

# Sexually Transmitted Infections Update 2019

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- No Conflicts of Interest

# Case in my HIV clinic

HPI: 35yo M with well controlled HIV presents for routine visit. No acute complaints. No new medical problems. Tolerating HIV meds well. Stopped smoking. Depression improved on SSRI.

PE: VSS, AAO, RRR, CTAB, no new rash

Assessment: HIV follow up doing well.

Plan:

- Obtain CD4, HIV VL, CBC with diff, BMP, LFTs
- Influenza vaccination
- Refill ART (biktarvy)
- Follow up in clinic in 6 months

Labs:

- CBC: WBC 8K HCT 43% Plts 215K
- SCr: 1.0
- **AST 100 ALT 125** Tbili 1.2 (3m prior AST 24 ALT 29 T bili 1.1)

Plan #2:

- Hold biktarvy and repeat LFTs in 2 weeks

Labs 2 weeks after visit:

- **AST 350 ALT 399** Tbili 1.1

# Case continued

## Follow up visit 4 weeks after initial visit:

- 2 weeks prior to initial visit, reports viral syndrome with new ulcerative anal lesion (now gone) after developing multiple new sex partners.
- Exam: Rash on palms and soles
- Labs:
  - **AST 497 ALT 450** Tbili 1.1
  - **RPR 1:64** (previously Neg)
  - **Hepatitis C Ab positive; HCV viral load 1,800,000** (previously Neg)

## Assessment:

- 35yo M with HIV with high risk sexual behavior presenting with secondary syphilis and acute hepatitis C

## Plan:

- Restart Biktarvy
- Treat Secondary syphilis with 2.4MU Pen-G 2.4MU IM x1
- Monitor LFTs during and refer to Hepatology if does not clear in 6m
- Ask about sexual behavior in future during clinic visits....

# The Five P's: Partners, Practices, Prevention of Pregnancy, Protection from STDs, and Past History of STDs

## 1. Partners

- “Do you have sex with men, women, or both?”
- “In the past 2 months, how many partners have you had sex with?”
- “In the past 12 months, how many partners have you had sex with?”
- “Is it possible that any of your sex partners in the past 12 months had sex with someone else while they were still in a sexual relationship with you?”

## 2. Practices

- “To understand your risks for STDs, I need to understand the kind of sex you have had recently.”
- “Have you had vaginal sex, meaning ‘penis in vagina sex?’” If yes, “Do you use condoms: never, sometimes, or always?”
- “Have you had anal sex, meaning ‘penis in rectum/ anus sex?’” If yes, “Do you use condoms: never, sometimes, or always?”
- “Have you had oral sex, meaning ‘mouth on penis/ vagina?’”
- For condom answers:
  - If “never”: “Why don’t you use condoms?”
  - If “sometimes”: “In what situations (or with whom) do you use condoms?”

## 3. Prevention of pregnancy

- “What are you doing to prevent pregnancy?”

## 4. Protection from STDs

- “What do you do to protect yourself from STDs and HIV?”

## 5. Past history of STDs

- “Have you ever had an STD?”
- “Have any of your partners had an STD?”

Additional questions to identify HIV and viral hepatitis risk include:

- “Have you or any of your partners ever injected drugs?”
- “Have you or any of your partners exchanged money or drugs for sex?”
- “Is there anything else about your sexual practices that I need to know about?”



# Sexually Transmitted Infections (STIs)

- HSV
- HPV
- HIV
- *Chlamydia trachomatis*
- Pediculosis pubis
- *Mycoplasma genitalium*
- Syphilis
- Trichomoniasis
- BV
- Scabies
- *Molloscum contagiosum*
- HTLV-1
- *Haemophilus ducreyi*
- *Klebsiella granulomatis*
- HAV
- HBV
- HCV
- Zika virus
- *Neisseria gonorrhoeae*
- Vaginal candidiasis
- LGV
- EBV
- CMV

# If we were in Vegas...

## The State of STDs in the United States



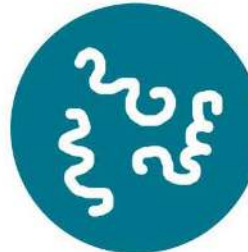
**STDs SURGE FOR THE FIFTH  
STRAIGHT YEAR, REACHING  
AN ALL-TIME HIGH.**



**1.8 million**  
CASES OF CHLAMYDIA  
19% rate increase since 2014



**583,405**  
CASES OF GONORRHEA  
63% rate increase since 2014



**115,045**  
CASES OF SYPHILIS  
71% rate increase of infectious  
syphilis since 2014



**1,306**  
CASES OF SYPHILIS  
AMONG NEWBORNS  
185% rate increase since 2014

LEARN MORE AT: [www.cdc.gov/std/](http://www.cdc.gov/std/)

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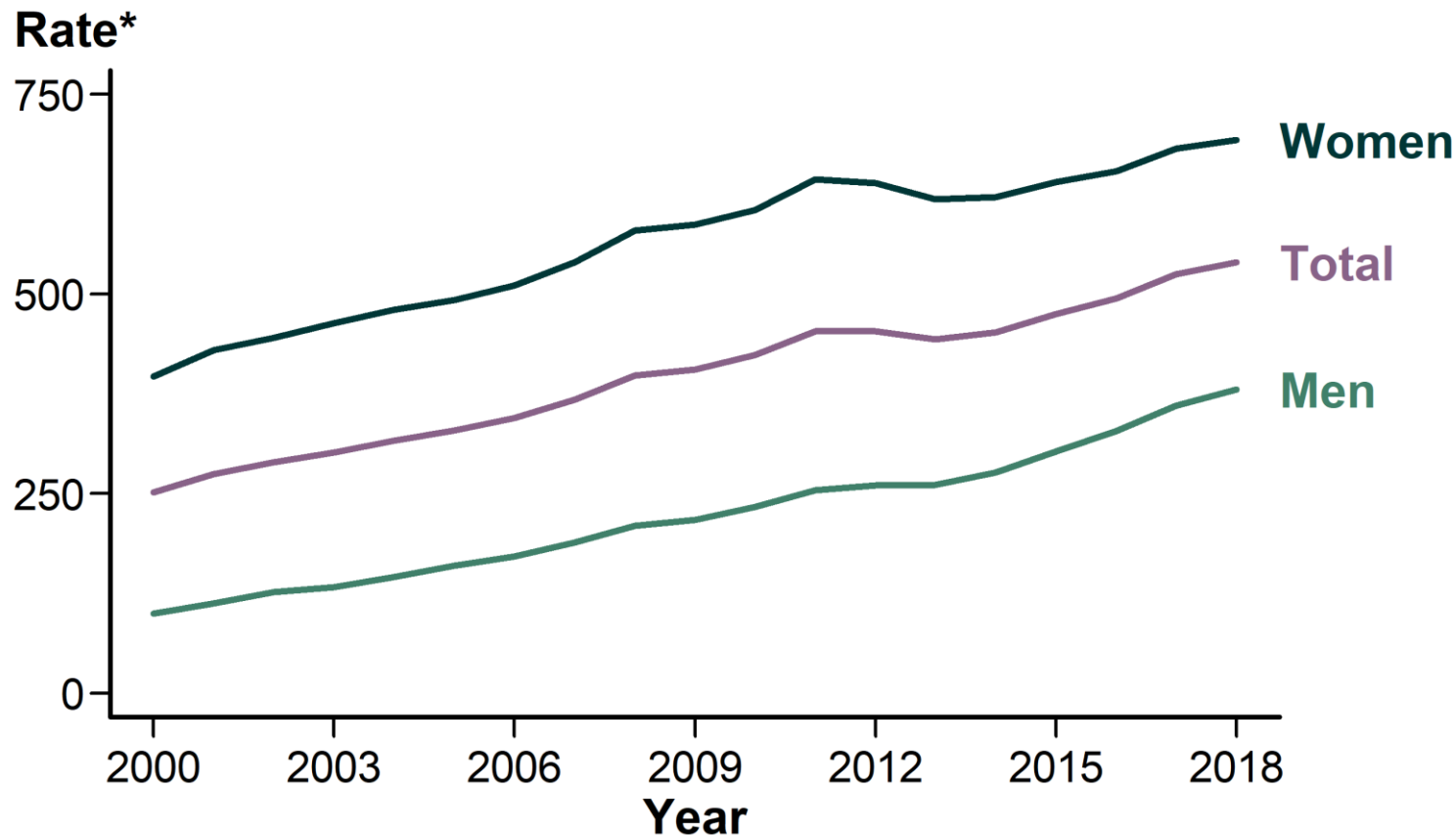
# Chlamydia

- Typically asymptomatic
- Cervicitis, Urethritis, PID (if untreated)
- Treatment:
  - Azithromycin 1g x1 or Doxy 100mg PO BID x7d
  - Alt: Erythromycin base 500mg PO QID x7d
  - Alt: Levofloxacin 500mg qd x7d
- Refer partners (60d) for presumptive treatment

# Chlamydia

- Most common reported disease in USA
- 1,758,000 cases in 2018 (Rate: 540 per 100K)
  - Arkansas rate 588 (#11)
  - Arkansas female rate 819 (#9)
- Highest incidence and rate ever recorded
- African American and Native Americans with highest rates

**Figure 1. Chlamydia — Rates of Reported Cases by Sex, United States, 2000–2018**



\* Per 100,000.

**NOTE:** See sections A1.3 and A1.8 in the Appendix for more information on chlamydia case reporting and interpreting trends in chlamydia case reports.

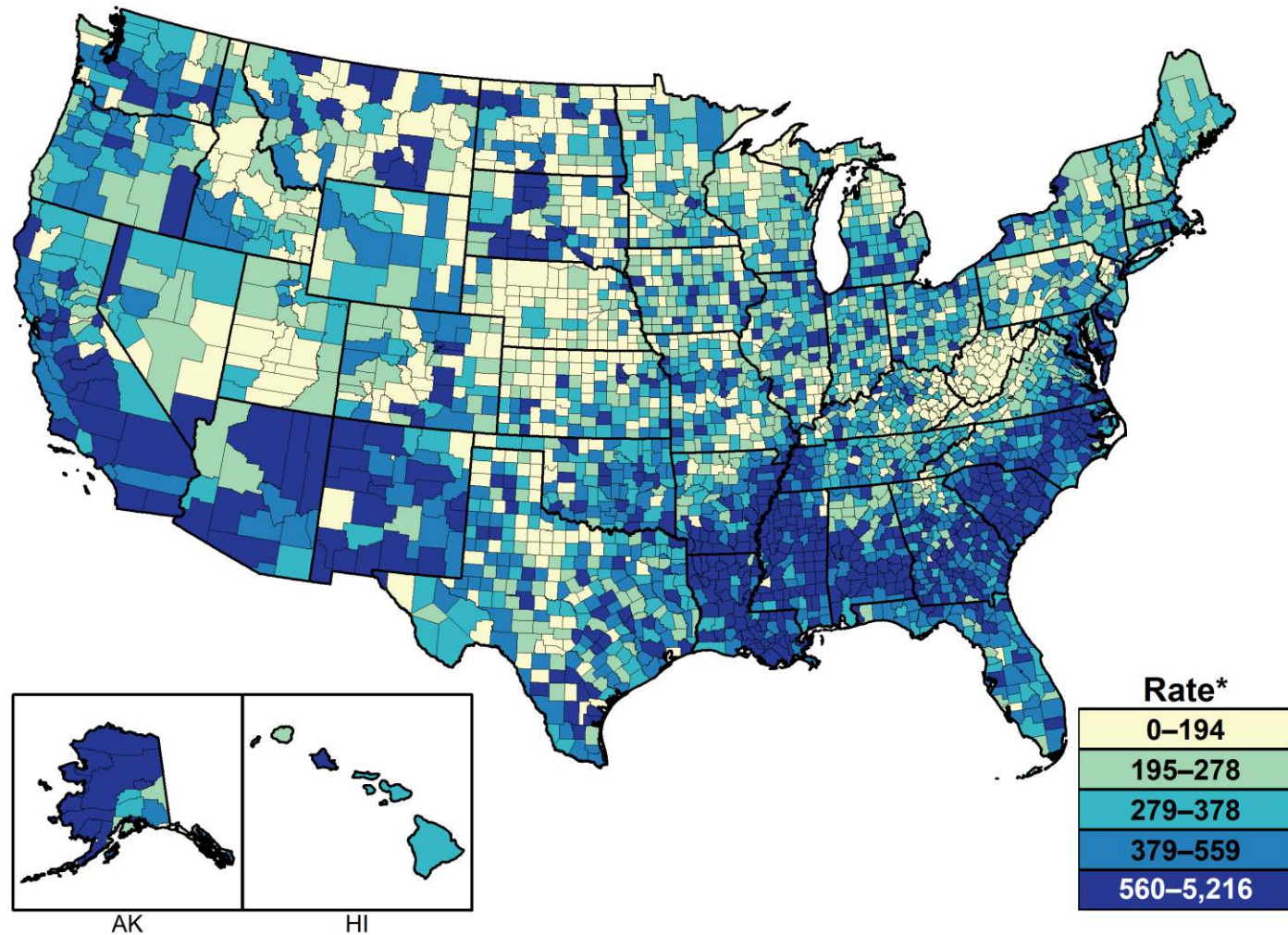
**Rate\***

107–421
422–478
479–541
542–590
591–1,299
Unavailable

State abbreviations: AK, HI, AS, GU, MP, PR, VI

**NOTE:** See Section A1.11 in the Appendix for more information on interpreting reported rates in US territories.

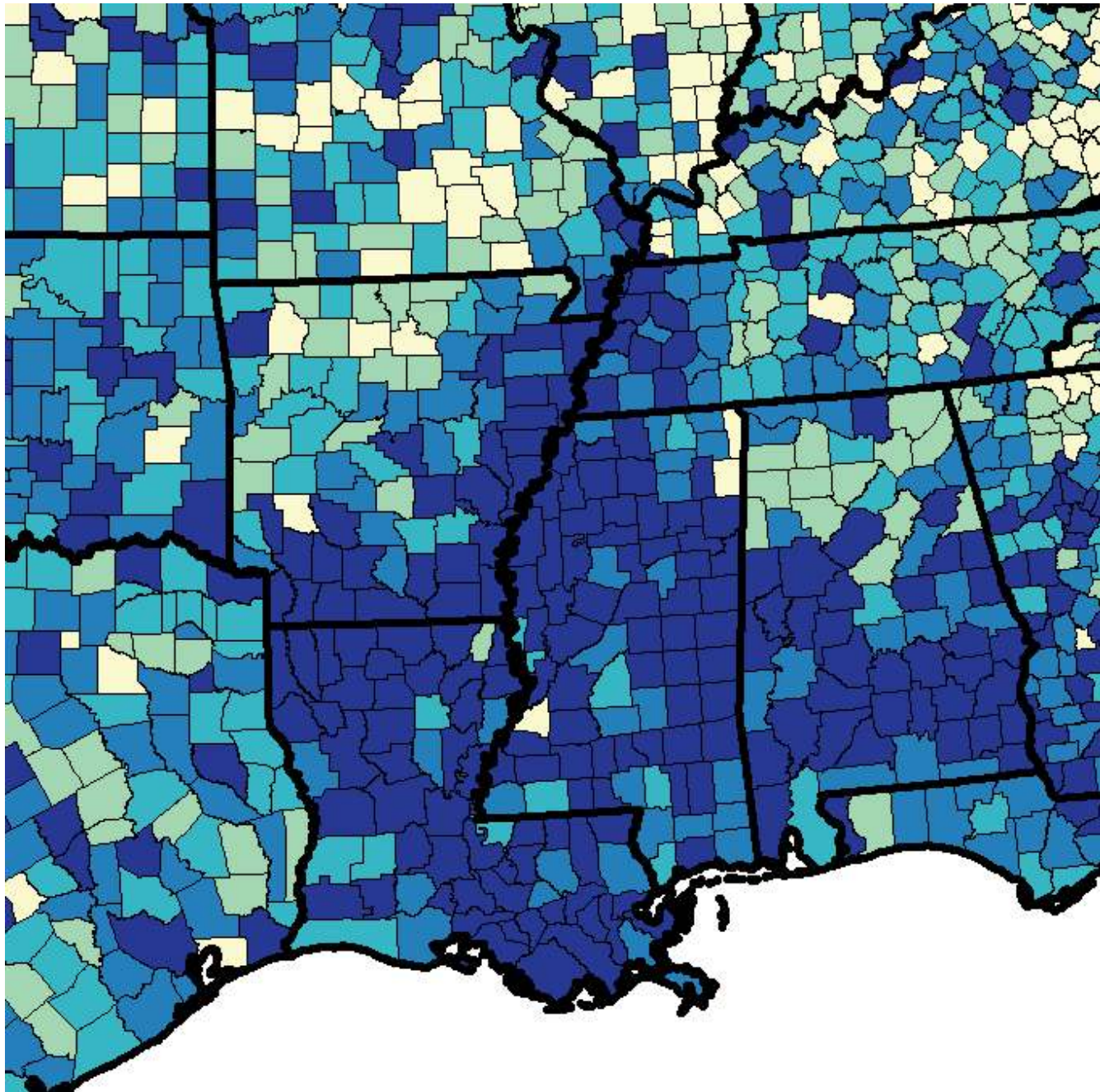
**Figure 4. Chlamydia — Rates of Reported Cases by County, United States, 2018**



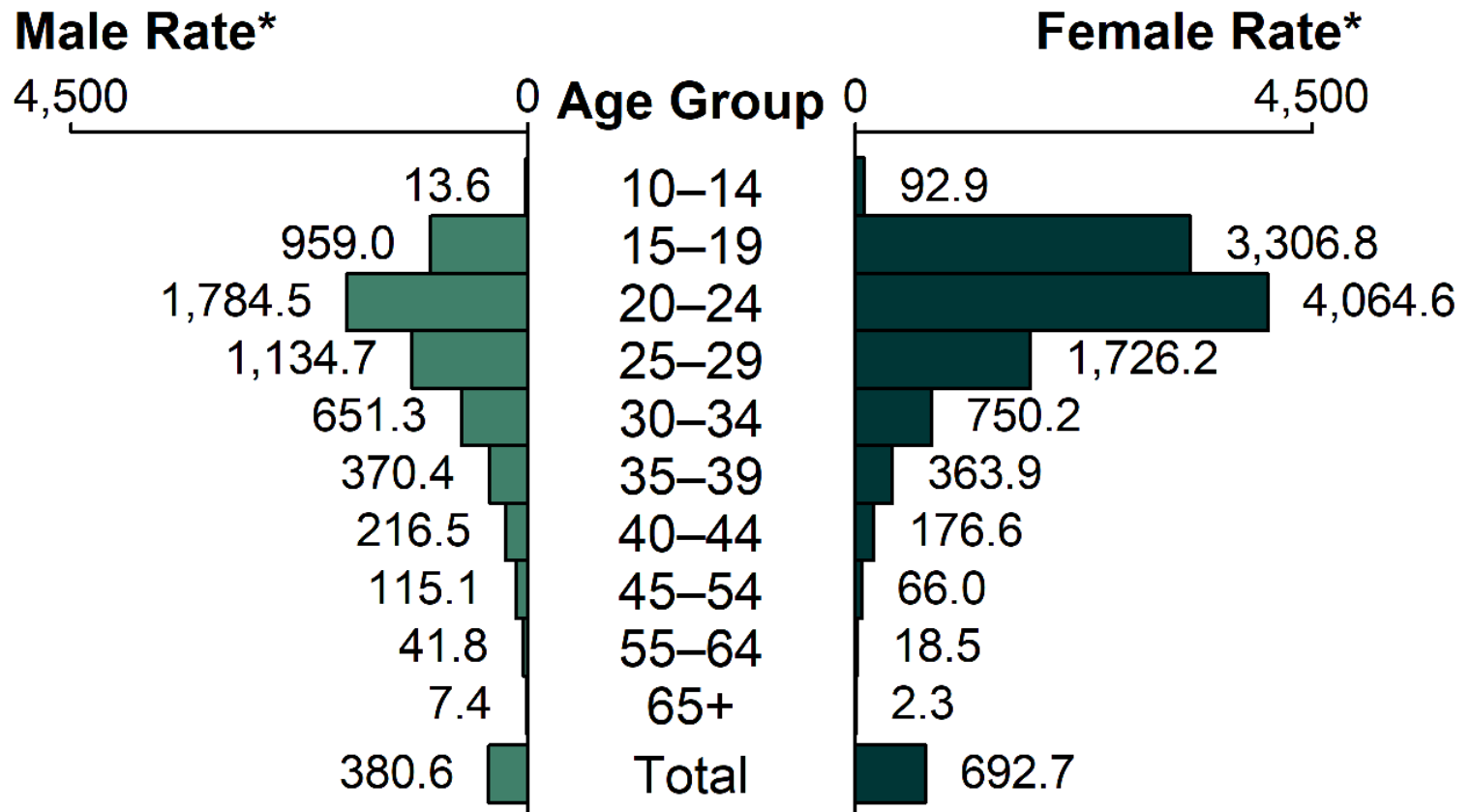
\* Per 100,000.

