data points reflect what is known as of March 2022

**See STI Treatment Guidelines for details

Primary and Secondary Syphilis — Rates of Reported Cases by Race/Hispanic Ethnicity, United States, 2016–2020

Rate*

40
30
20
10
0

Black/AA
AI/AN
NH/PI
Multiracial
Hispanic/Latino
White
Asian

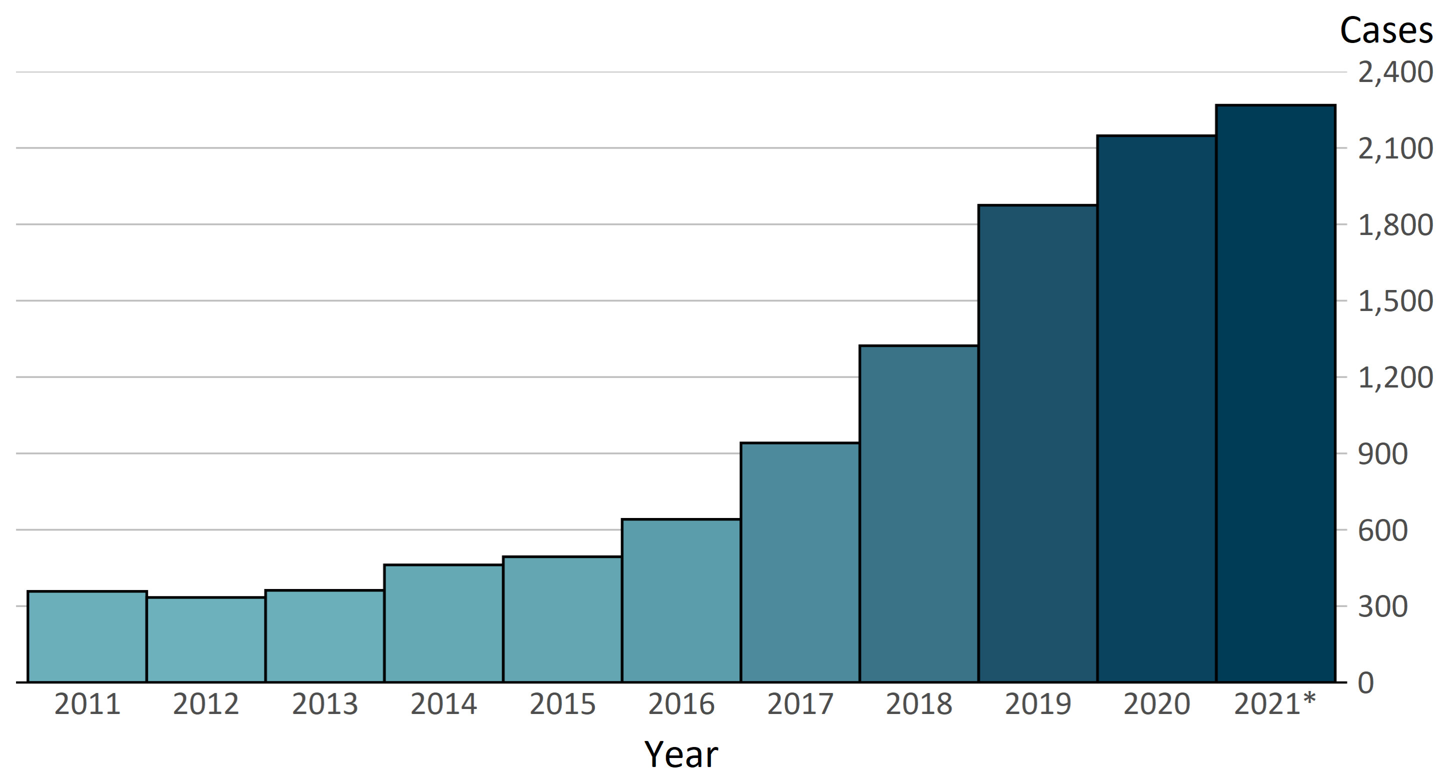
2016 2017 2018 2019 2020

Year

* Per 100,000

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

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*

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

Race/Ethnicity	Cases
Native Hawaiian or Other Pacific Islander (Non-Hispanic)	34 cases
American Indian or Alaska Native (Non-Hispanic)	80 cases
Black or African American (Non-Hispanic)	671 cases
Hispanic or Latino (Any Race)	681 cases
Two or More Races (Non-Hispanic)	37 cases
White (Non-Hispanic)	637 cases
Asian (Non-Hispanic)	10 cases

0 50 100 150 200 250 300 350

Congenital Syphilis Rate per 100,000 Live Births

* 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*

Syphilis Screening

- Screening of pregnant women at first prenatal visit, during 3rd trimester and again at delivery
- At minimum, annual* screening of sexually active **MSM** at exposed sites (urethral/pharyngeal/rectal)
- At minimum, annual* screening of **HIV-infected** persons
- At minimum, bi-annual* screening for persons on **PrEP.**
- Women ≤35 years and men <30 years of age in **corrections** facilities at intake as opt out screening

***More often based on risk**

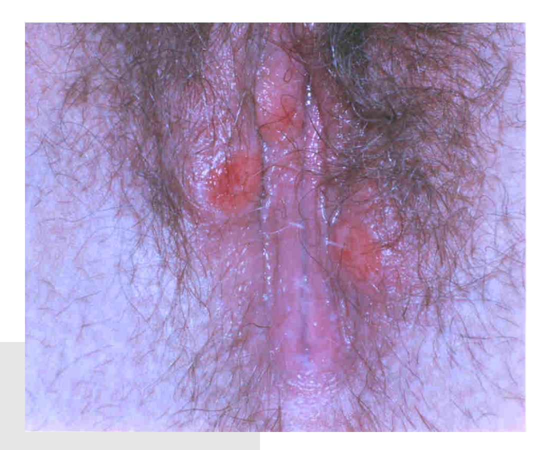
STI Treatment Guidelines (cdc.gov)

Syphilis: Clinical Stages

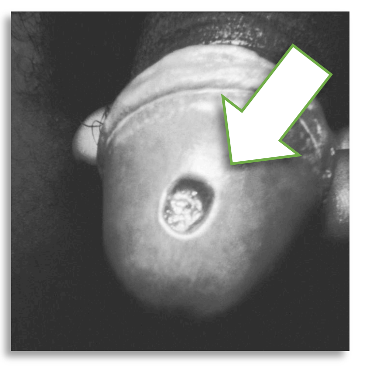
Primary

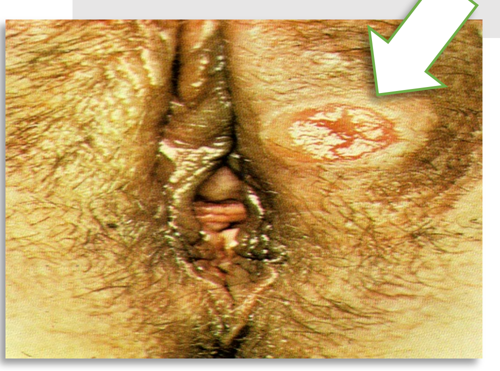
Painless ulcer

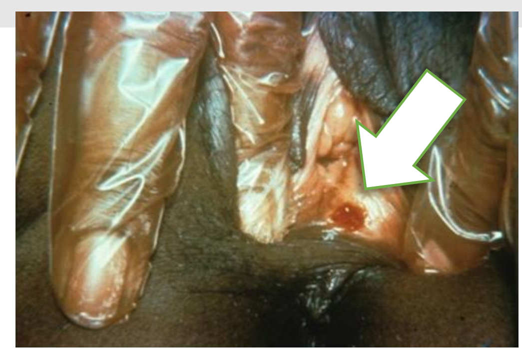
- Appears 10 to 90 days after infection
- **Sore goes away even if person is not treated**
- Patient may never be aware of a chancre