**NOTE:** See section A1.5 in the Appendix for more information on county-level rates.



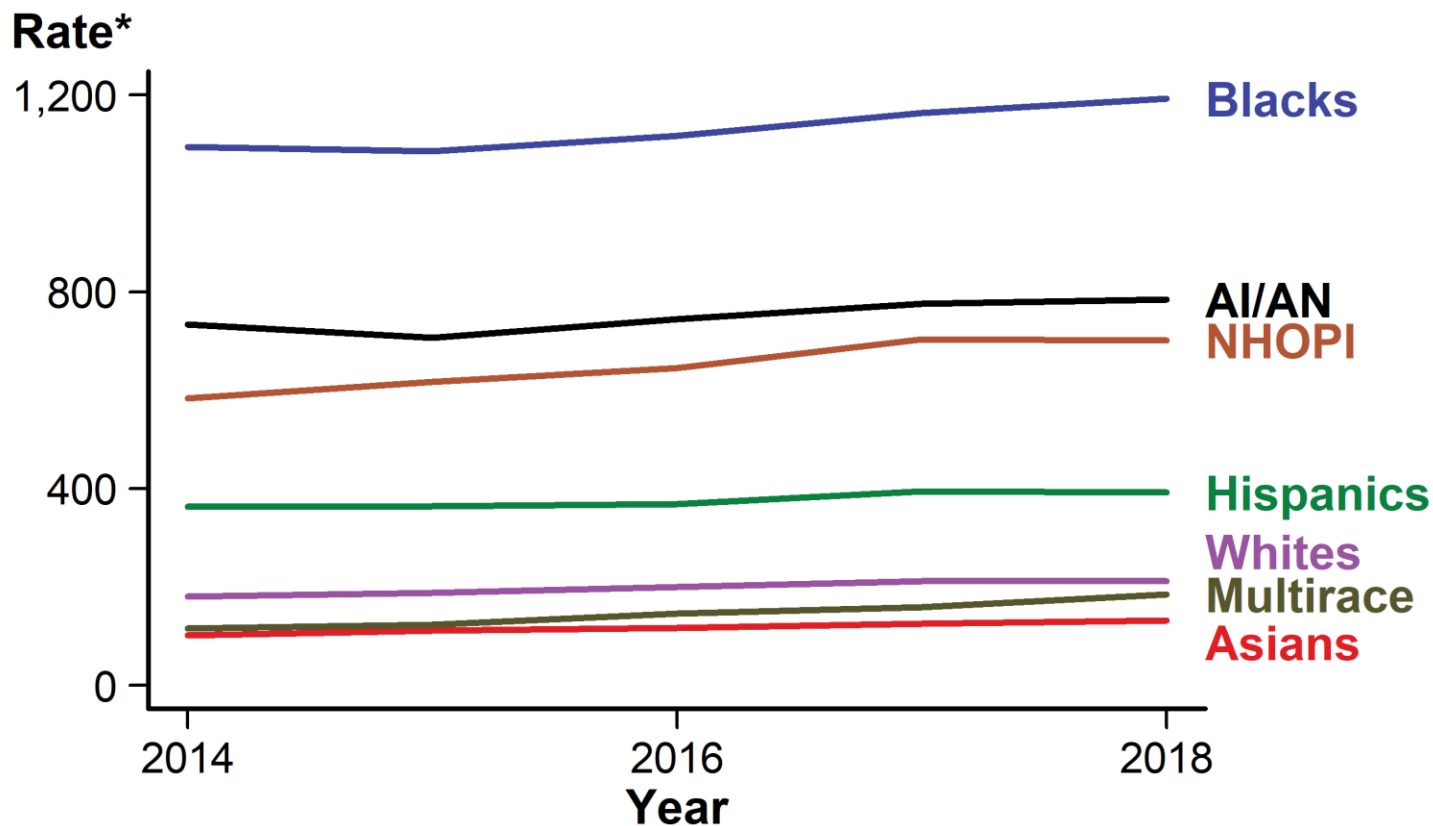


**Figure 5. Chlamydia — Rates of Reported Cases by Age Group and Sex, United States, 2018**



\* Per 100,000.

**Figure 8. Chlamydia — Rates of Reported Cases by Race/Hispanic Ethnicity, United States, 2014–2018**



\* Per 100,000.

**NOTE:** See Section A1.5 in the Appendix for information on reporting STD case data for race/Hispanic ethnicity.

**ACRONYMS:** AI/AN = American Indians/Alaska Natives; NHOPI = Native Hawaiians/Other Pacific Islanders.



# Chlamydia Screening

- Women:
  - <25yo sexually active (annually)
  - >25yo sexually active new/multiple partners (annually)
  - Pregnant: <25yo, increased risk, retest 3<sup>rd</sup> trimester
  - HIV+ (annually)
  - Test of cure 3m post treatment (3 wks if pregnant)
- Men:
  - Consider if young and sexually active
  - MSM site specific (annually)
  - HIV+ (annually)

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- CMV

PT GREENPT

DRUG-RESISTANT

**GONORRHEA**

**ALERT!**

**FREESTDCHECK.ORG**

475 ATLANTIC AVE. 2ND FL (917) 246-7498

AHF



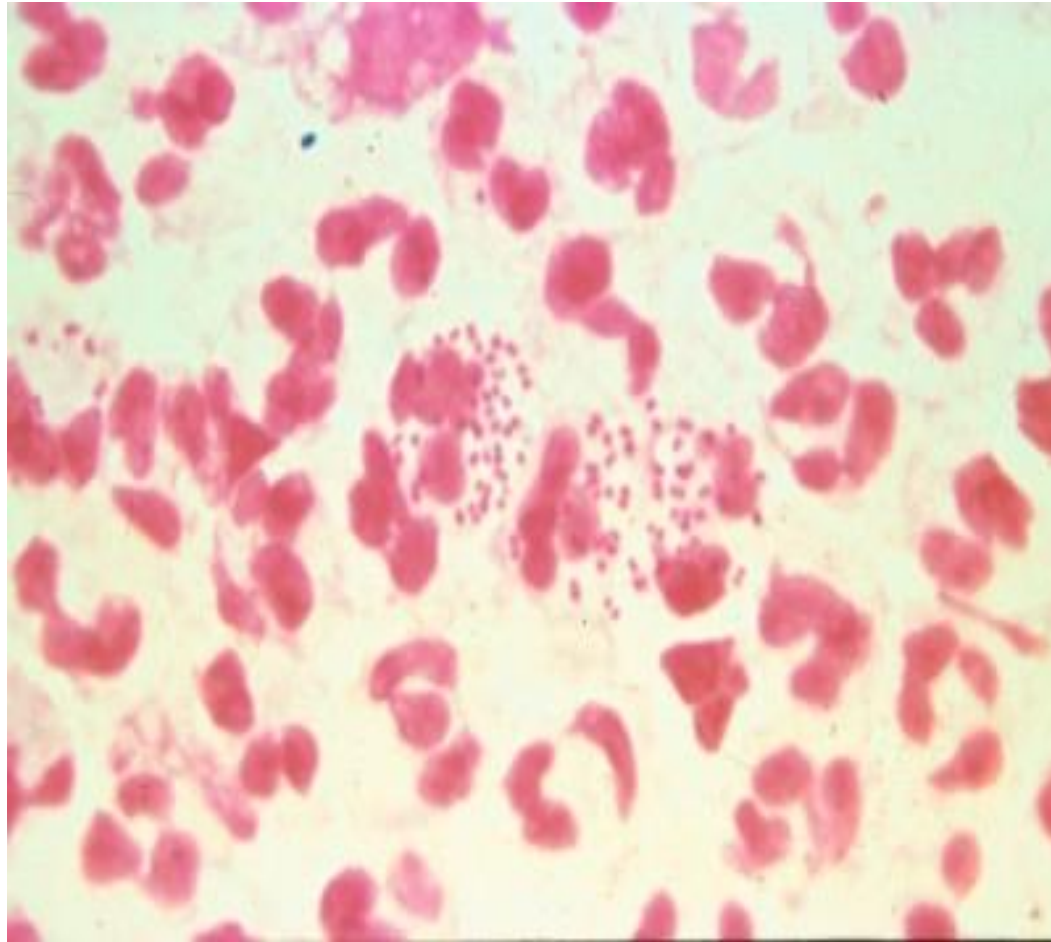
**\$1**

Any Size  
Soft Drink



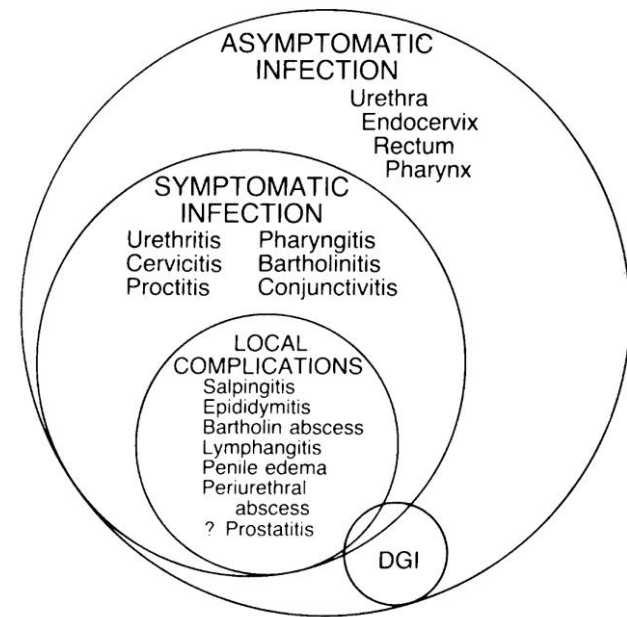
# Gonorrhea:

## Gram Stain of Urethral Discharge



# Gonorrhea

- Gram Negative Diplococci
- Urethritis and Cervicitis-→PID



- Disseminated gonococcal Infection (DGI)
  - Only about 50 % of patients with DGI have positive blood or synovial fluid cultures; in at least 80% of cases culture from a mucosal site is positive.
  - Arthritis-Dermatitis: Polyarthralgias, tenosynovitis, Hemorrhagic papules and pustules, fever may be mild or absent, more likely to have positive blood cultures
  - Septic Arthritis: Overt septic arthritis in one or 2 joints as dermatitis resolves some patients present without preceding rash. Synovial fluid contains  $>50,000$  WBC/mm<sup>3</sup>, more likely to have positive synovial fluid cultures

# DGI Dermatitis-Arthritis





# Disseminated Gonococcal Infection

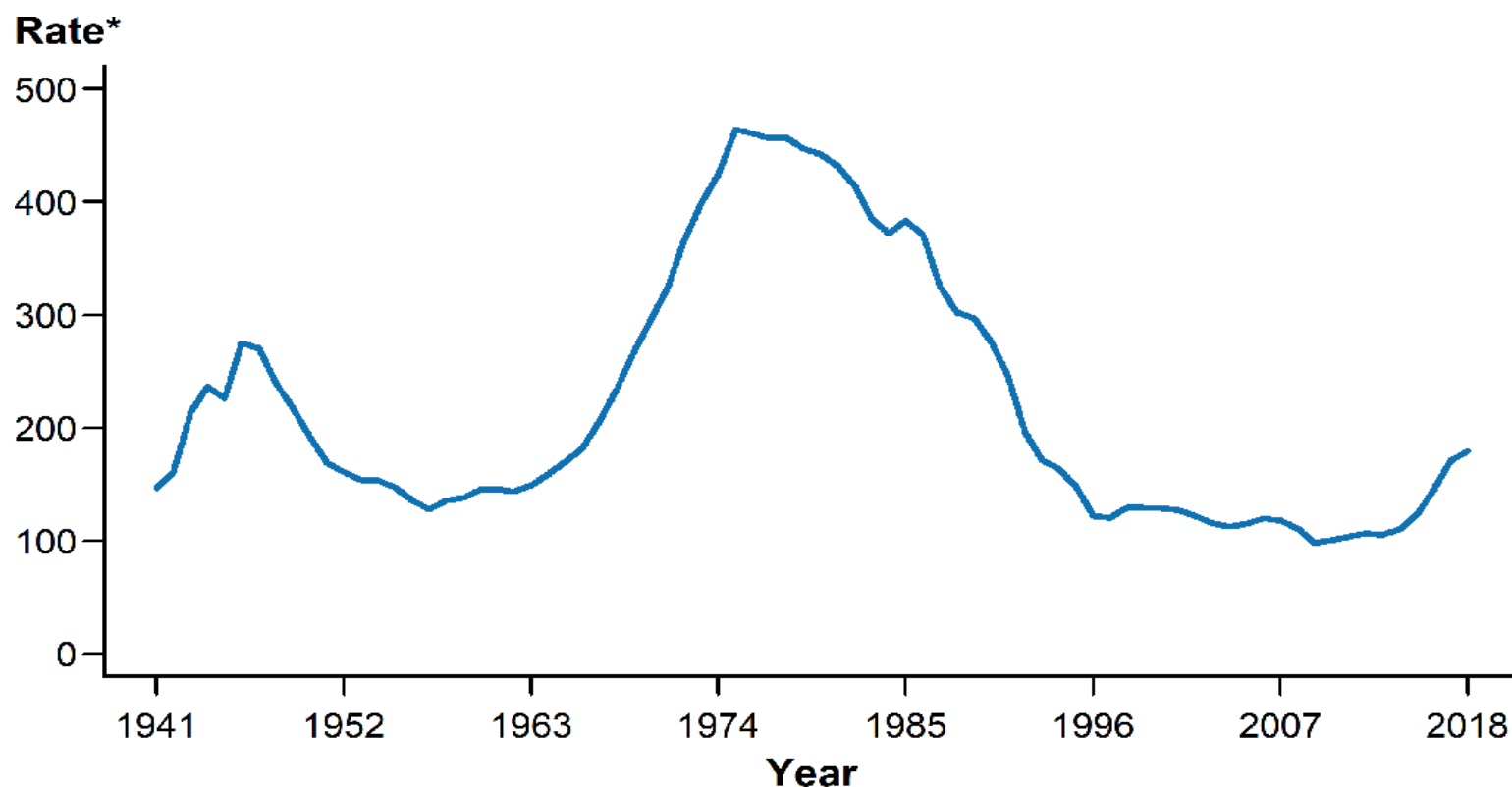


# Gonorrhea Diagnosis: Nucleic Acid Amplification Tests (NAATs)

- Supplanted culture in most clinical settings
- Based on a variety of methods, including transcription-mediated amplification
- Sensitivity is at least as good as culture; sometimes better
- Specificity is >99% with voided urine
- Particularly useful when the assay detects both gonorrhea and *Chlamydia*



# Gonorrhea — Rates of Reported Cases by Year, United States, 1941–2018



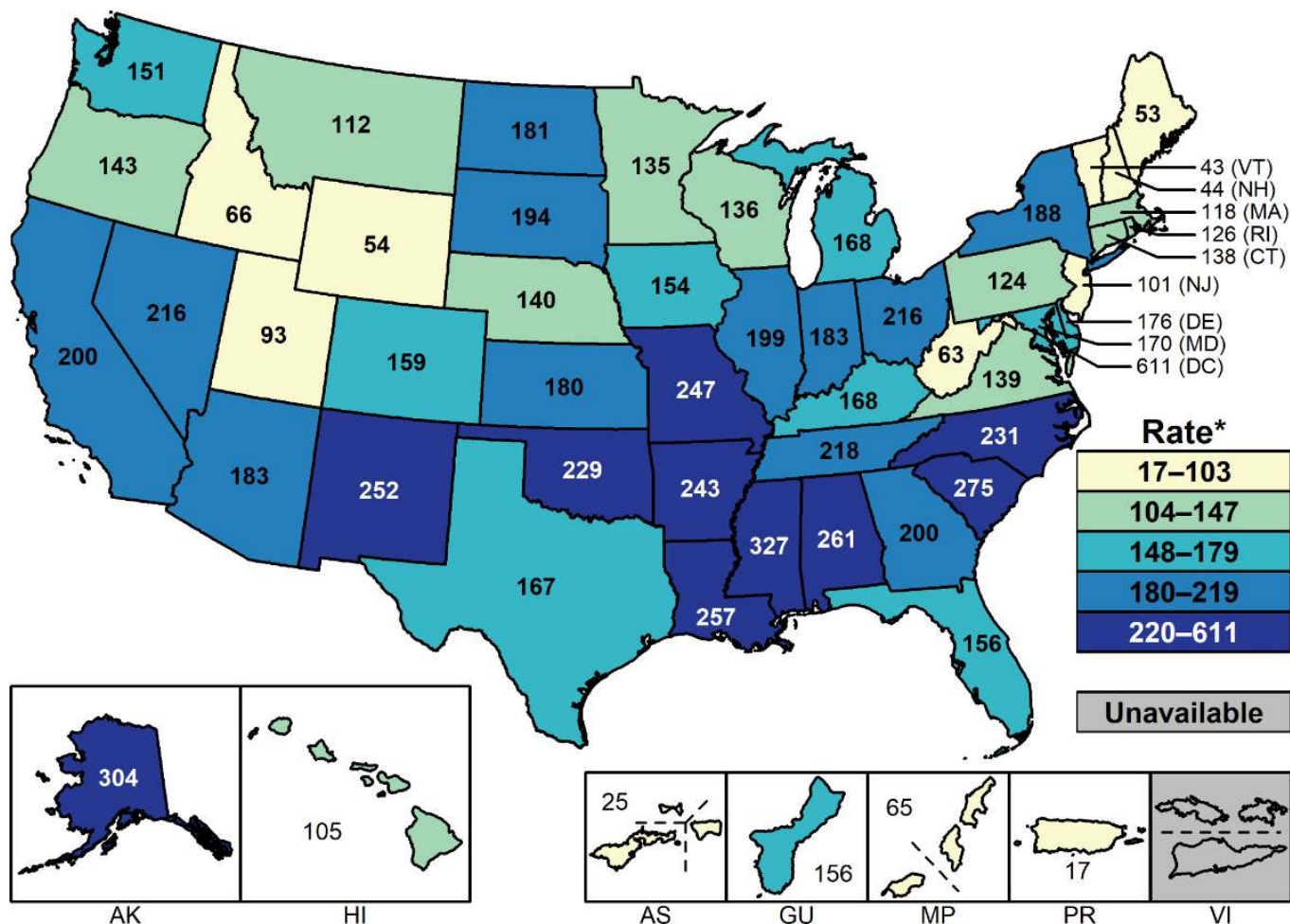
\* Per 100,000.

**NOTE:** See section A1.3 in the Appendix for more information on gonorrhea case reporting.

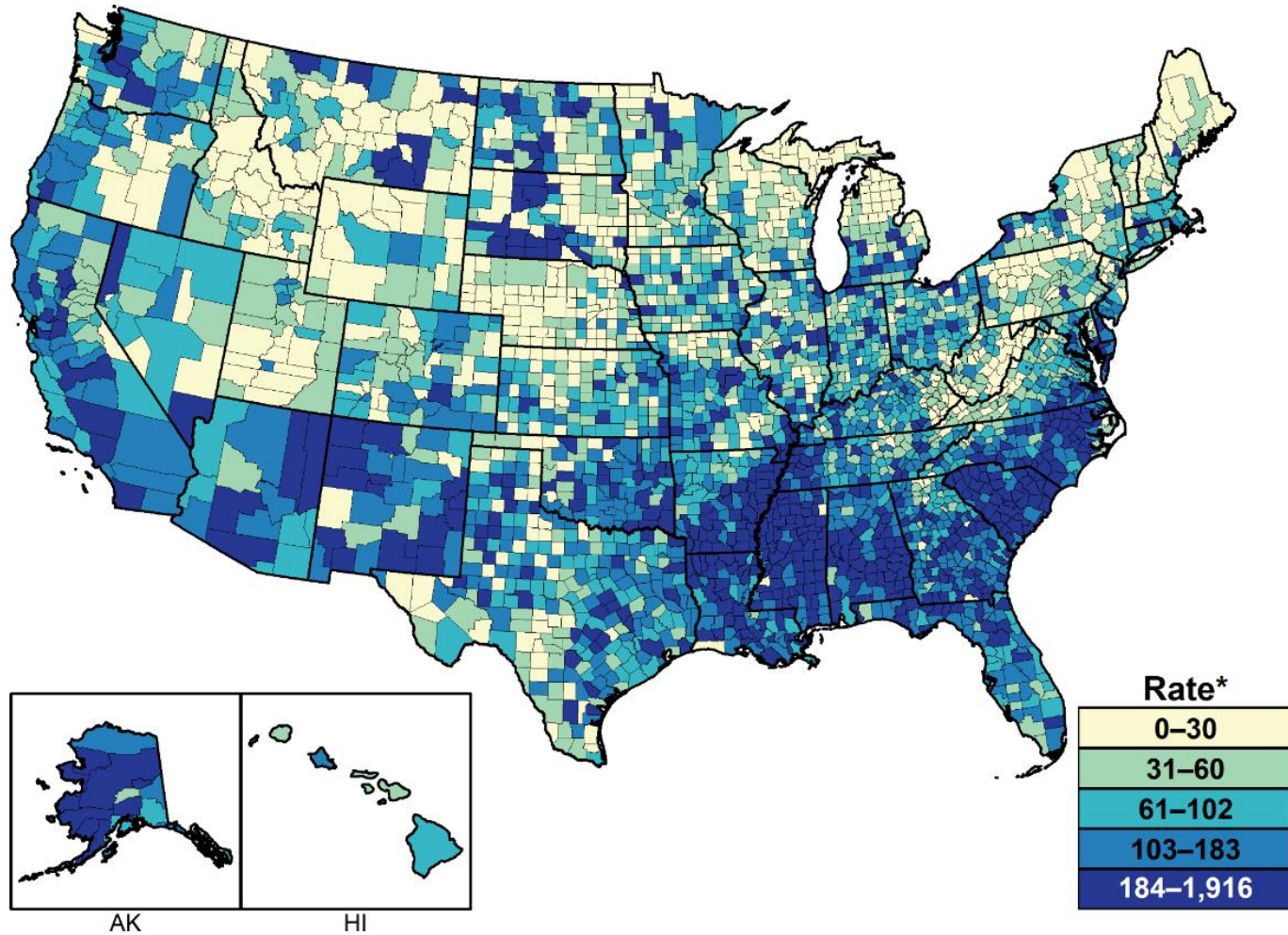


# Gonorrhea Incidence 2018:

- 583,405 US cases (Rate: 179.1 per 100K)
  - Arkansas rate 243 per 100K (#8)

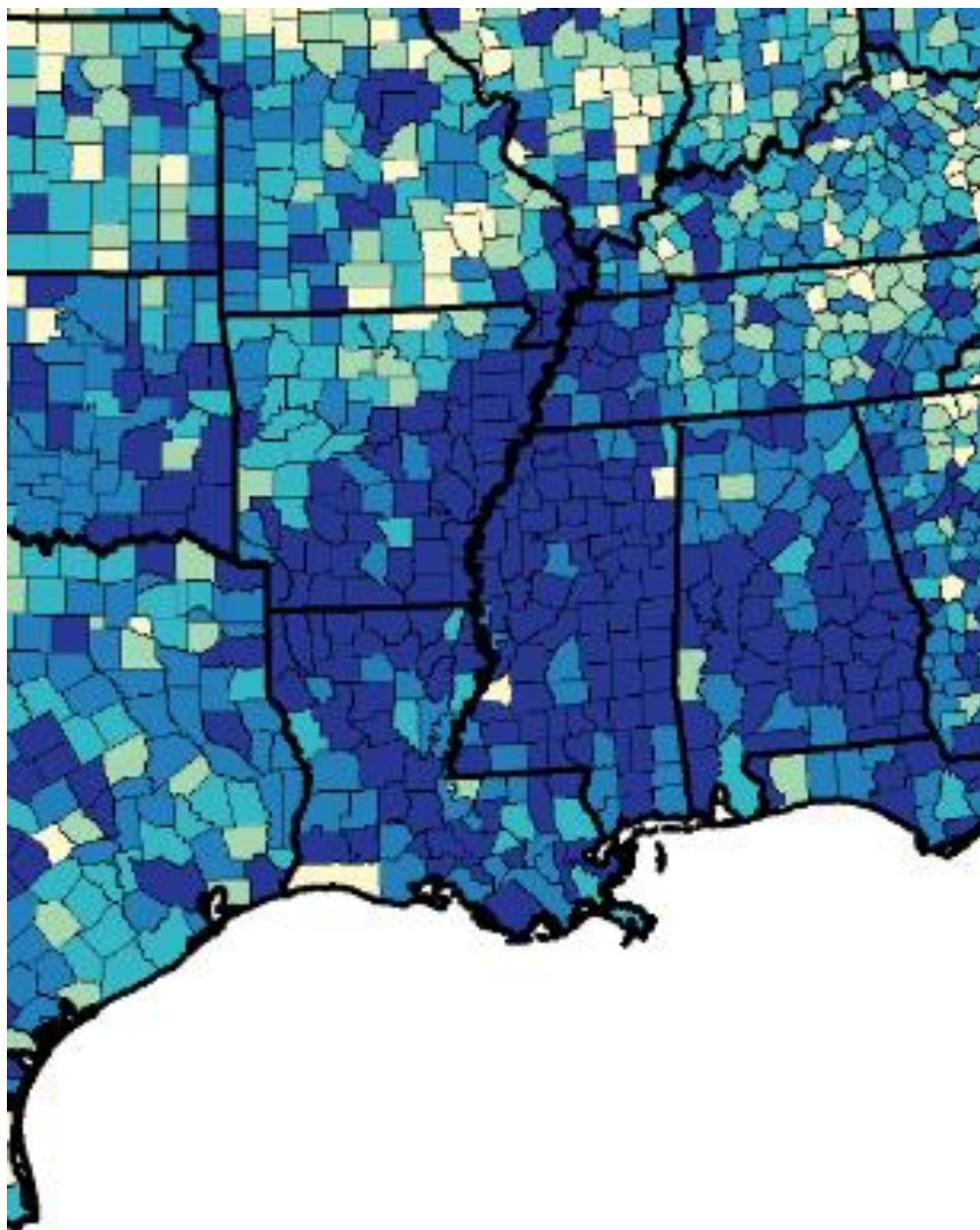


# Gonorrhea — Rates of Reported Cases by County, United States, 2018



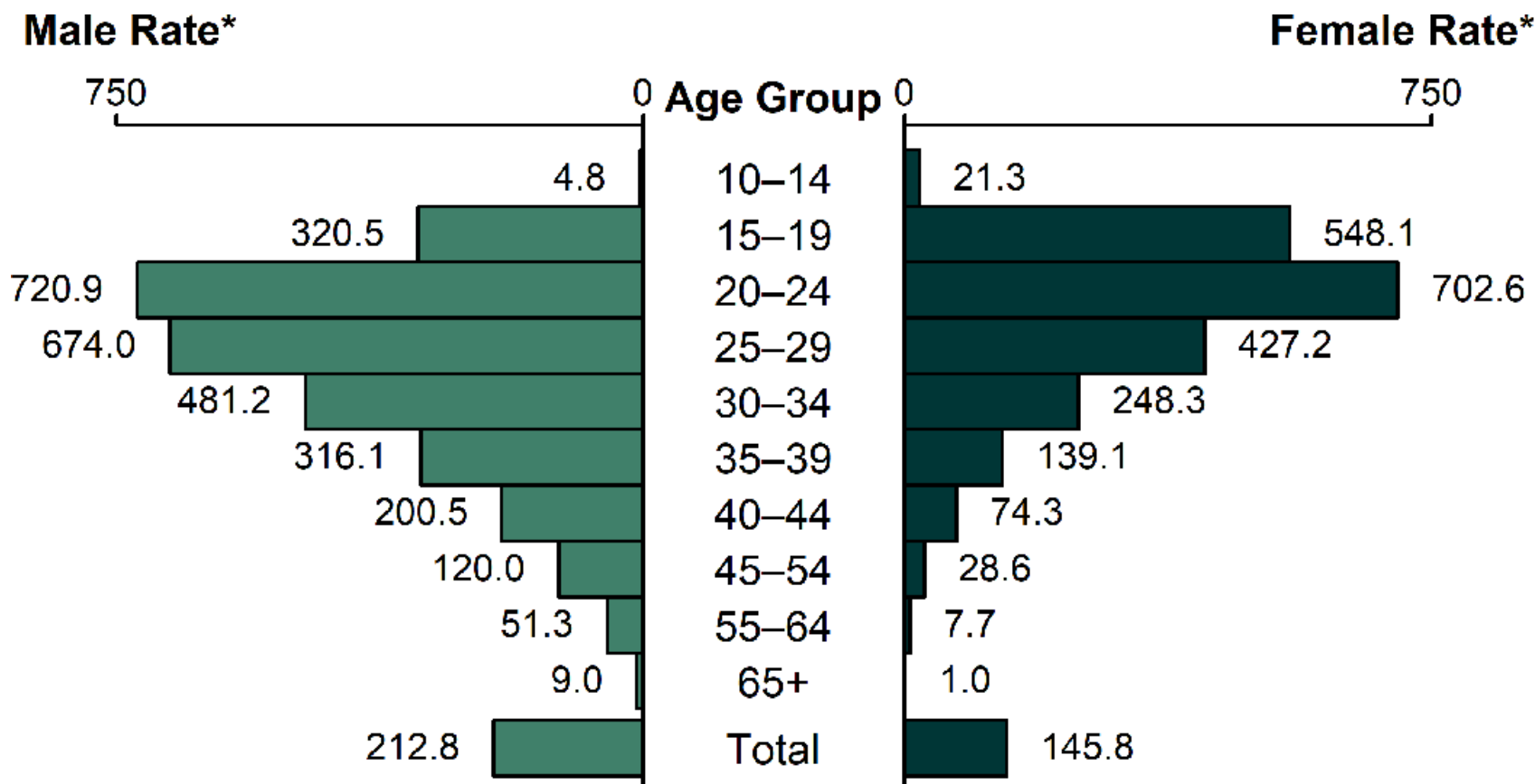
\* Per 100,000.

**NOTE:** See section A1.4 in the Appendix for more information on county-level rates.



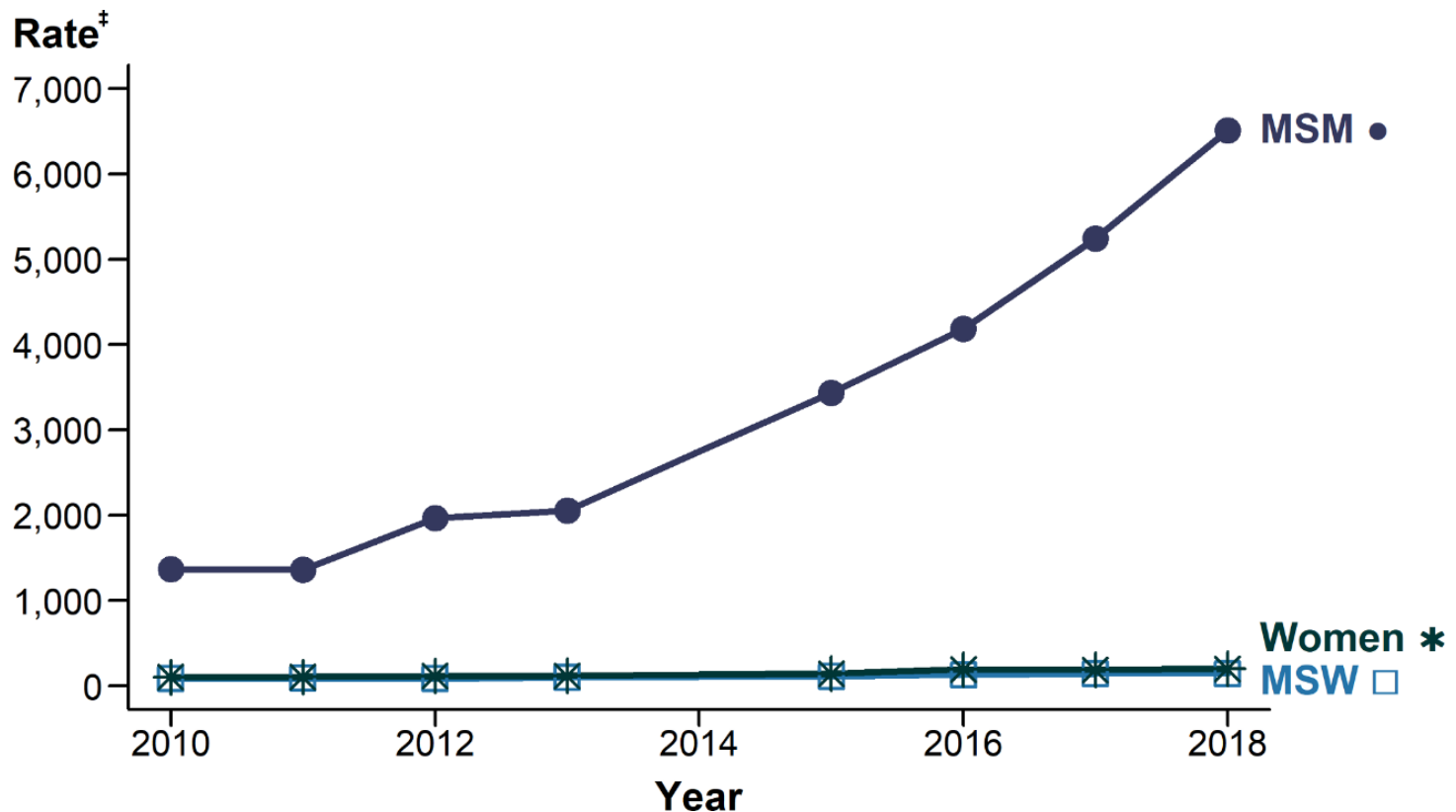


# Gonorrhea — Rates of Reported Cases by Age Group and Sex, United States, 2018



\* Per 100,000.

# Gonorrhea — Estimated\* Rates of Reported Gonorrhea Cases by MSM, MSW, and Women, STD Surveillance Network (SSuN)<sup>†</sup>, 2010–2018



\* Estimates based on interviews among a random sample of reported cases of gonorrhea (n=21,417); cases weighted for analysis. Data not available for 2014; 2013–2015 trend interpolated; trends lines overlap for MSW and women in this figure.

<sup>†</sup> Sites include Baltimore, Philadelphia, New York City, Washington State, San Francisco, and California (excluding San Francisco).

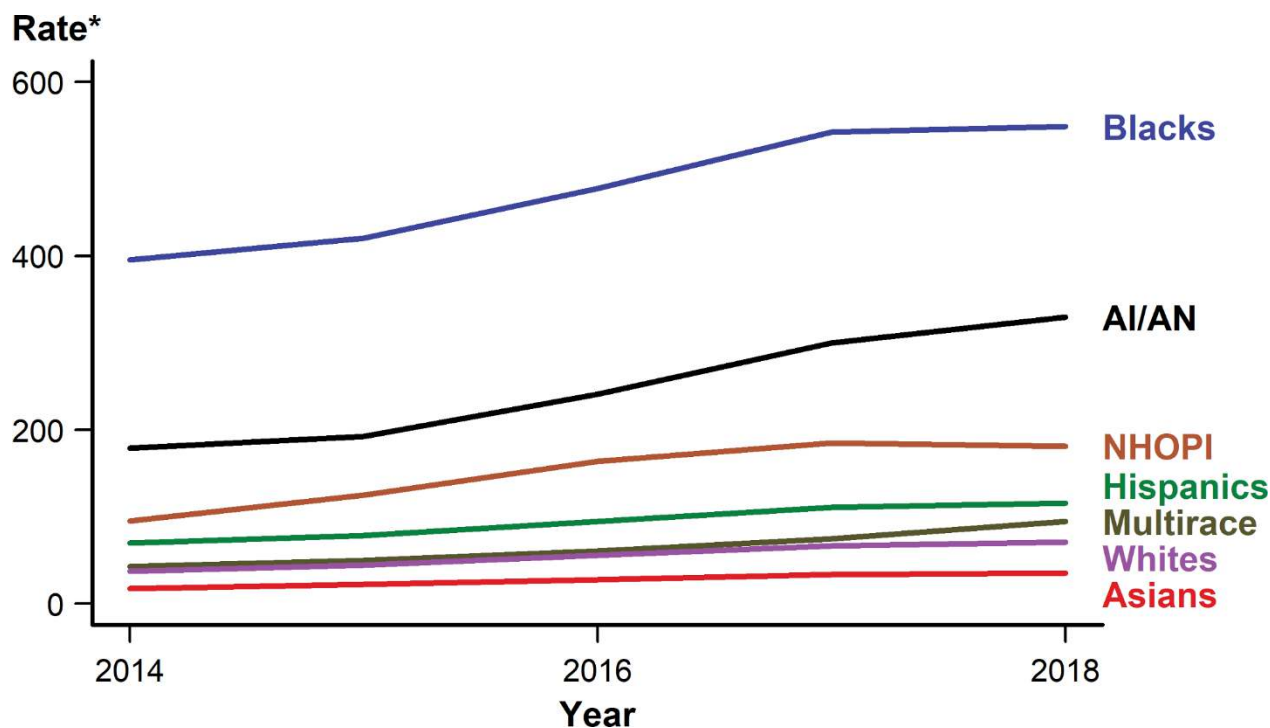
<sup>‡</sup> Per 100,000.

**ADAPTED FROM:** Stenger M, Pathela P, Anschuetz G, et al. Increases in the rate of *Neisseria gonorrhoeae* among gay, bisexual and other men who have sex with men (MSM) — findings from the STD Surveillance Network 2010–2015. *Sex Transm Dis.* 2017;44(7):393–397.

**ACRONYMS:** MSM = Gay, bisexual, and other men who have sex with men; MSW = Men who have sex with women only.



# Gonorrhea — Rates of Reported Cases by Race/Hispanic Ethnicity, United States, 2014–2018



\* Per 100,000.