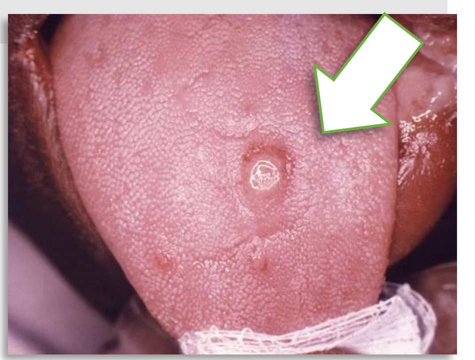


"Kissing" Lesion



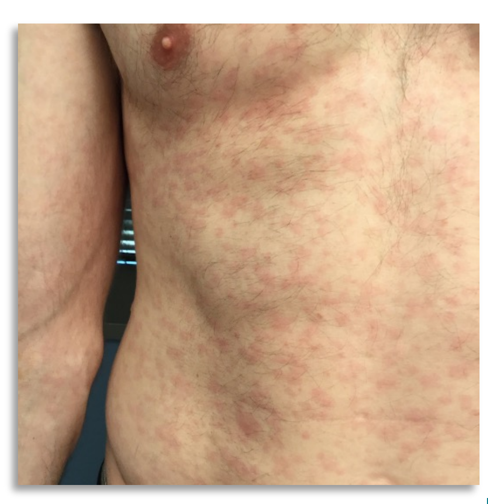


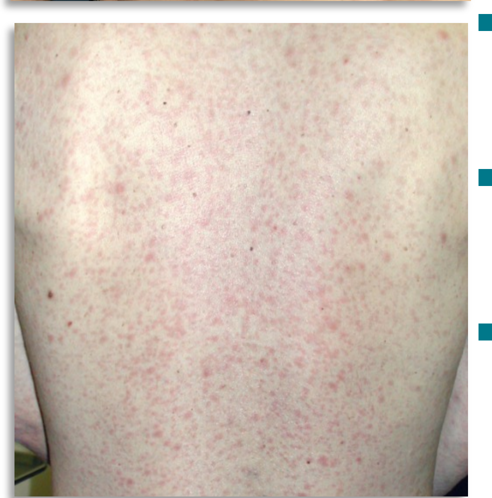




Syphilis: Clinical Stages

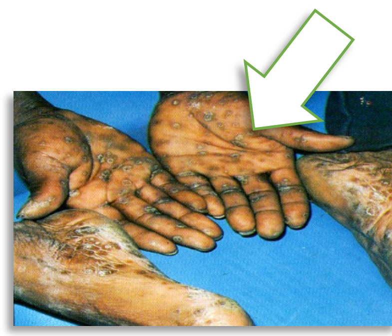
Secondary

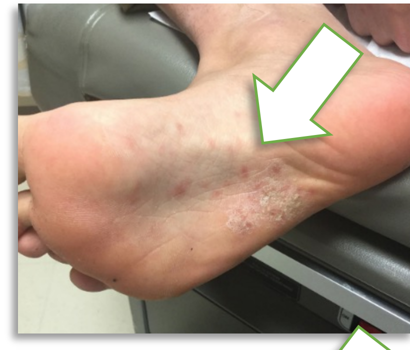


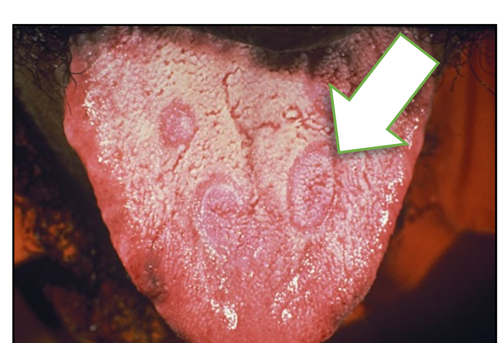


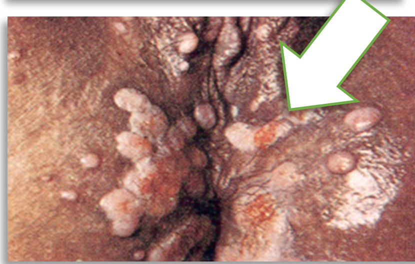
Rash
Mucocutaneous lesions Lymphadenopathy Hair loss

- *Usually* occurs 3 to 6 weeks after primary syphilis
- Patients may only have one subtle skin change
- **Symptoms also go away even if not treated!**