**NOTE:** See Section A1.5 in the Appendix for information on reporting STD case data for race/Hispanic ethnicity.

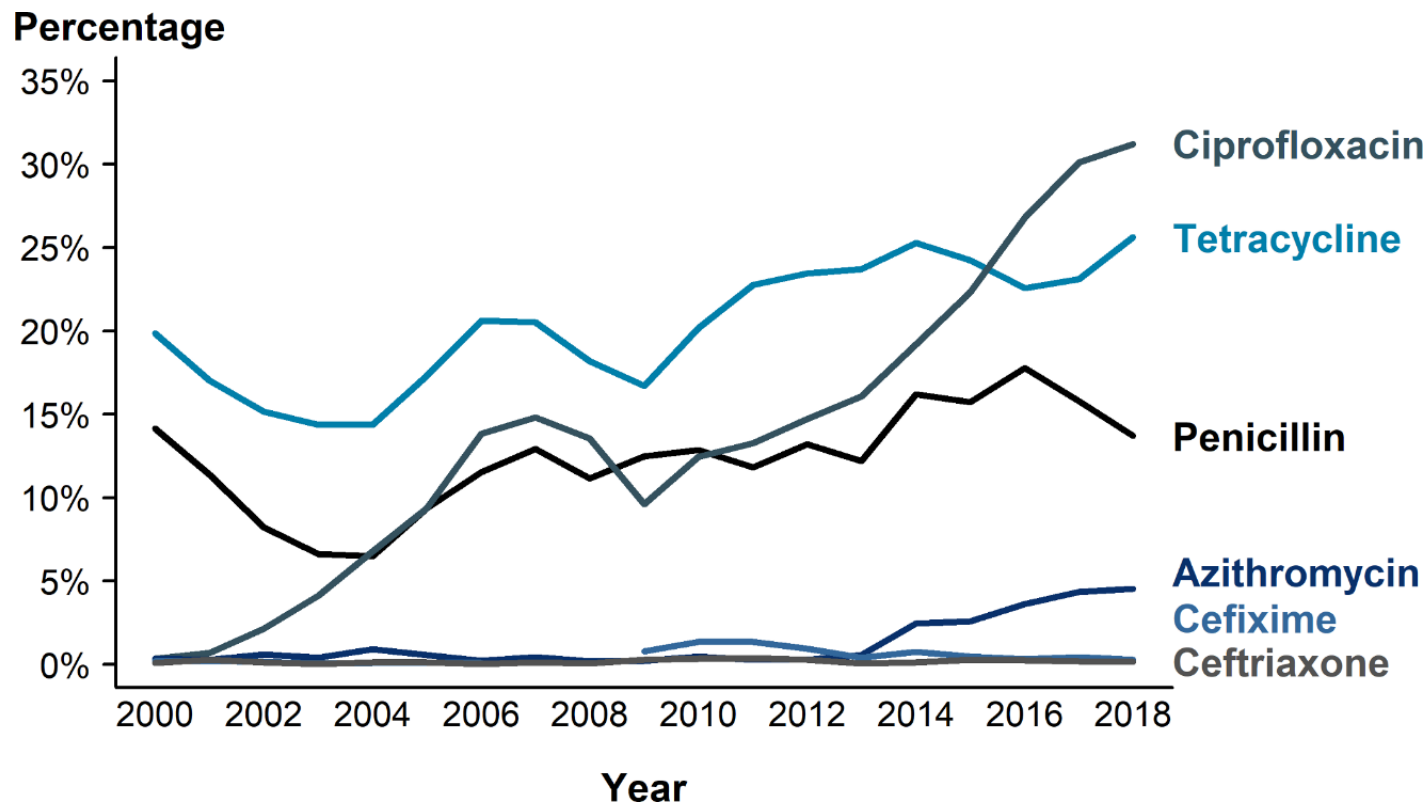
**ACRONYMS:** AI/AN = American Indians/Alaska Natives; NHOPI = Native Hawaiians/Other Pacific Islanders.

# Gonorrhea Treatment

- Recently, increase in ceftriaxone resistance has changed recommendation to dual therapy
  - Preferred Regimen:
    - Ceftriaxone 250mg IM x1 + Azithromycin 1g PO x1
  - Alternative:
    - Gemifloxacin 320mg PO x1+ Azithromycin 1g PO x1



# *Neisseria gonorrhoeae* — Prevalence of Tetracycline, Penicillin, or Fluoroquinolone Resistance\* or Elevated Cefixime, Ceftriaxone, or Azithromycin Minimum Inhibitory Concentrations (MICs)<sup>†</sup>, by Year — Gonococcal Isolate Surveillance Project (GISP), 2000–2018

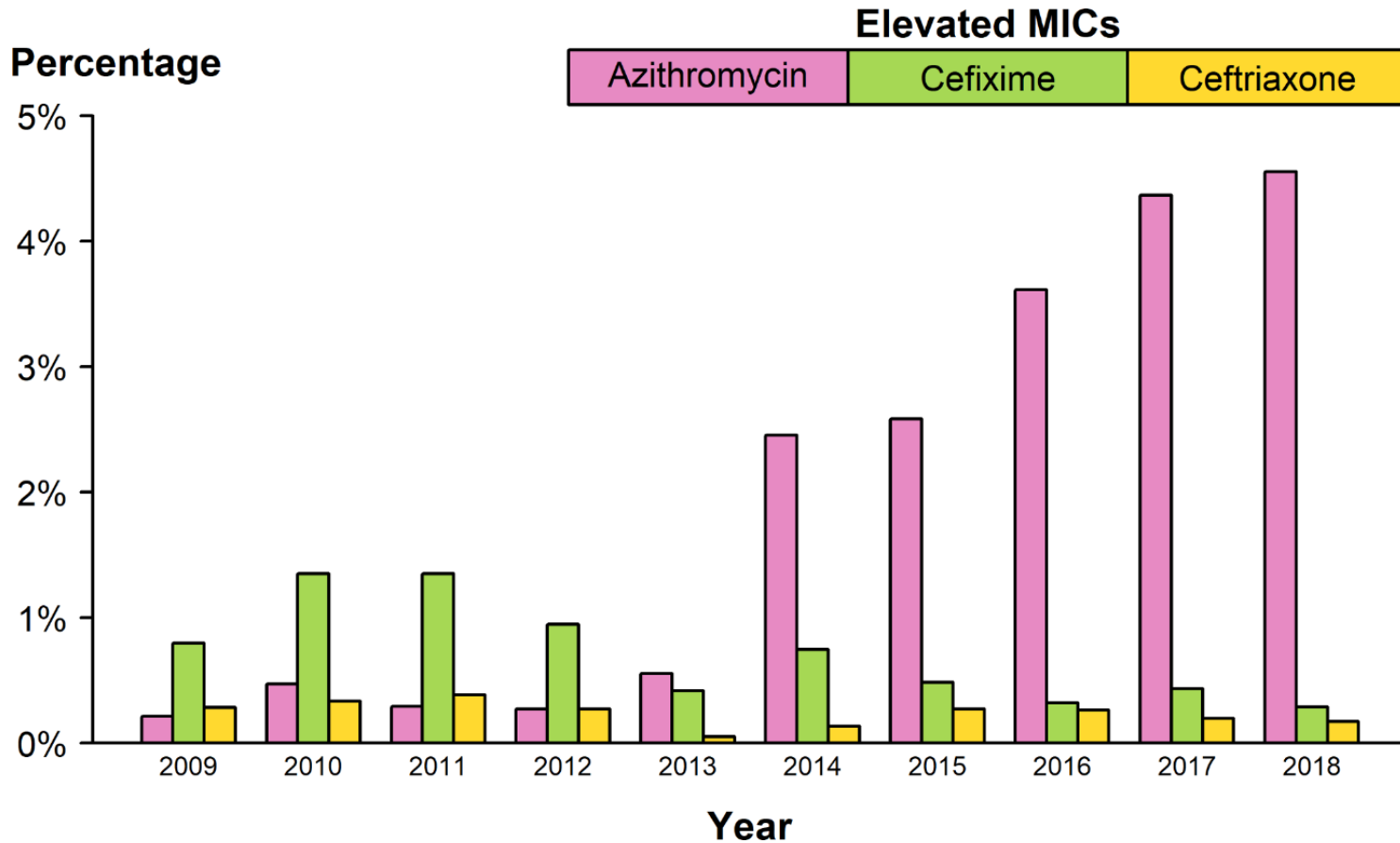


\* Resistance = Fluoroquinolone (ciprofloxacin): MIC  $\geq 1.0$   $\mu\text{g/mL}$ ; Penicillin: MIC  $\geq 2.0$   $\mu\text{g/mL}$  or Beta-lactamase positive; Tetracycline: MIC  $\geq 2.0$   $\mu\text{g/mL}$ .

<sup>†</sup> Elevated MICs = Azithromycin: MIC  $\geq 1.0$   $\mu\text{g/mL}$  (2000–2004), MIC  $\geq 2.0$   $\mu\text{g/mL}$  (2005–2018); Ceftriaxone: MIC  $\geq 0.125$   $\mu\text{g/mL}$ ; Cefixime: MIC  $\geq 0.25$   $\mu\text{g/mL}$ .

**NOTE:** Cefixime susceptibility was not tested in 2007 and 2008.

# *Neisseria gonorrhoeae* — Percentage of Isolates with Elevated Minimum Inhibitory Concentrations (MICs) to Azithromycin, Cefixime, and Ceftriaxone, Gonococcal Isolate Surveillance Project (GISP), 2009–2018



**NOTE:** Elevated MIC = Azithromycin:  $\geq 2.0$   $\mu\text{g/mL}$ ; Cefixime:  $\geq 0.25$   $\mu\text{g/mL}$ ; Ceftriaxone:  $\geq 0.125$   $\mu\text{g/mL}$ .

# Gonorrhea Screening

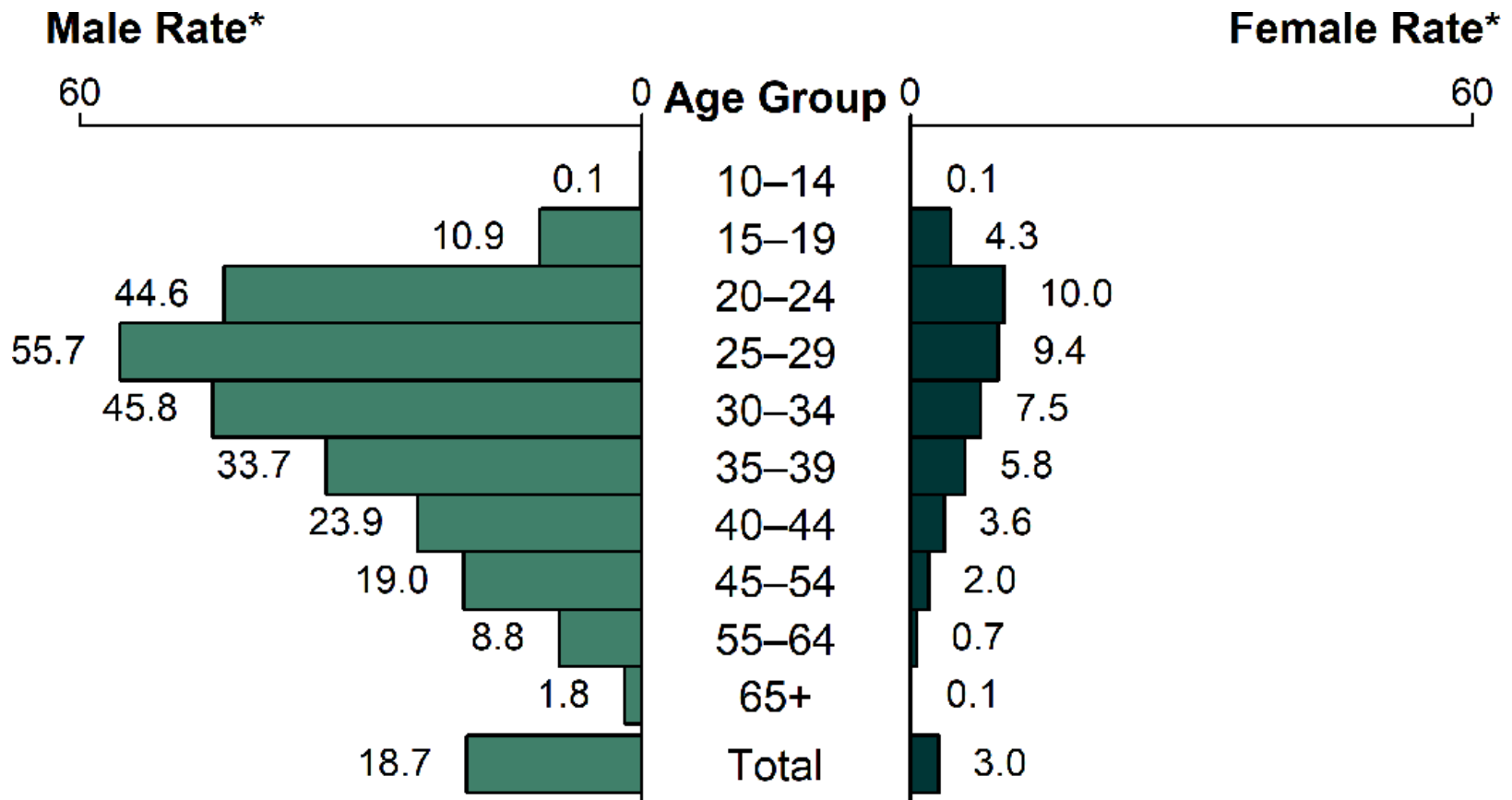
- Women:
  - Sexually active <25yo or older if high risk
  - Retest 3 months s/p treatment
- Pregnant:
  - All pregnant women <25yo or older if high risk
  - Retest 3 months s/p treatment
- MSM:
  - Annually if sexually active (site specific)
  - Every 3-6m if high risk
- HIV:
  - First visit then annually if sexually active

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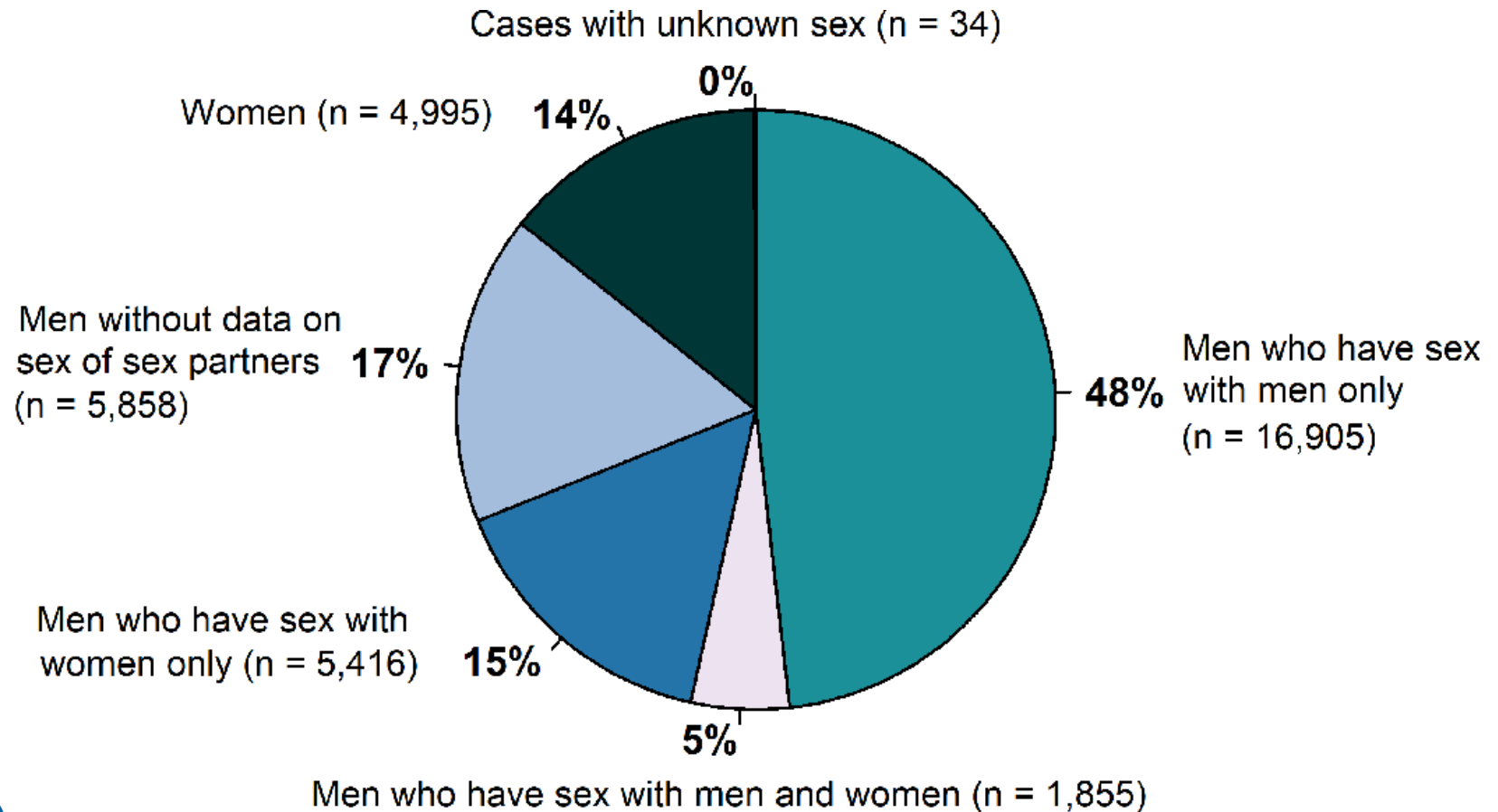
# Who is Getting Syphilis?

Primary and Secondary Syphilis — Rates of Reported Cases by Age Group and Sex, United States, 2018

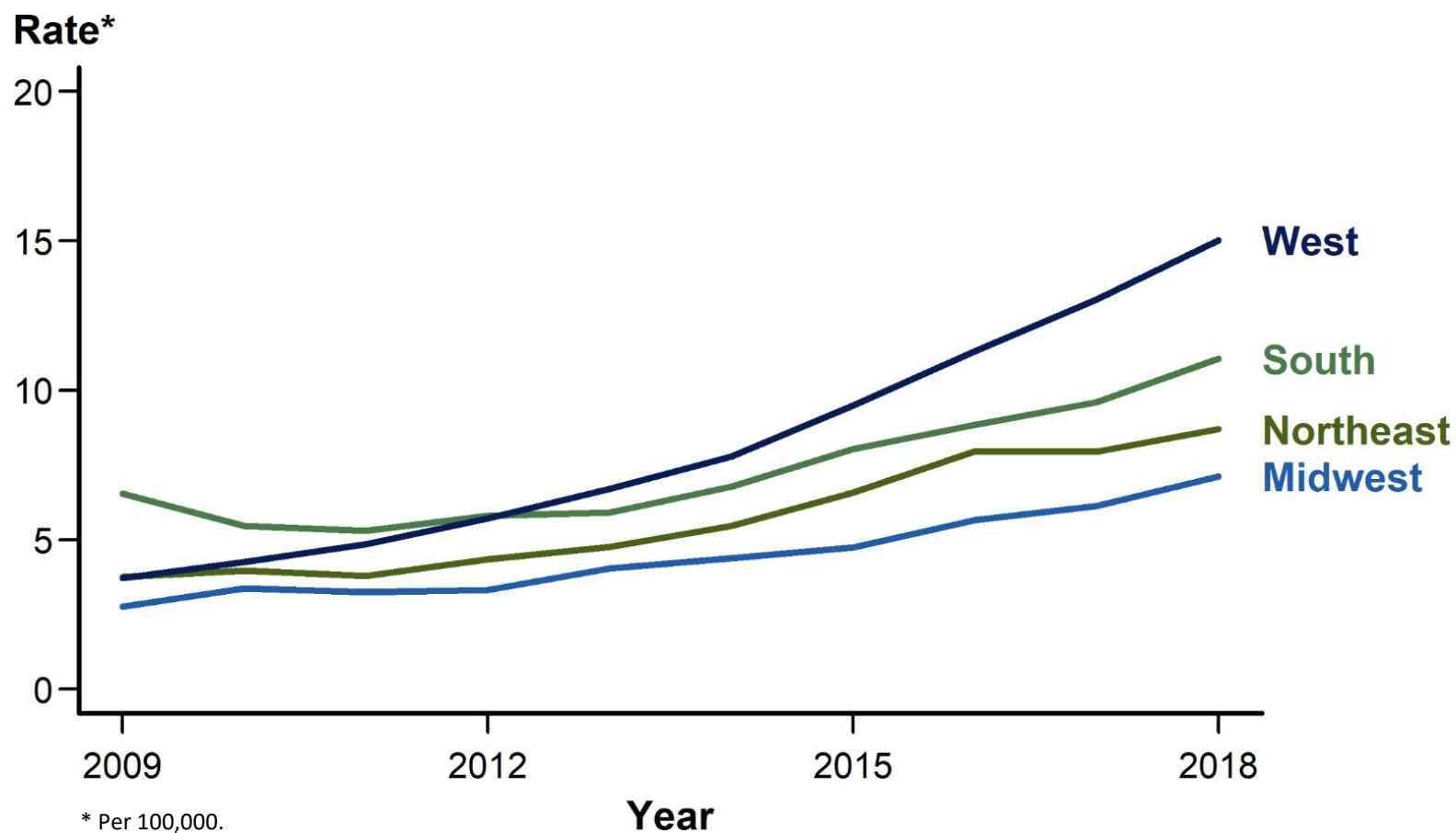


# Who is Getting Syphilis?

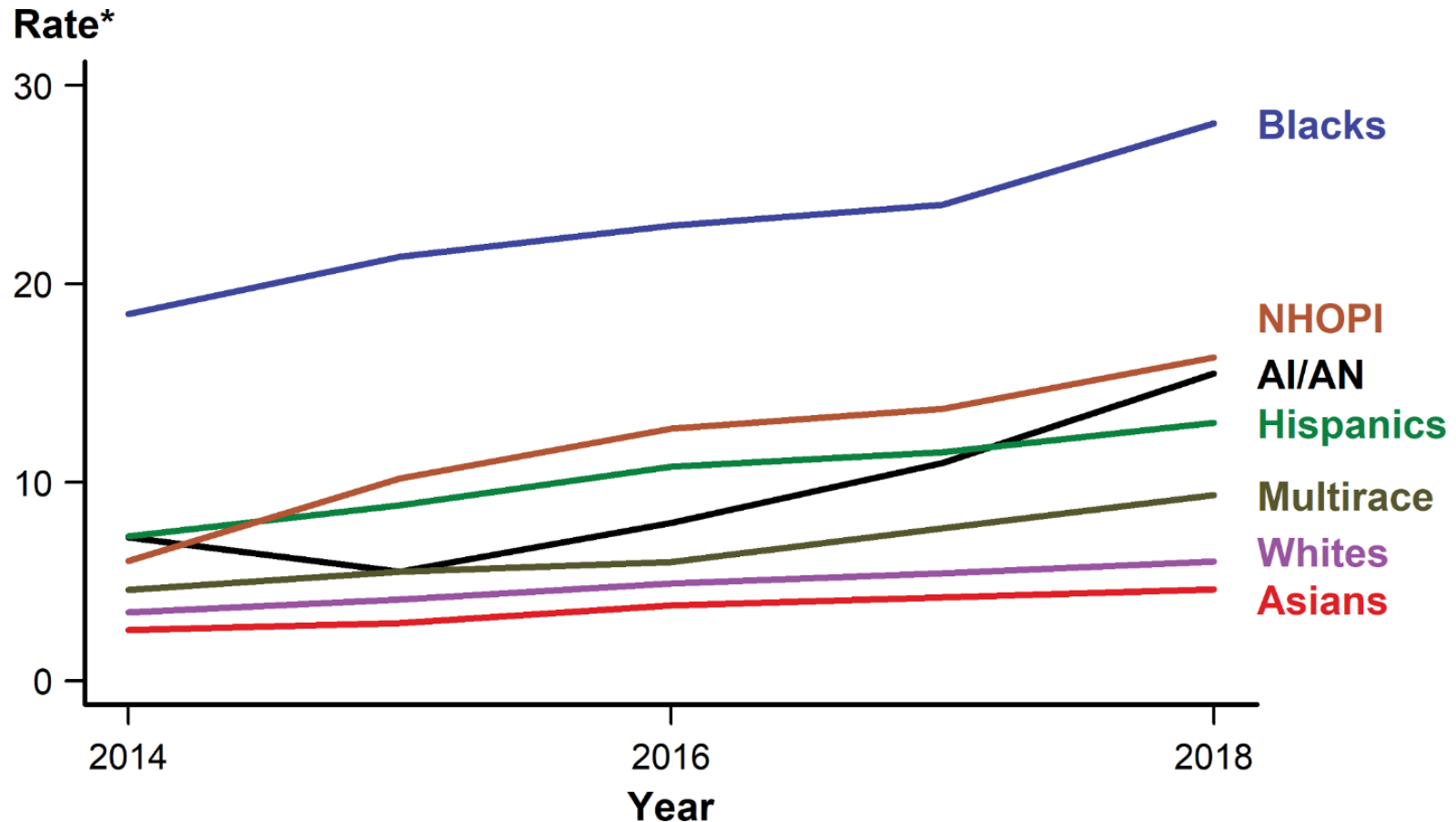
## Primary and Secondary Syphilis — Distribution of Cases by Sex and Sex of Sex Partners, United States, 2018



# Primary and Secondary Syphilis — Rates of Reported Cases by Region, United States, 2009–2018



# Primary and Secondary Syphilis — Rates of Reported Cases by Race/Hispanic Ethnicity, United States, 2014–2018



\* Per 100,000.

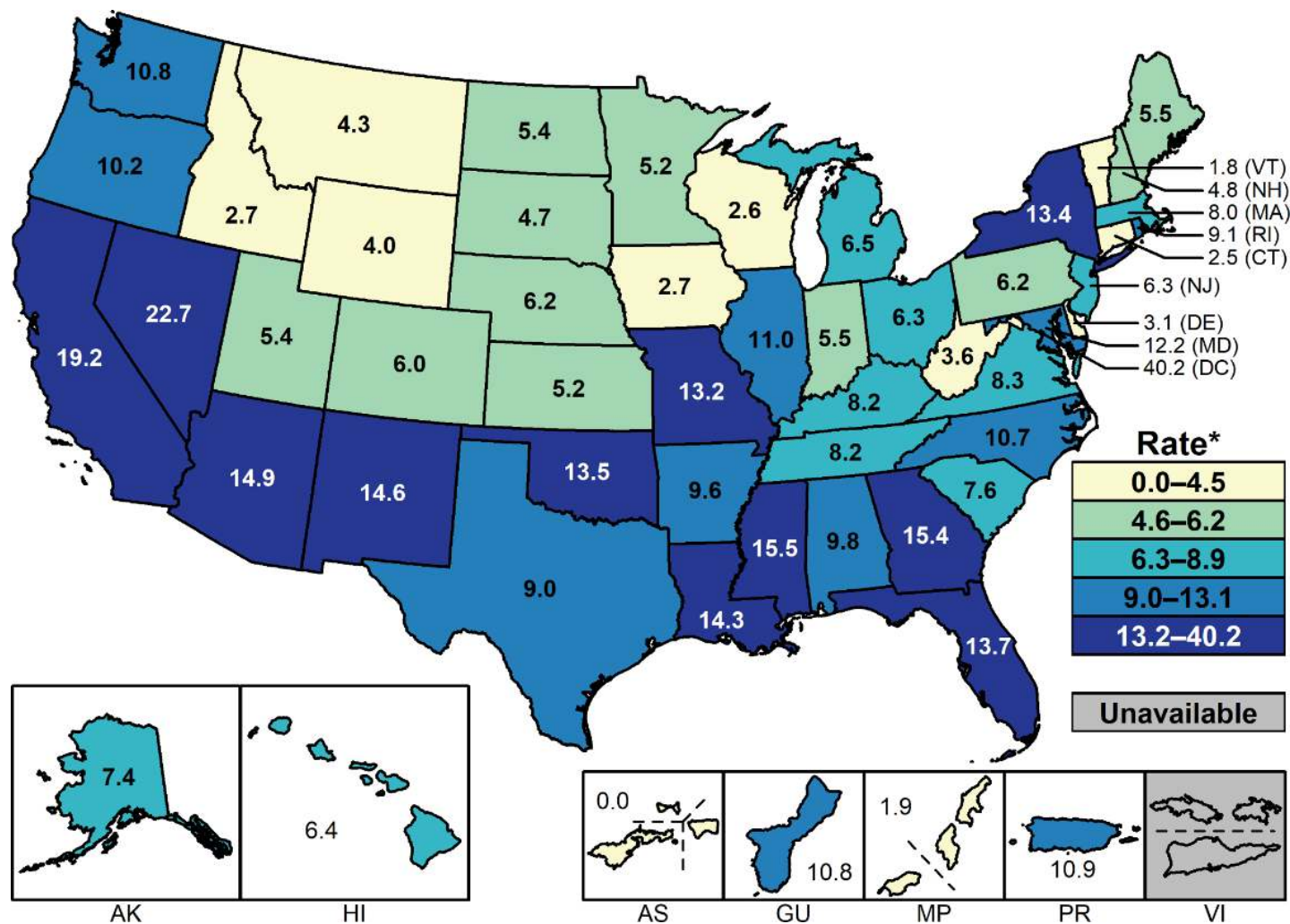
**NOTE:** See Section A1.5 in the Appendix for information on reporting STD case data for race/Hispanic ethnicity.

**ACRONYMS:** AI/AN = American Indians/Alaska Natives; NHOPI = Native Hawaiians/Other Pacific Islanders.





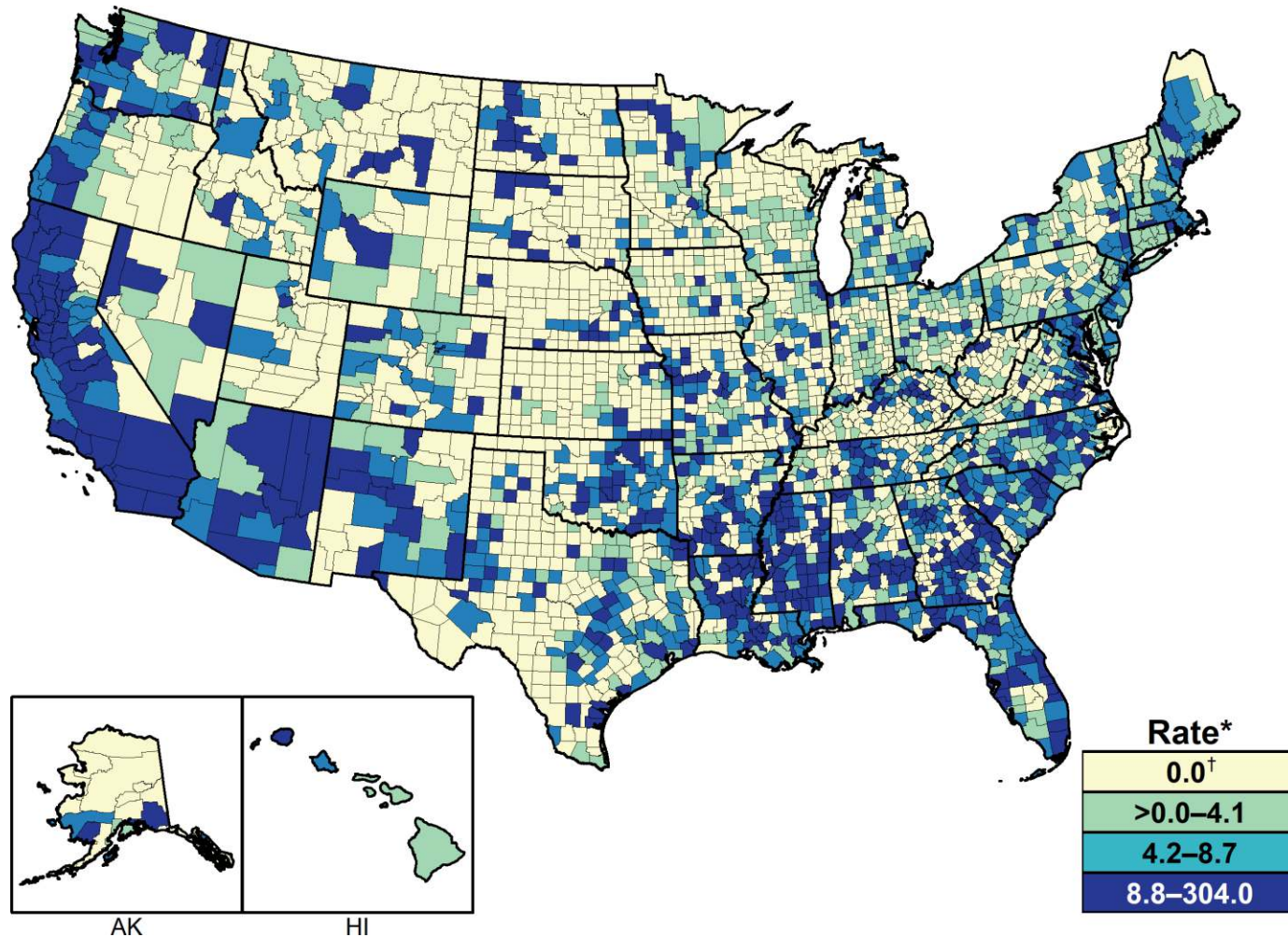
# Primary and Secondary Syphilis — Rates of Reported Cases by State and Territory, United States, 2018



\* Per 100,000.

**NOTE:** Section A1.11 in the Appendix for more information on interpreting reported rates in US territories.

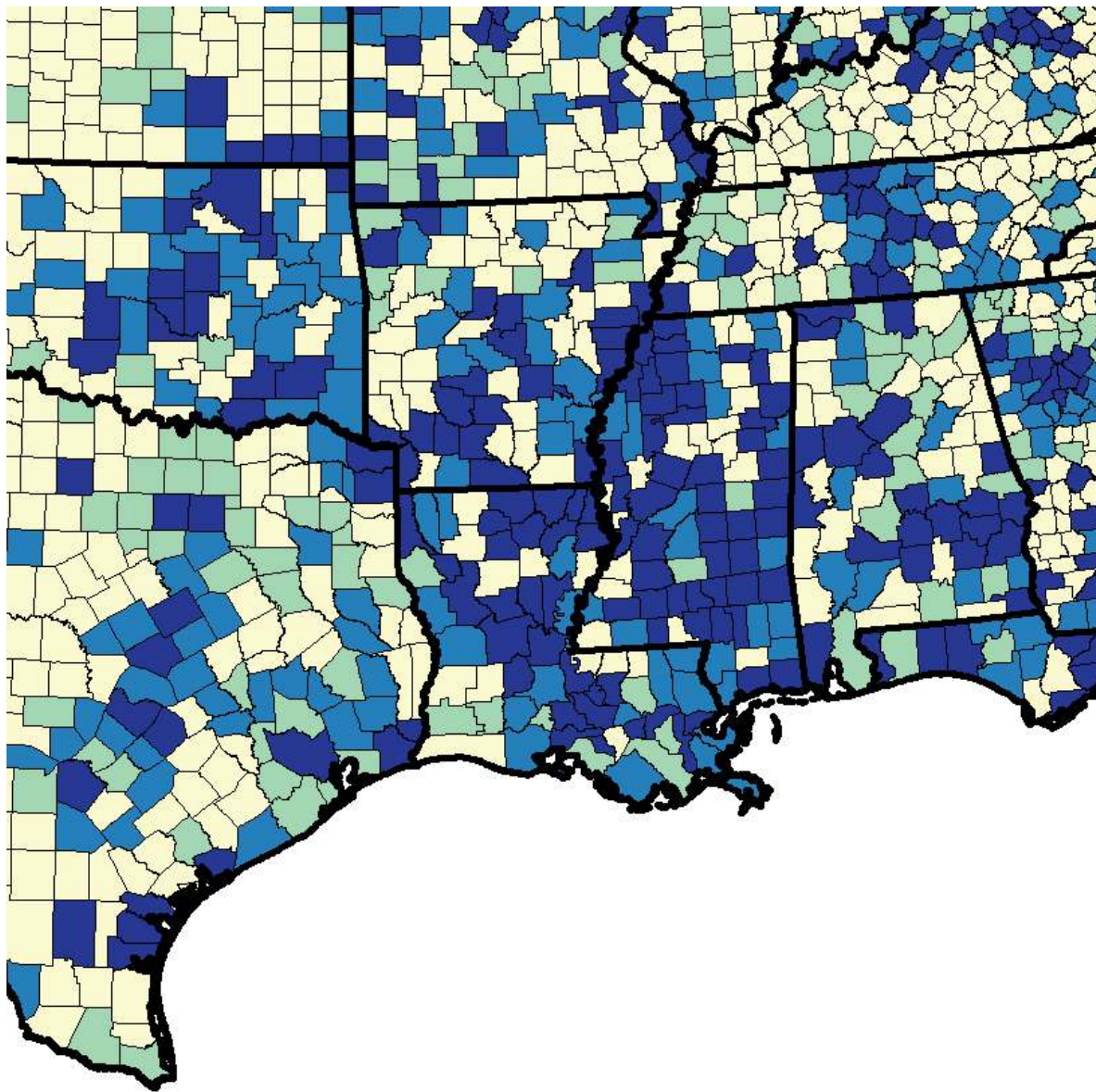
# Primary and Secondary Syphilis — Rates of Reported Cases by County, United States, 2018



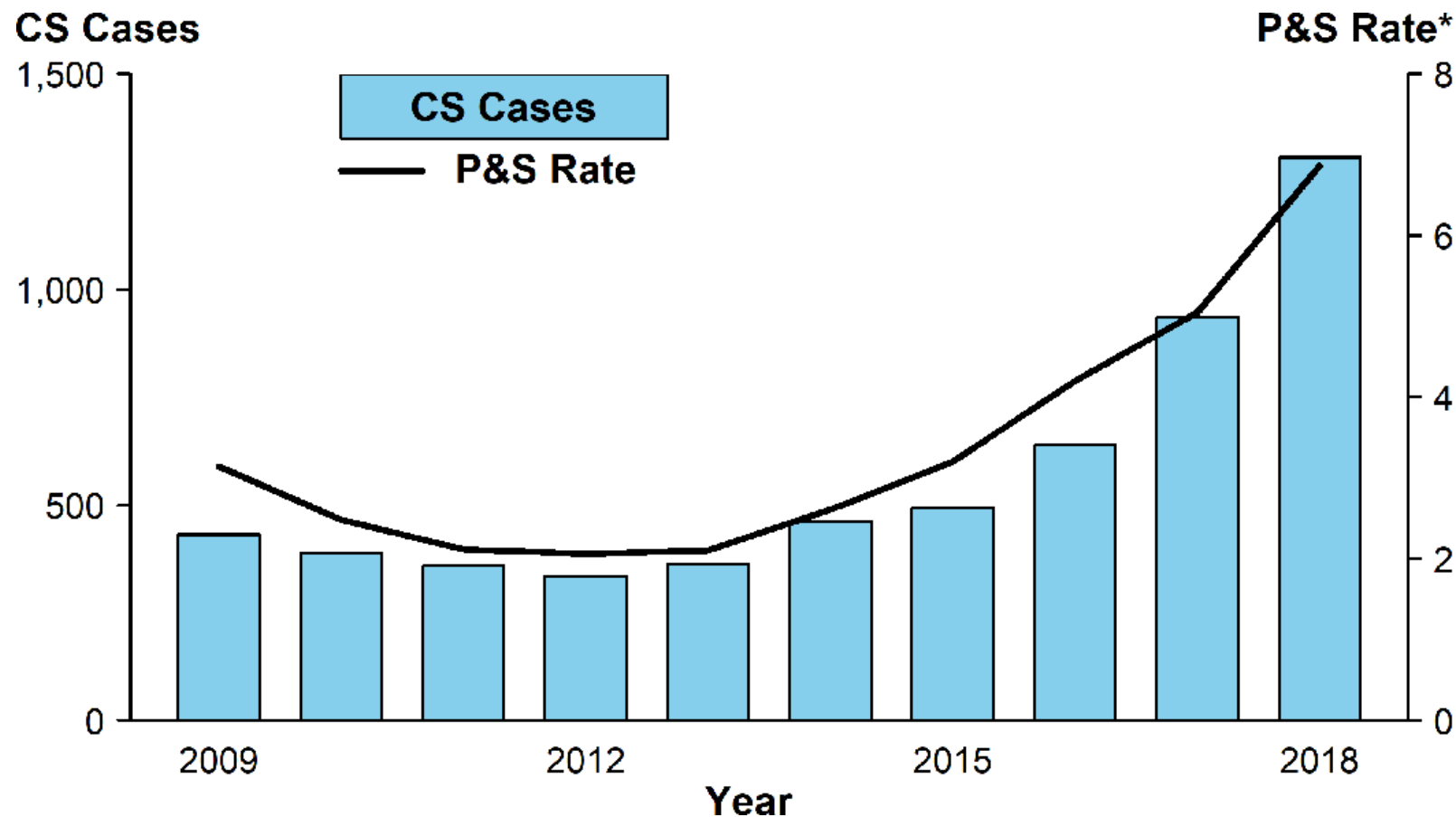
\* Per 100,000.