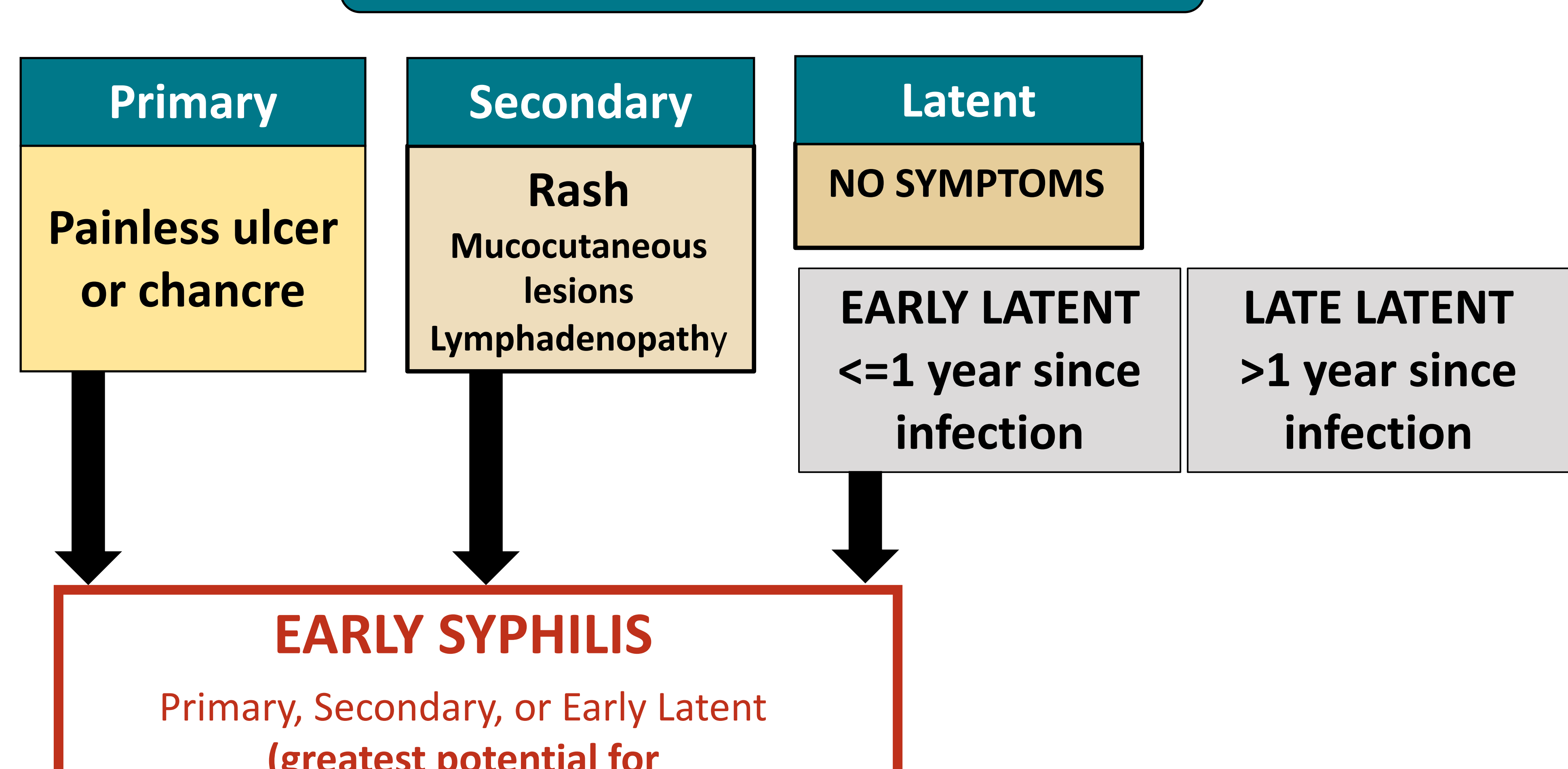








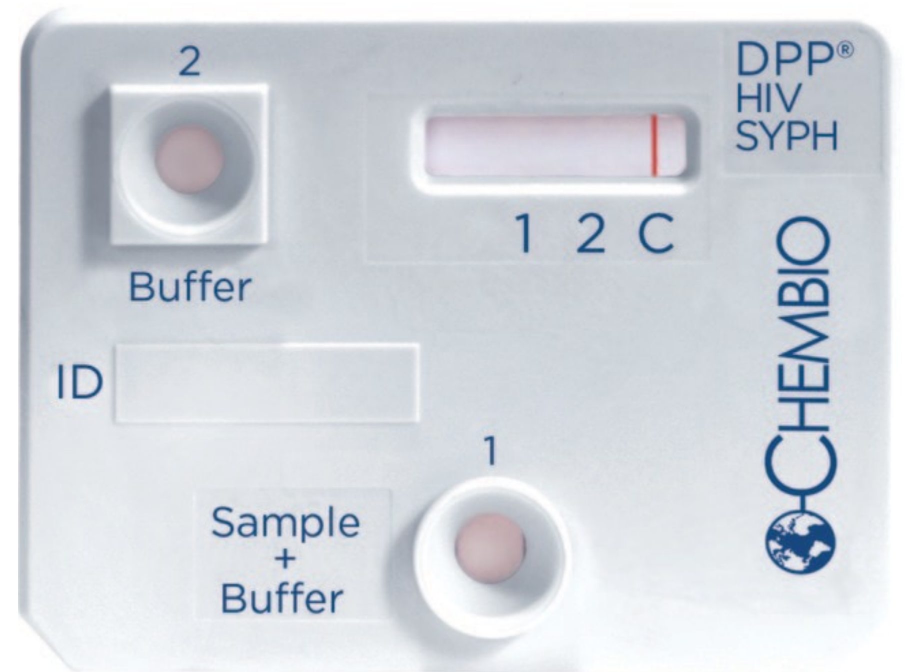
Syphilis: Clinical Stages



Laboratory Diagnosis of Syphilis

- Traditional Algorithm begins with nontreponemal test (e.g. RPR, VDRL) with confirmation using a treponemal test (e.g. TPPA, EIA, FTA-ABS, TPHA)
- Reverse Sequence algorithm begins with treponemal test with confirmation using a nontreponemal test

Rapid Dual HIV/Syphilis Test



- Single manufacturer with FDA approval in the U.S.
- Fingerstick
- 15 minutes for results
- CLIA approval imminent
- Sensitivity: >99% for HIV and >94% for T. pallidum

1. DPP HIV-Syphilis System | FDA
2. Chembio Diagnostic Systems, Inc. DPP HIV-Syphilis Technology: Chembio DPP | Fisher Scientific

Adult Syphilis Treatment

- Primary, Secondary and Early Latent Stages
  - **Benzathine penicillin G** 2.4 million units IM in a single dose
- Unknown Duration and Late Latent
  - **Benzathine penicillin G** 7.2 million units total, administered as 3 doses of 2.4 million units IM each at 1-week intervals
- Neurosyphilis, Ocular Syphilis, or Otosyphilis Among Adults
  - **Aqueous crystalline penicillin G** 18–24 million units per day, administered as 3–4 million units IV every 4 hours or continuous infusion for 10–14 days