<sup>†</sup> In 2018, 1,498 (47.7%) of 3,142 counties in the United States reported no cases of primary and secondary syphilis. See section A1.4 in the Appendix for more information on county-level rates.





# Congenital Syphilis — Reported Cases by Year of Birth and Rates of Reported Cases of Primary and Secondary Syphilis Among Females Aged 15–44 Years, United States, 2009–2018

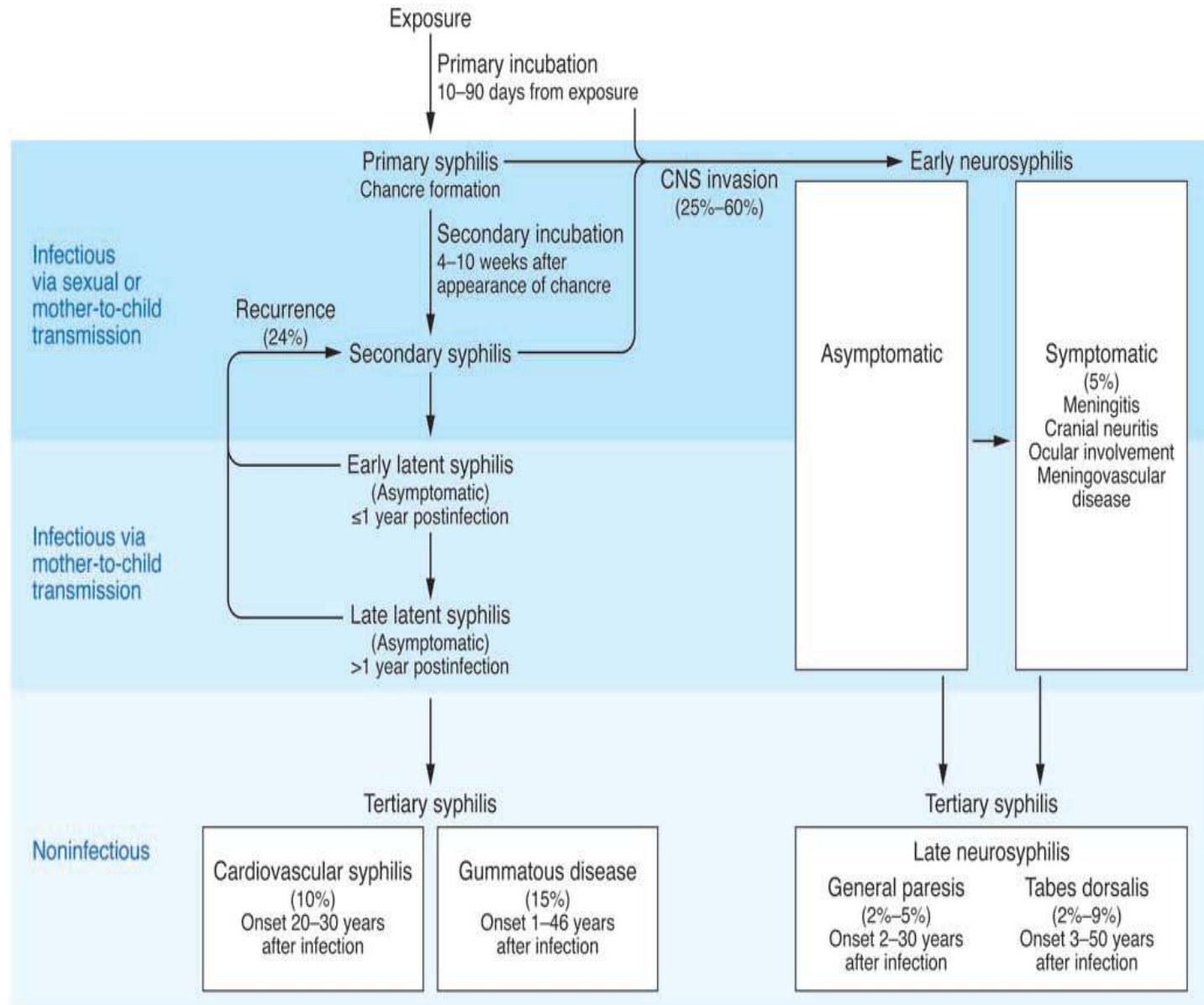


\* Per 100,000.

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



# Natural History of Syphilis



# Primary Syphilis

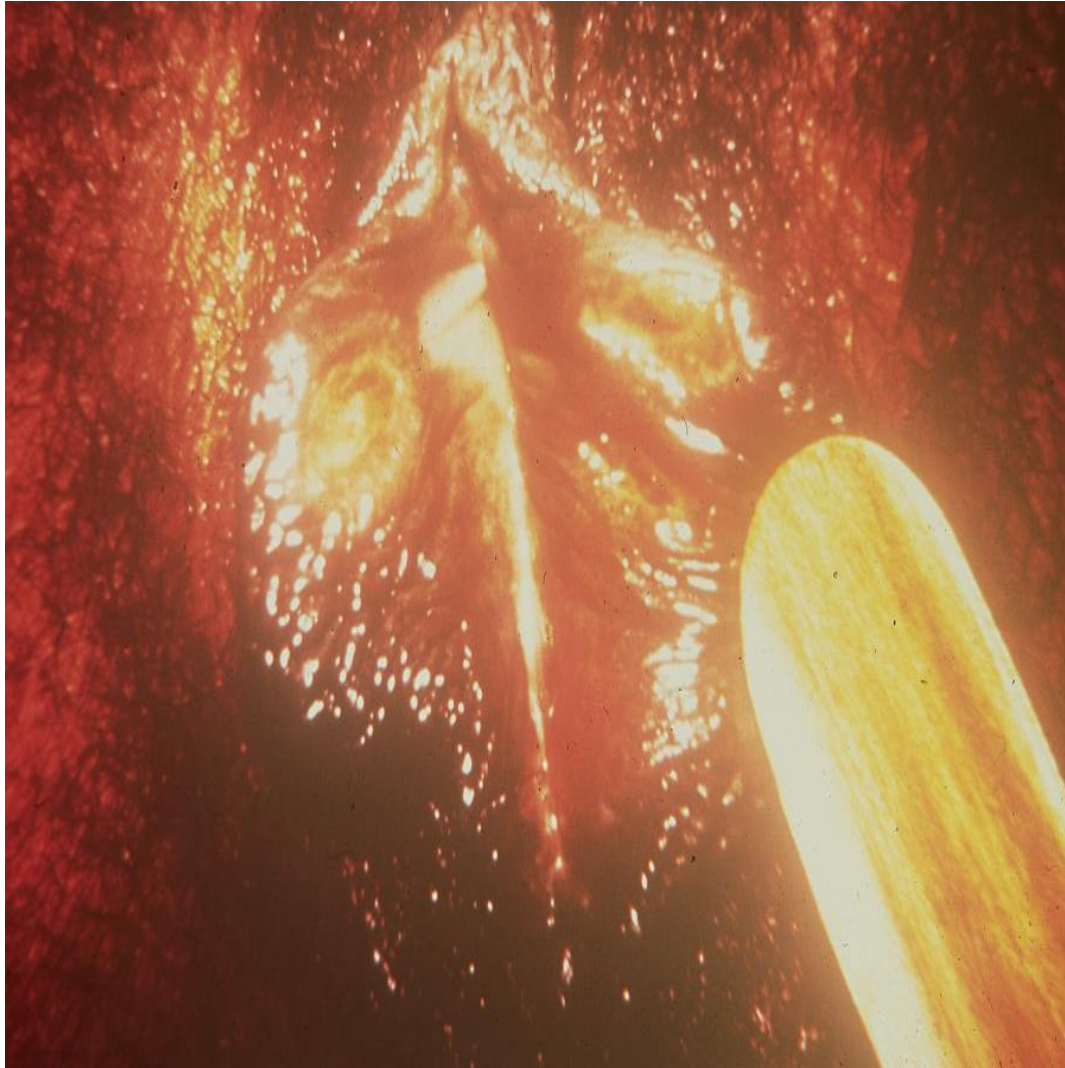
- Primary lesion or "chancre" develops at the site of inoculation
- Chancre:
  - Progresses from macule to papule to ulcer
  - Typically painless, indurated, and has a clean base
  - Highly infectious
  - Heals spontaneously within 1 to 6 weeks
  - 25% present with multiple lesions
- Regional lymphadenopathy: classically rubbery, painless, bilateral
- Serologic tests for syphilis may not be positive during early primary syphilis

# Primary Syphilis- Penile Chancre

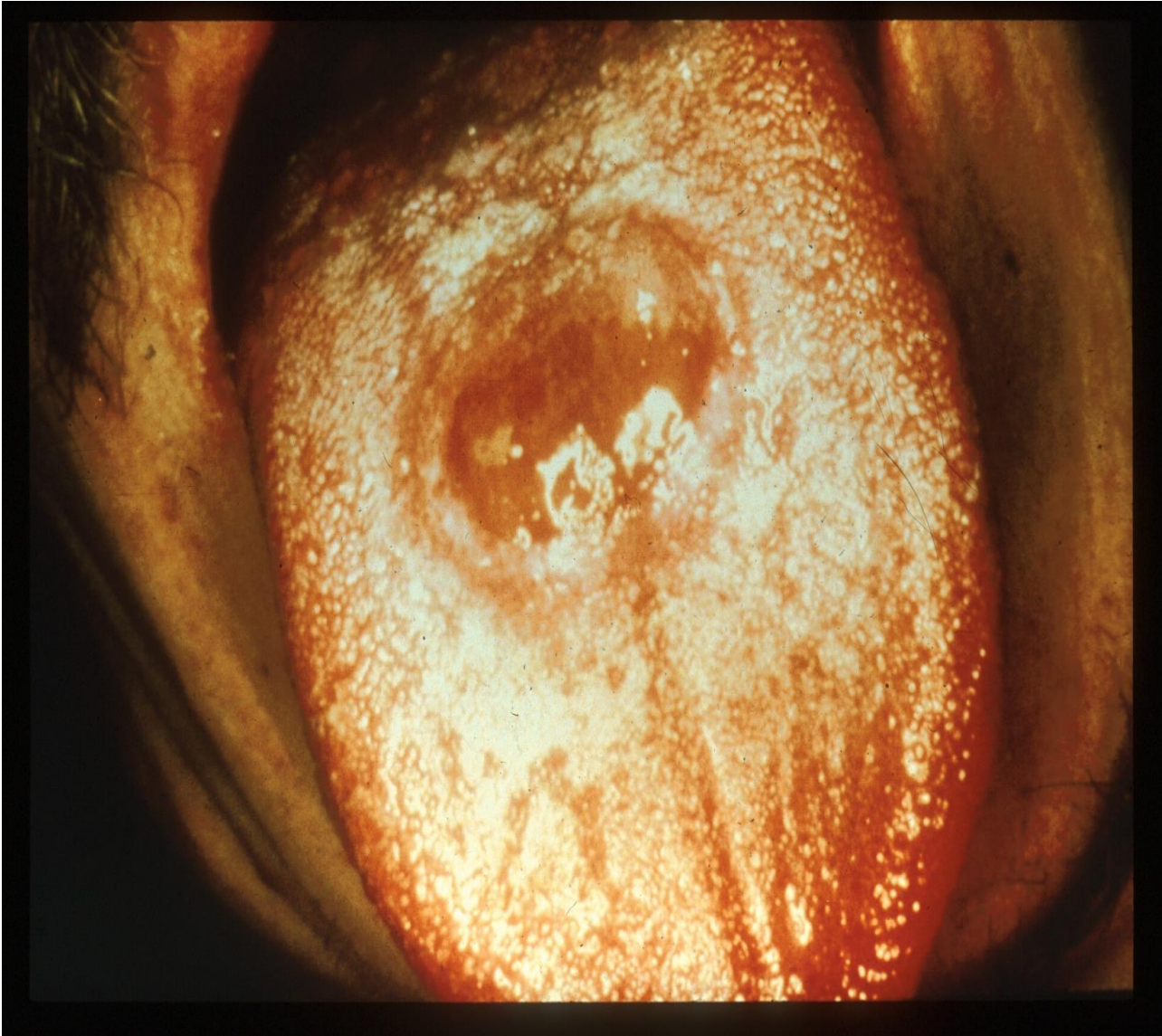




# Primary Syphilis- Labial Chancres



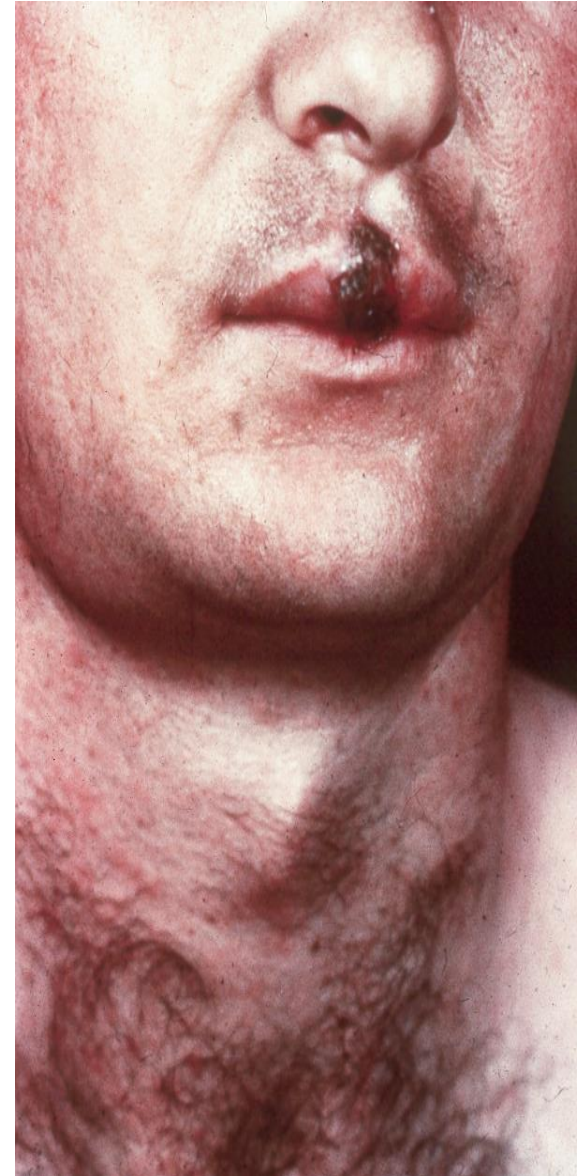
# Primary Syphilis - Tongue



Source: CDC/ NCHSTP/ Division of STD Prevention /STD Clinical Slides



# Primary Syphilis



# Secondary Syphilis Rash



Courtesy of S. Stroud

# Secondary Syphilis – Nickel/Dime Lesions





# Secondary Syphilis - Condylomata lata



# Secondary Syphilis - Alopecia



















# Darkfield Microscopy

- What to look for:
  - *T. pallidum* morphology and motility
- Advantage:
  - Definitive immediate diagnosis
- Disadvantages:
  - Requires specialized equipment and an experienced microscopist
  - Possible confusion with other spirochetes (some non-pathogenic)
    - Generally not recommended on oral lesions
  - Must be performed immediately
  - Possibility of false-negatives



# Serologic Tests for Syphilis

- Two types
  - Treponemal (qualitative)
  - Non-treponemal (qualitative and quantitative)
- The use of only one type is insufficient for diagnosis
- Conventional testing:
  - non-treponemal followed by treponemal
  - RPR->Syphilis IgG
- Reverse sequence testing:
  - Begin with treponemal test followed by non-treponemal
  - Syphilis IgG->RPR



# Treponemal Serologic Tests

- Fluorescent Treponemal Antibody Absorbed (FTA-ABS)
- *T. pallidum* particle agglutination (TP-PA)
- Treponemal enzyme/chemiluminescence immunoassays (EIA/CIA)
  - Periodontal disease (oral spirochetes) -> antibody reactive to Tp47
- Principles
  - Measure antibodies directed against *T. pallidum*
  - Qualitative
  - Usually reactive for life
    - Not useful for following response to therapy
    - Unable to differentiate current from past infection

# Nontreponemal (Lipoidal) Serologic Tests

- Rapid Plasma Reagin (RPR)
- Venereal Disease Research Laboratory (VDRL)
- Principles
  - Measure antibody directed against lipoidal antigens released from damaged host cells (e.g. cardiolipin) and possibly from the treponemes themselves
  - Not specific for *T. pallidum*
  - Titers usually correlate with disease activity. Results are quantitative.
  - Usually, but not always, disappear after effective treatment

# Nontreponemal Serologic Tests

## (continued)

### Advantages:

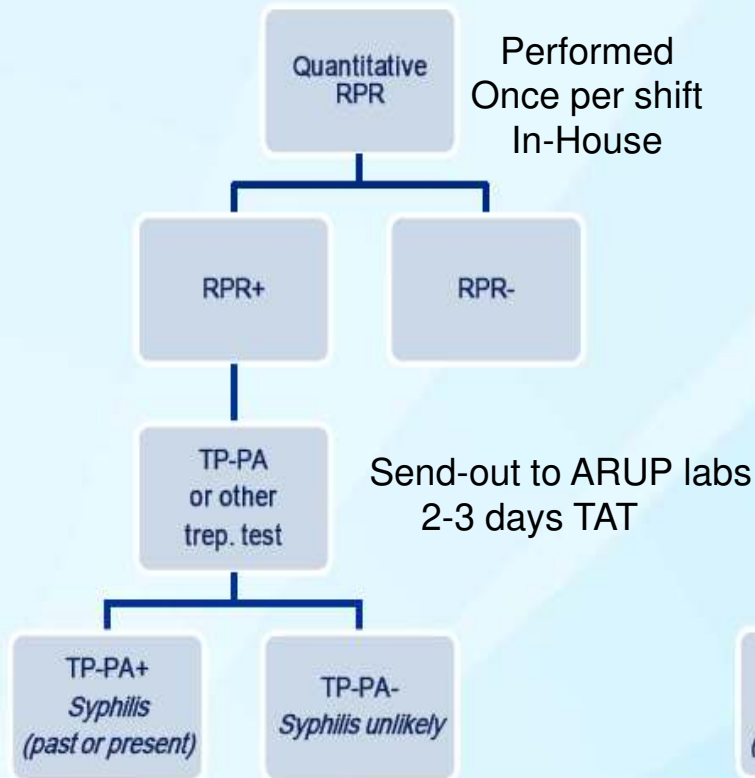
- Rapid and inexpensive
- Easy to perform and can be done in clinic or office
- Quantitative
- Used to follow response to therapy
- Can be used to evaluate possible reinfection

### Disadvantages:

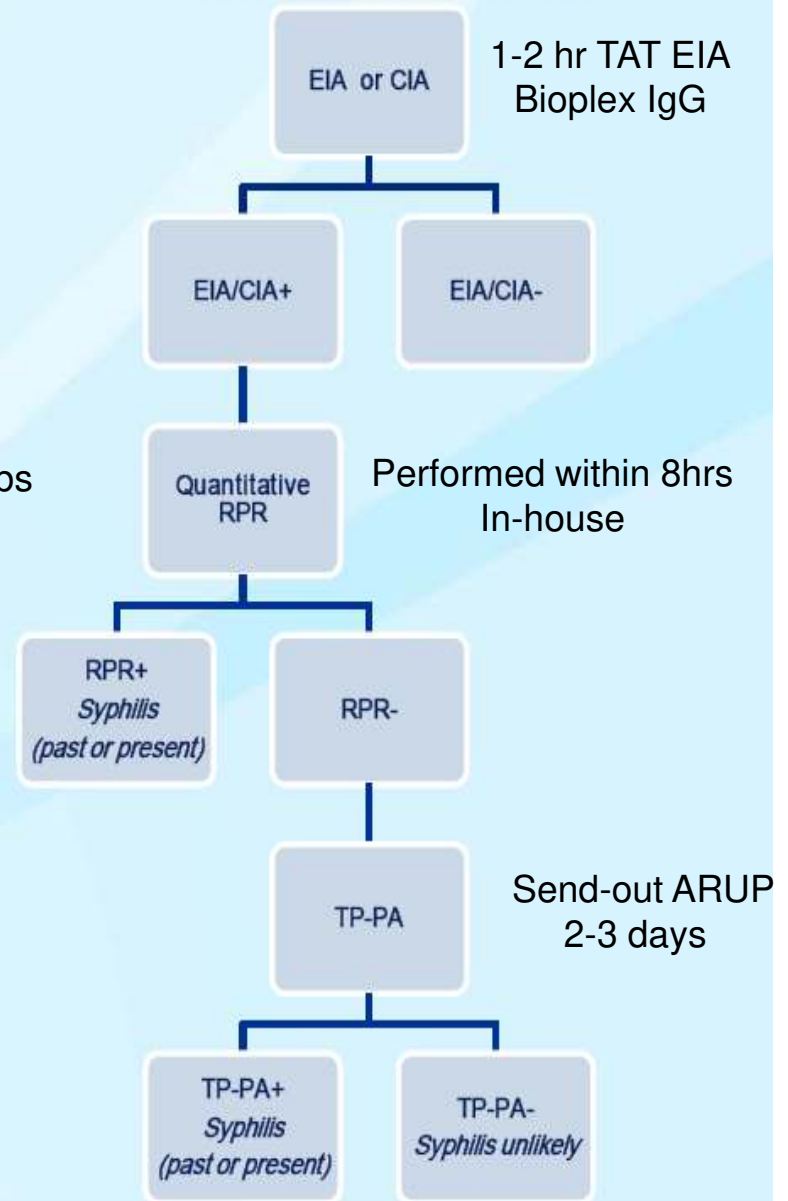
- May be insensitive in certain stages (false negative in early infection)
- Prozone effect may cause a false-negative reaction
- False-positive reactions may occur
- Not automated

# Syphilis serologic screening algorithms

## Traditional



## Reverse sequence



# Treatment of Adult Syphilis

Stage	Recommended Treatment	Alternative in Penicillin Allergy	Comments
Primary Secondary Early Latent	Benzathine Pen G 2.4 MU IM x 1	Doxycycline for 2 weeks  Ceftriaxone 1-2 g im/iv qd x 10-14 d ?  Azithromycin 2g x1	Penicillin only in pregnancy; desensitize if pen-allergic and pregnant. Do not use azithro in pregnancy, MSM or HIV
Late Latent Latent of Unknown Duration Non-Neuro Tertiary	Benzathine Pen G 2.4 MU IM qwk x 3	Doxycycline for 4 weeks  Ceftriaxone	Use of non-penicillin rx in HIV should be undertaken with caution.
Neurosyphilis Ocular syphilis	Pen-G 18-24 MU IV qd for 10-14 d (q 4h or continuous infusion)  Pen G-2.4 MU IM qd plus probenecid po for 10-14 d	Desensitize if pen allergic  Ceftriaxone 2 g im/iv qd x 10-14 d (limited data)	

# Indications for Lumbar Puncture

- Any of the following should prompt CSF evaluation:
  - Neurologic signs/symptoms
    - CN deficits
    - chronic or acute meningitis
    - stroke
    - altered mentation
    - loss of vibratory sense
    - auditory abnormalities
    - ophthalmic signs/symptoms
  - Evidence of active tertiary syphilis (e.g., aortitis, gumma, and iritis)
  - Treatment failure (No 4-fold decrease in non-treponemal titers)
- REMOVED from latest version of CDC STD treatment guidelines: HIV infection with late latent syphilis or latent syphilis of unknown duration

# Diagnosis of Neurosyphilis

- CSF VDRL: highly specific but insensitive; when reactive in the absence of gross contamination of the CSF with blood, it is considered diagnostic of neurosyphilis
- CSF FTA-Abs: highly sensitive but not specific
- Diagnosis usually depends on the following factors:
  - Reactive blood test results,
  - Abnormalities of CSF cell count or protein, or
  - A reactive CSF VDRL with or without clinical manifestations.
- CSF leukocyte count usually is elevated ( $>5$  WBCs/mm<sup>3</sup>) in patients with neurosyphilis



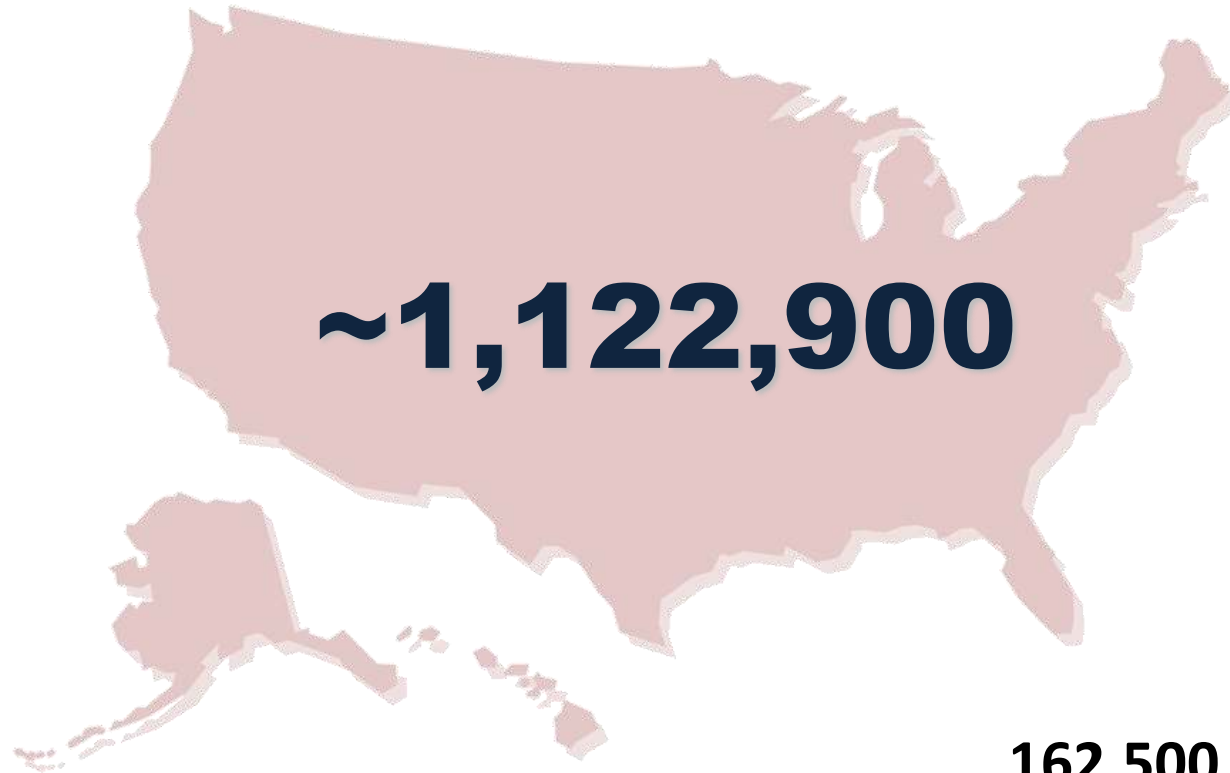
# Syphilis Screening

- Pregnant women
  - 1<sup>st</sup> visit
  - Repeat 3<sup>rd</sup> Trimester
  - Repeat at delivery (if high risk)
- MSM:
  - Annually if sexually active
  - Q3-6m if at increased risk
- HIV:
  - 1<sup>st</sup> Visit and annually after

# Sexually Transmitted Infections (STIs)

- HSV
- HPV
- **HIV**
- *Chlamydia trachomatis*
- Pediculosis pubis
- *Mycoplasma genitalium*
- Syphilis
- Trichomoniasis
- BV
- Scabies
- Mulloscum contagiosum
- HTLV-1
- *Haemophilus ducreyi*
- *Klebsiella granulomatis*
- HAV
- HBV
- HCV
- Zika virus
- *Neisseria gonorrhoeae*
- Vaginal candidiasis
- LGV
- EBV
- CMV

# People Living With HIV/AIDS in the United States in 2015



**162,500 (15%)  
Unaware of their infection**

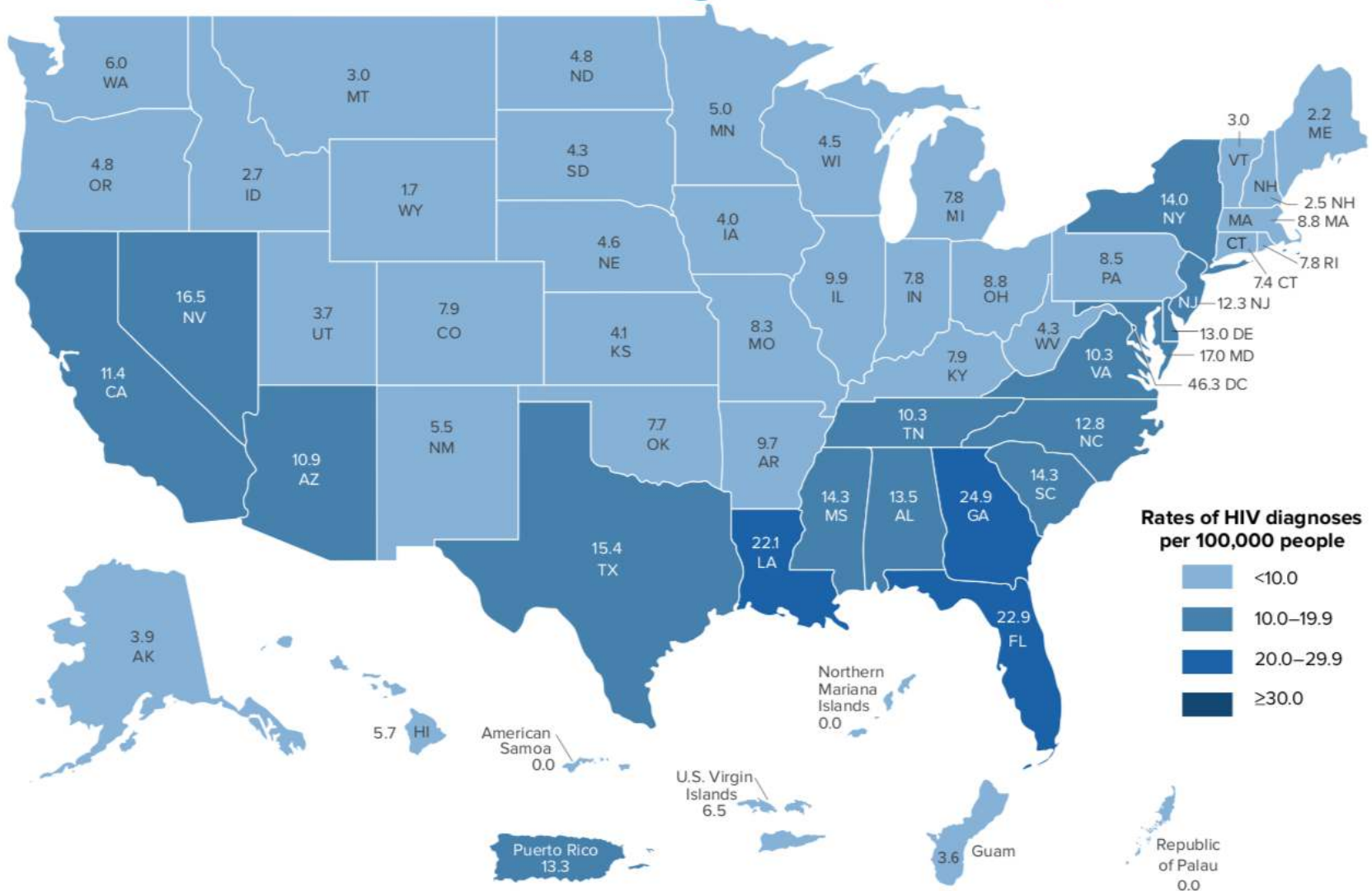
US Population: 327 million (2018).... So 1 in 300 Americans have HIV

# HIV Patients in Care

- 63% received *some* care
- 49% retained in continuous care
- 51% achieved viral suppression
  
- 76% of newly diagnosed patients (2016) were linked to HIV care within 1 month

# 2017 HIV Statistics

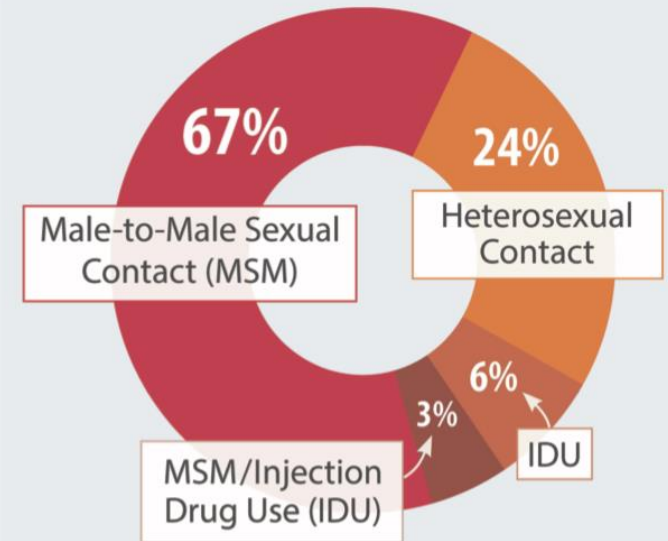
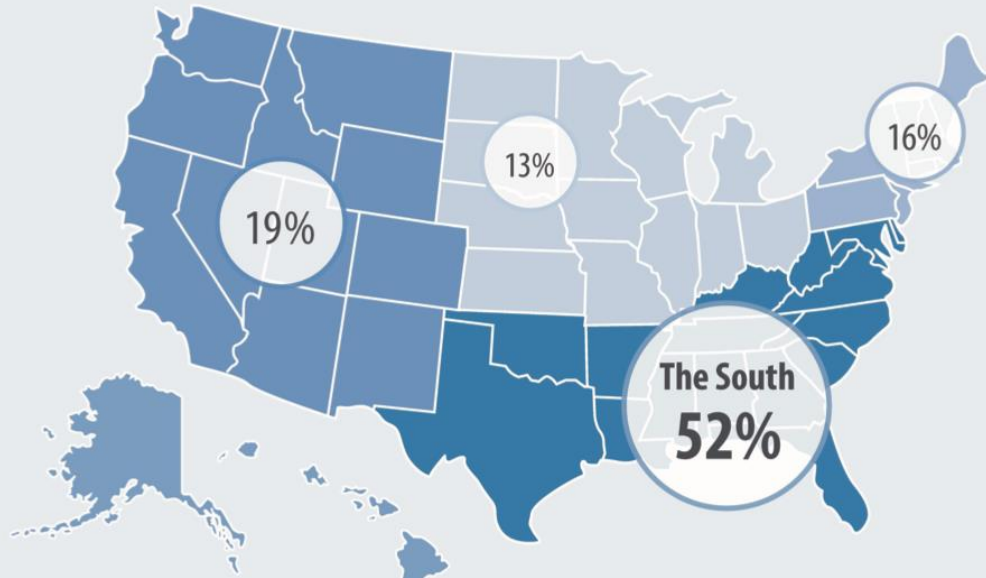
## Rates of New HIV Diagnoses in the US, 2017



# HIV STATISTICS

- **USA:**
  - **Prevalence:**
    - 1.1 million
  - **New Diagnosis:**
    - 39,513 (2015)
    - 38,739 (2017)
  - **Deaths:**
    - 15,807 (2016)
- **Arkansas:**
  - **Prevalence:**
    - 6,087 (2017)
  - **New Diagnosis:**
    - 406 (2017)

## Percentage of HIV Diagnoses in 2017



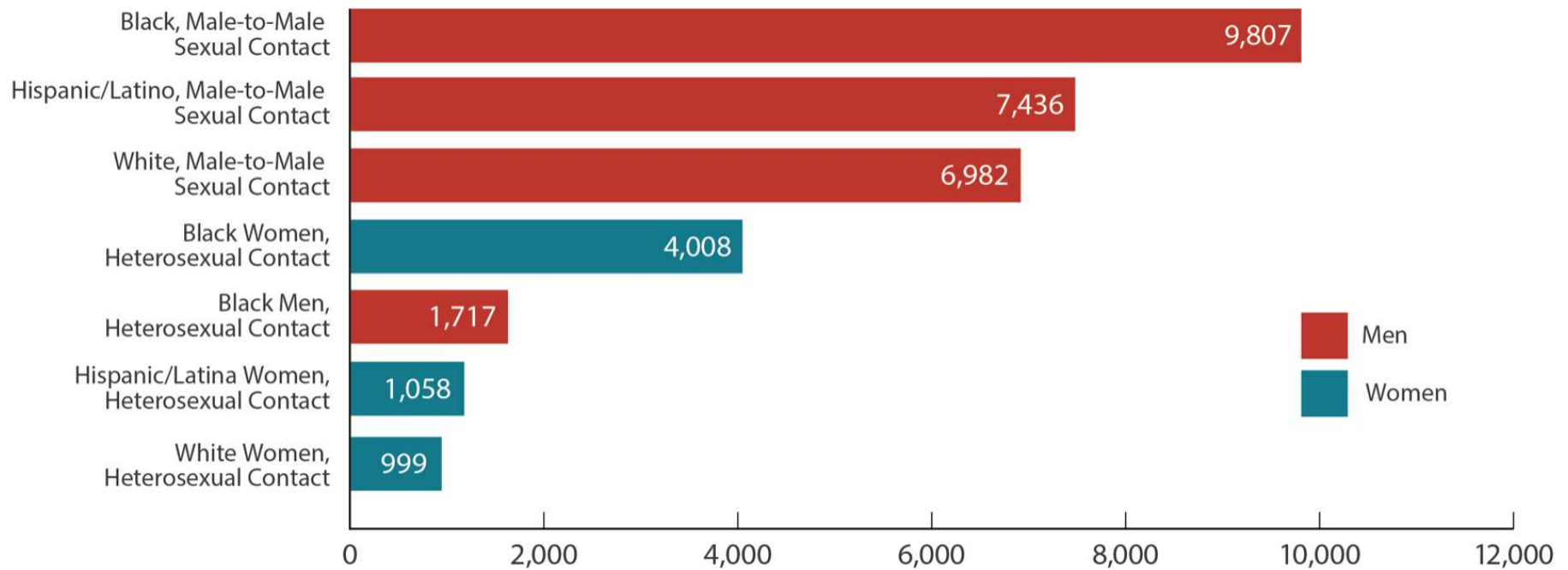
### 2012-2016:

- USA Incidence in HIV stable
  - Northeast: 17% ↓
  - Midwest: 6% ↓
  - Midwest: Stable
  - South: Stable



# 2017 HIV INCIDENCE (USA)

New HIV Diagnoses in the US and Dependent Areas for the Most-Affected Subpopulations, 2017