  - Alternative: **Procaine penicillin G** 2.4 million units IM once daily PLUS **Probenecid** 500 mg orally 4 times/day, both for 10–14 days

Syphilis response: Best practices in high burden areas

- Support active case finding through **case investigation and partner elicitation**
- **Rapid treatment** of cases and sexual partners by stage of infection
- **Presumptive treatment** (prior to test results) of sexual partners of syphilis cases
- **Presumptive treatment** of people with symptoms consistent with syphilis
- **Screening of pregnant women** at first prenatal visit, during 3rd trimester and again at delivery.
- **Expanded screening** to at-risk communities of sexually active adults and adolescents (schools, corrections, emergency department, primary care, community venues, parole centers, work physicals)
- **Field treatment** with benzathine penicillin for people with syphilis unable or unwilling to present to a medical facility
- **Electronic health record (E H R)** reminders for screening and standard order sets for testing and treatment)

Chlamydia — Rates of Reported Cases by Year, United States, 1984–2020

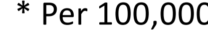
Rate*

600
500
400
300
200
100
0

Added to the Nationally Notifiable Conditions List

1984 1994 2004 2014 2020

Year


* Per 100,000

Chlamydia — Rates of Reported Cases by Race/Hispanic Ethnicity, United States, 2016–2020

Rate*

1,500
1,000
500
0

2016 2017 2018 2019 2020

Year

Black/AA
AI/AN
NH/PI
Hispanic/Latino
Multiracial
White
Asian

* Per 100,000

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

Chlamydia Screening

- Annual screening for young sexually active **women (<25 yrs)**
- Screening of sexually active **young men** should be considered in areas with high prevalence of infection
- **Pregnant** women <25 years and pregnant women at risk, repeat in 3rd tri.
- At minimum, annual* screening of **MSM** at sites of exposure (urethral/pharyngeal/rectal)
- At minimum, annual* screening of **HIV-infected** persons.
- At minimum, bi-annual* screening for persons on **PrEP,**
- Women ≤35 years and men <30 years of age in **corrections** facilities at intake as opt out screening

***More often based on risk**

STI Treatment Guidelines (cdc.gov)

Laboratory diagnosis of Chlamydia

- Nucleic acid amplification testing (NAAT)
- Optimal sampling for women is via vaginal swab either self-collected or provider collected. First catch urine can also be used.
- Optimal sampling for men is via first catch urine
- Men and women should be also tested at pharyngeal and rectal sites via swab based on reported sites of exposure.

STI Treatment Guidelines (cdc.gov)

Chlamydia Treatment

- Recommended Regimen
  - Doxycycline 100mg BID x 7 days
- Alternative Regimens
  - Azithromycin 1gm orally in a single dose OR
  - Levafloxacin 500mg QD x 7 days

*Retest persons diagnosed with chlamydia or gonorrhea 3 months after treatment to detect repeat infection

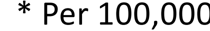
Gonorrhea — Rates of Reported Cases by Year, United States, 1941–2020

Rate*

500
400
300
200
100
0

1941 1951 1961 1971 1981 1991 2001 2011 2020

Year



* Per 100,000

Gonorrhea — Rates of Reported Cases by Race/Hispanic Ethnicity, United States, 2016–2020

Rate*

800
600
400
200
0

Black/AA
AI/AN
NH/PI
Multiracial
Hispanic/Latino
White
Asian

2016 2017 2018 2019 2020

Year

* Per 100,000

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Gonorrhea Screening Recommendations

- Annual screening for young sexually active **women (<25 yrs)**
- Screening of asymptomatic sexually active young men is not currently recommended due to inconclusive cost benefit data analyses
- **Pregnant** women <25 years and older women at risk, repeat in 3rd trim.
- At minimum, annual* screening of sexually active **MSM** at exposed sites (urethral/pharyngeal/rectal)
- At minimum, annual* screening of **HIV-infected** persons
- At minimum, bi-annual* screening for persons on **PrEP.**
- Women ≤35 years and men <30 years of age in **corrections** facilities at intake as opt out screening

***More often based on risk**

[STI Treatment Guidelines (cdc.gov)]

Laboratory diagnosis of Gonorrhea

- Nucleic acid amplification testing (NAAT)
- Optimal sampling for women is via vaginal swab either self-collected or provider collected. First catch urine and liquid- based cytology specimens can also be used.
- Optimal sampling for men is via first catch urine
- Men and women should be also tested at pharyngeal and rectal sites via swab based on reported sites of exposure.
- Culture remains available for antimicrobial susceptibility testing
- Gram stain has low sensitivity

STI Treatment Guidelines (cdc.gov)

Treatment of Uncomplicated Gonococcal Infection of the Cervix, Urethra, or Rectum Among Adults and Adolescents

- **Ceftriaxone** 500 mg* IM in a single dose for persons weighing <150 kg
- For persons weighing ≥150 kg, 1 g ceftriaxone should be administered.

*If chlamydial infection has not been excluded, providers should treat for chlamydia with doxycycline 100 mg orally 2 times/day for 7 days.
**Retest persons diagnosed with chlamydia or gonorrhea 3 months after treatment to detect repeat infection
STI Treatment Guidelines (cdc.gov

Questions?

Thank You

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