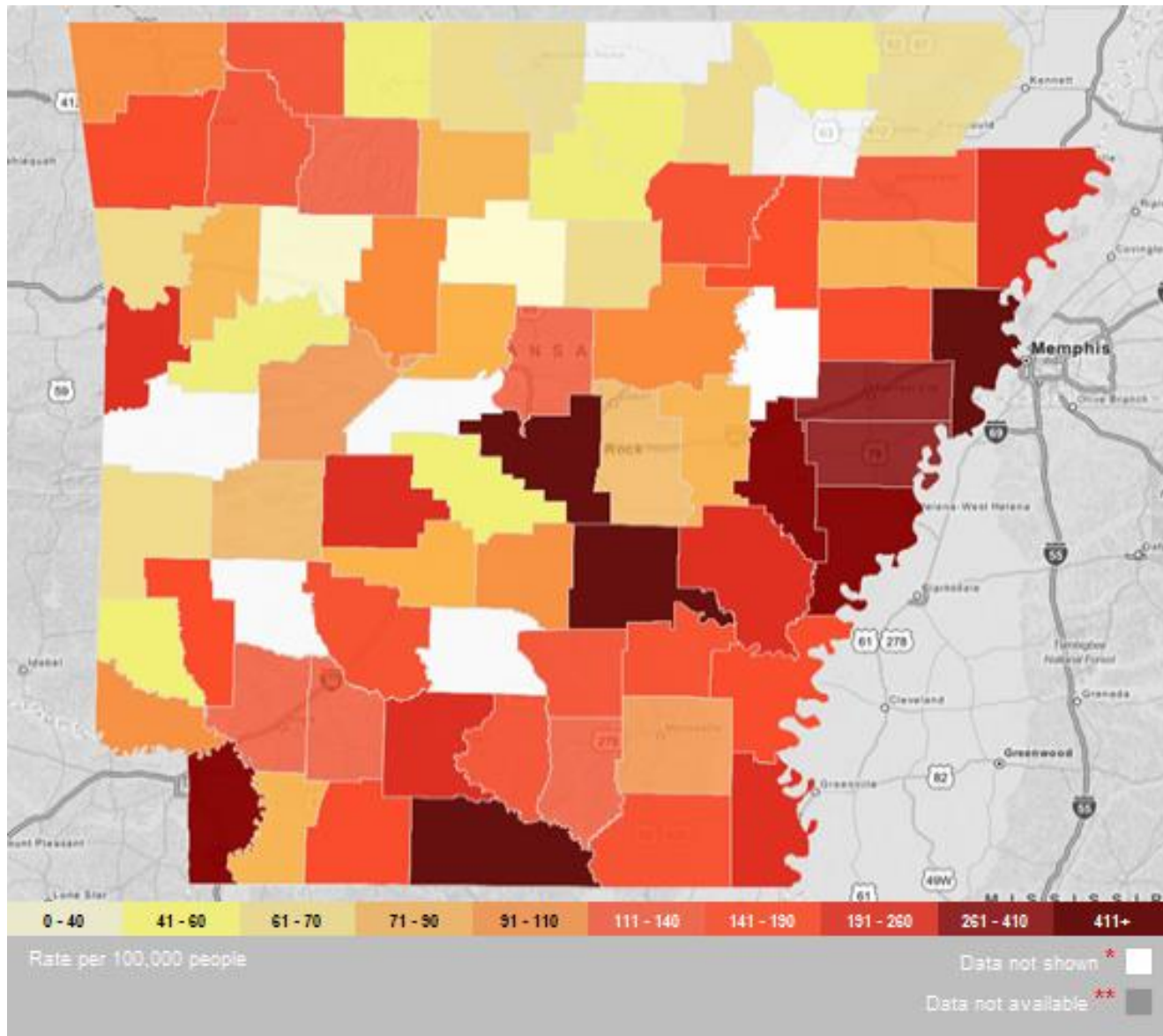
# MSM HIV INCIDECE (USA) 2005-2014

Race	Trend	Change (%)
African American	Increase	24%
Young AA (13-24y)	Increase	87%
Hispanic	Increase	22%
Caucasian	Decrease	18%

# MSM HIV INCIDECE (USA) 2012-2016

Race	Trend	Change (%)
African American	Stable	-
Hispanic	Increase	12%
Caucasian	Decrease	14%

# HIV Epidemic in Arkansas



# HIV Prevention Toolbox

- **HIV Testing**
- **Safer-sex counseling: understanding risk**
- **Condoms and lubricant**
- **Sterile syringes and avoid sharing “works”**
- **STI testing and treatment**
- **Biomedical Prevention (Treatment as Prevention)**
  - **PrEP (pre-exposure prophylaxis)**
  - **PEP (post-exposure prophylaxis)**

# What is PrEP

- **Pre-Exposure Prophylaxis (PrEP):**
  - HIV uninfected person takes medication **BEFORE** exposure to prevent infection
  - **USPSTF Grade A Recommendation 2019 for at risk patients**
  - **Options:**
    - Tenofovir (tdf)/emtricitabine [Truvada]
    - Tenofovir (taf)/emtricitabine [Descovy] \*\* Excluding females

# Who to offer PrEP to?

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## Is PrEP Right For You?

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PrEP may benefit you if you are HIV-negative and **ANY** of the following apply to you.

### You are a gay/bisexual man and

- have an HIV-positive partner.
- have multiple partners, a partner with multiple partners, or a partner whose HIV status is unknown—and you also
  - have anal sex without a condom, or
  - recently had a sexually transmitted disease (STD).

### You are a heterosexual and

- have an HIV-positive partner.
- have multiple partners, a partner with multiple partners, or a partner whose HIV status is unknown—and you also
  - don't always use a condom for sex with people who inject drugs, or
  - don't always use a condom for sex with bisexual men.

### You inject drugs and

- share needles, syringes, or other equipment to inject drugs.
- are at risk for getting HIV from sex.



# HIV Screening

- Women:
  - All 13-64yo
  - Anytime seeking evaluation for STI
- Pregnancy:
  - 1<sup>st</sup> visit
  - Retest 3<sup>rd</sup> trimester
- Men:
  - All 13-64yo
- MSM
  - Annually if sexually active

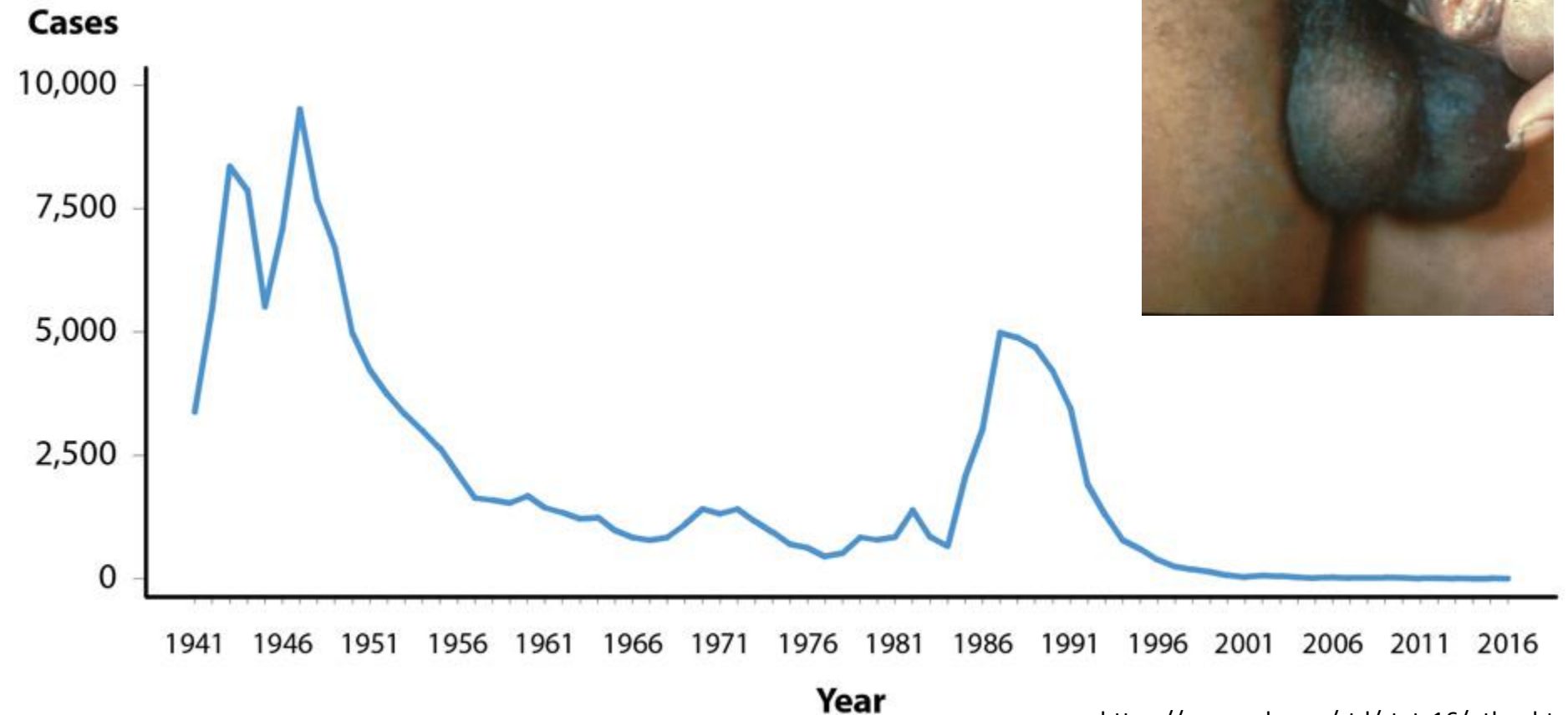


# Sexually Transmitted Infections (STIs)

- **HSV**
- HPV
- HIV
- *Chlamydia trachomatis*
- Pediculosis pubis
- *Mycoplasma genitalium*
- Syphilis
- **Trichomoniasis**
- BV
- Scabies
- *Molloscum contagiosum*
- HTLV-1
- ***Haemophilus ducreyi***
- *Klebsiella granulomatis*
- HAV
- HBV
- HCV
- Zika virus
- *Neisseria gonorrhea*
- Vaginal candidiasis
- LGV
- EBV
- CMV

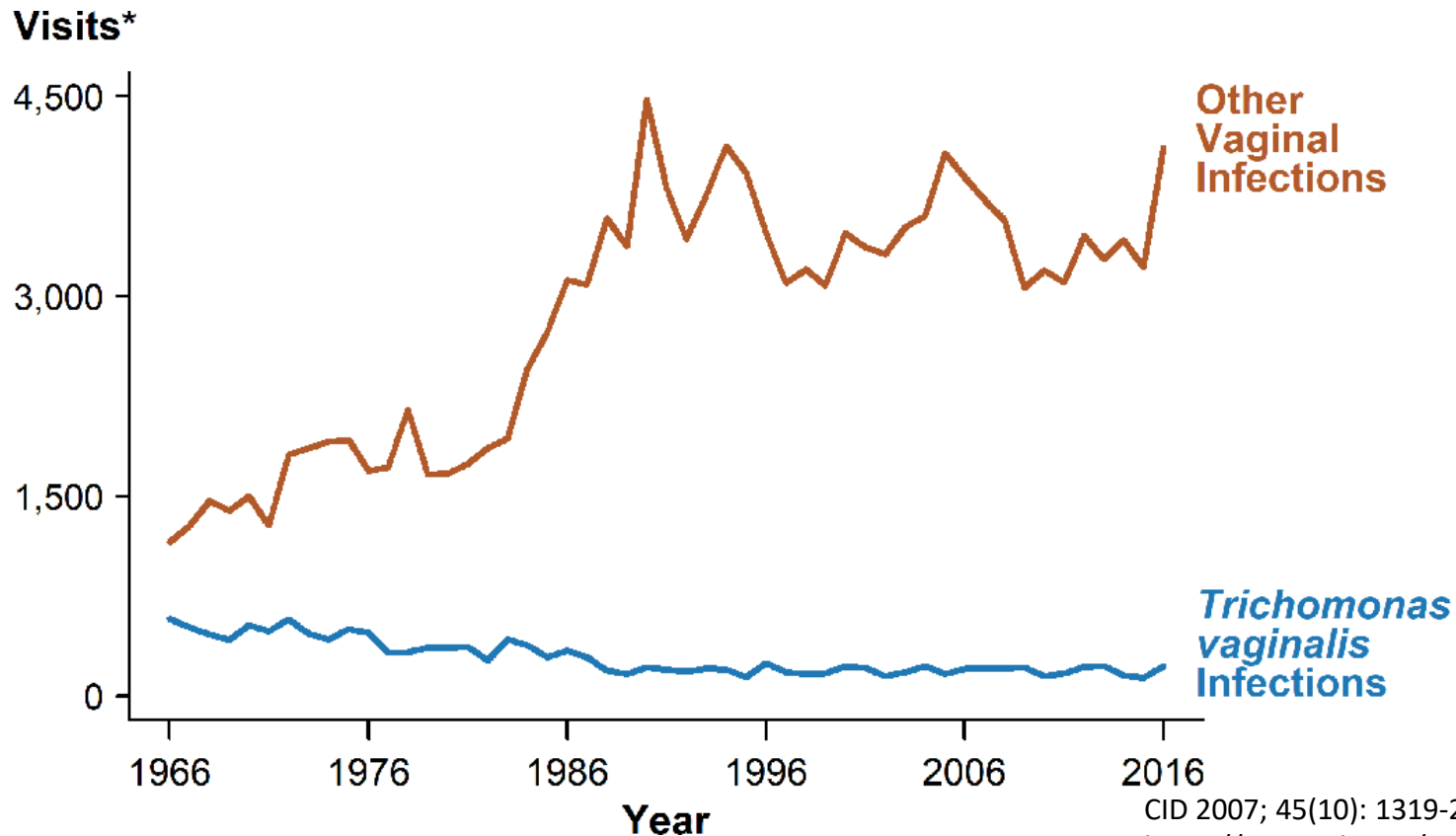
# Chancroid

- *Haemophilus ducreyi*



# Trichomoniasis

- *Trichomonas vaginalis*
  - 222,000 visits per year
  - Prevalence 2,300,000 (85% asymptomatic)
  - Overall prevalence 3.1% (13.3% black females)



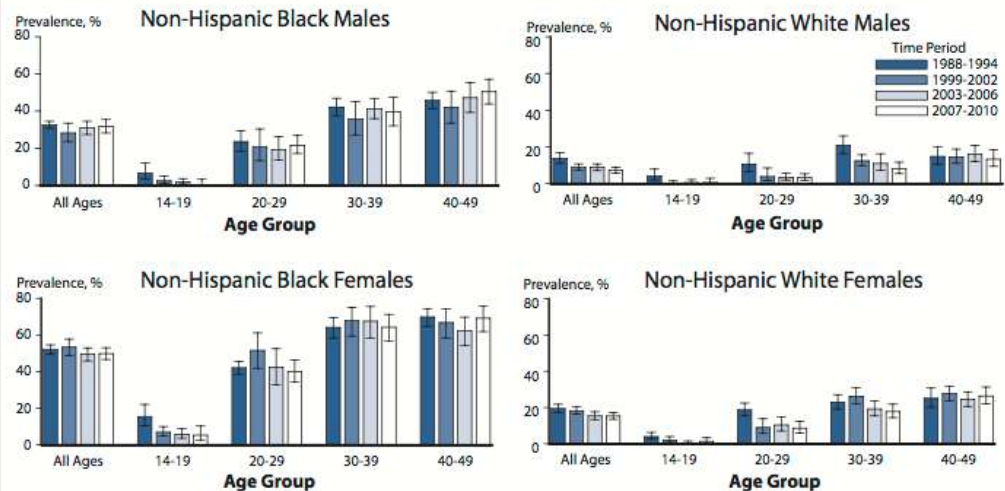
CID 2007; 45(10): 1319-26.

<https://www.cdc.gov/std/stats16/other.htm>

# Herpes Simplex

- One of most common STIs
- 90% of HSV-2 seropositive patients report never being told by provider they had HSV
- ~20% of people (14-49yo) are HSV-2 seropositive
- ~70% of Black Females (40-49yo) are HSV-2 seropositive
- Screen: Serology considered if presenting for STI evaluation. PCR of lesion
- Treatment:
  - Valacyclovir 1g BID x7d (1<sup>o</sup>)
  - Valacyclovir 500mg BID x3d (recurrence)

**Figure 49. Herpes Simplex Virus Type 2 — Seroprevalence Among Non-Hispanic Whites and Non-Hispanic Blacks by Sex and Age Group, National Health and Nutrition Examination Survey (NHANES), 1988–1994, 1999–2002, 2003–2006, and 2007–2010**



**NOTE:** Error bars indicate 95% confidence interval.

**SOURCE:** Fanfair RN, Zaidi A, Taylor LD, et al. Trends in Seroprevalence of Herpes Simplex Virus Type 2 Among Non-Hispanic Blacks and Non-Hispanic Whites Aged 14 to 49 Years — United States, 1988 to 2010. Sex Transm Dis 2013; 40(11):860–864.

# Primary HSV-2



# Genital Herpes- Recurrent





# HSV-2 in Immunosuppressed



# HSV-2 Treatment

	<i>1<sup>st</sup> Clinical Episode</i>	<i>Episodic</i>	<i>Daily Suppression</i>
<i>Acyclovir (mg)</i>	400 tid	400 tid	400 bid
<i>Famciclovir (mg)</i>	250 tid	125 bid	250 bid
<i>Valacyclovir (mg)</i>	1000 bid	500 bid	500-1000 qd
<i>Duration (days)</i>	7-10	5	NA

# STI Screening Billing

- <https://www.cms.gov/Medicare/Prevention/PrevntionGenInfo/Downloads/MPS-QuickReferenceChart-1TextOnly.pdf>

## Human Immunodeficiency Virus (HIV) Screening

Effective April 13, 2015, procedure code G0475 may be billed for HIV screening.

Refer to ["Screening for the Human Immunodeficiency Virus \(HIV\) Infection"](#) for more information.

### HCPCS/CPT Codes

- 80081** – Obstetric panel (includes HIV testing)
- G0432** – Infectious agent antibody detection by enzyme immunoassay (EIA) technique
- G0433** – Infectious agent antibody detection by enzyme-linked immunosorbent assay (ELISA) technique
- G0435** – Infectious agent antibody detection by rapid antibody test
- G0475** – HIV antigen/antibody, combination assay, screening

### ICD-10 Codes

- Increased risk factors **not** reported – Z11.4
- Increased risk factors reported – Z11.4 and Z72.89, Z72.51, Z72.52, or Z72.53
- Pregnant Medicare beneficiaries – Z11.4 and Z34.00, Z34.01, Z34.02, Z34.03, Z34.80, Z34.81, Z34.82, Z34.83, Z34.90, Z34.91, Z34.92, Z34.93, O09.90, O09.91, O09.92, or O09.93

## Screening for Sexually Transmitted Infections (STIs) and High Intensity Behavioral Counseling (HIBC) to Prevent STIs



### HCPCS/CPT Codes

- 86631, 86632, 87110, 87270, 87320, 87490, 87491, 87810** – Chlamydia
- 87590, 87591, 87850** – Neisseria gonorrhoeae
- 87800** – Infectious agent detection by nucleic acid (DNA or RNA), multiple organisms; direct probe(s) technique
- 86592** – Syphilis test, non-treponemal antibody; qualitative (e.g., VDRL, RPR, ART)
- 86593** – Syphilis test, non-treponemal, quantitative
- 86780** – Treponema pallidum
- 87340, 87341** – Hepatitis B (hepatitis B surface antigen)
- G0445** – Semiannual high intensity behavioral counseling to prevent STIs, individual, face-to-face, includes education skills training & guidance on how to change sexual behavior, 30 minutes

### ICD-10 Codes

- Z11.3, Z72.89, Z72.51, Z72.52, Z72.53, Z34.00, Z34.01, Z34.02, Z34.03, Z34.80, Z34.81, Z34.82, Z34.83, Z34.90, Z34.91, Z34.92, Z34.93, O09.90, O09.91, O09.92, and O09.93

# Conclusions

- Rates of sexually transmitted infections are increasing every year. Arkansas ranks top 10 in most STI surveillance.
- Sexually active women <25 and high risk older women should be screened for chlamydia and gonorrhea annually. NAAT is best testing modality
- Syphilis rates quadrupled in last decade. Syphilis screening should be performed using reverse algorithm testing
- All patients 13-64 should have HIV screen