

Improving STD Care in MSM: GC and CT in MSM living with HIV

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Overview

- Epidemiology of STDs among men who have sex with men (MSM) in the U.S.
- 2010 STD Treatment Guidelines relevant to MSM
- Diagnostic and management challenges for specific STDs among MSM
- Additional resources relevant to clinicians working with MSM

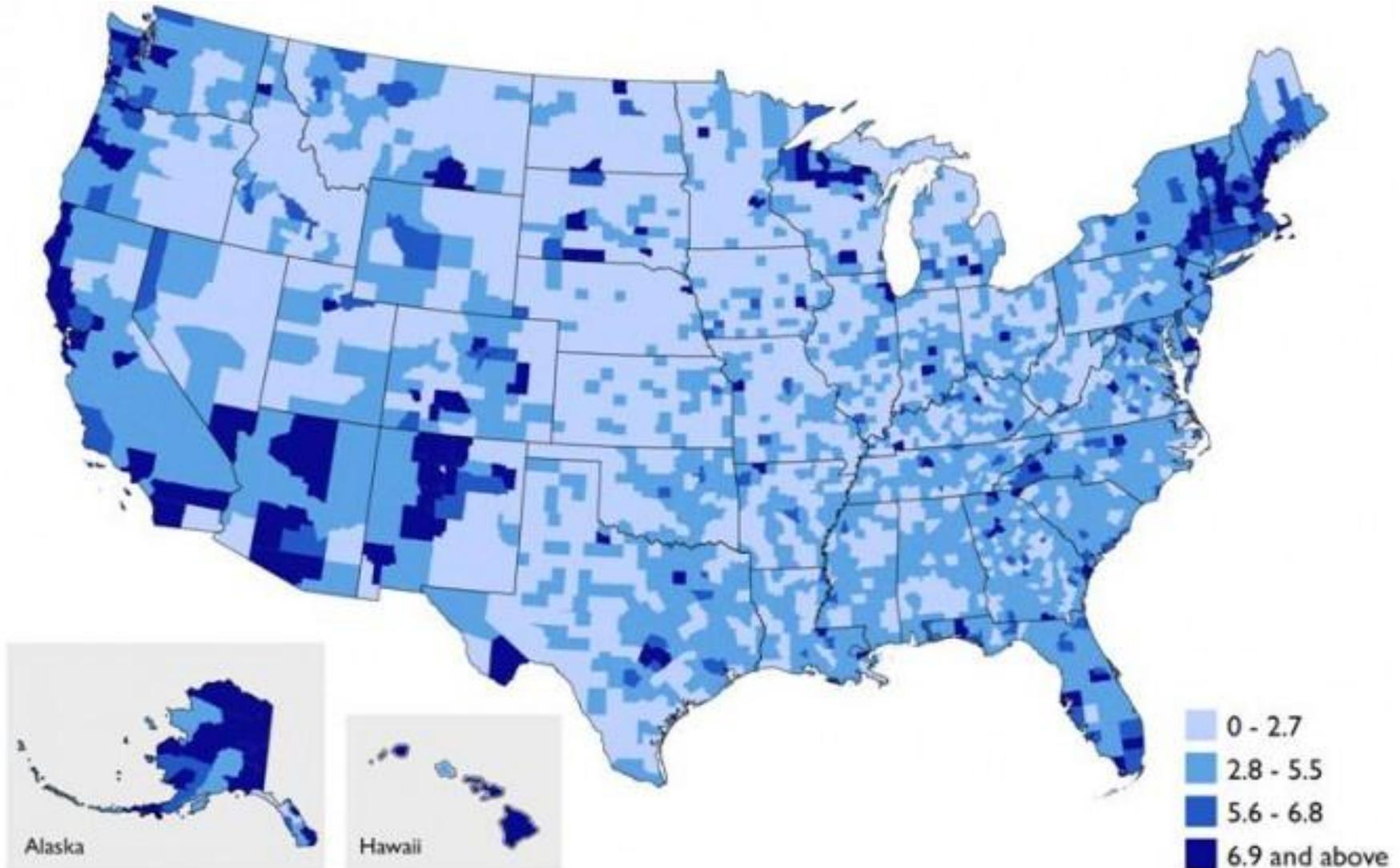
Why talk about this now?

How many gay people are there?

- Williams Institute 2011 estimates:
 - 9 million identify as LGBT = 3.5% of population
 - Includes 700,000 transgender
 - 19 million have had sex with same gender person = 8%
 - 25.6 million attracted to same sex = 11%
- Random exit polling data = 3.5% identify as LGBT

<http://williamsinstitute.law.ucla.edu/wp-content/uploads/Gates-How-Many-People-LGBT-Apr-2011.pdf>

Same-sex couples per 1,000 households by county (adjusted)

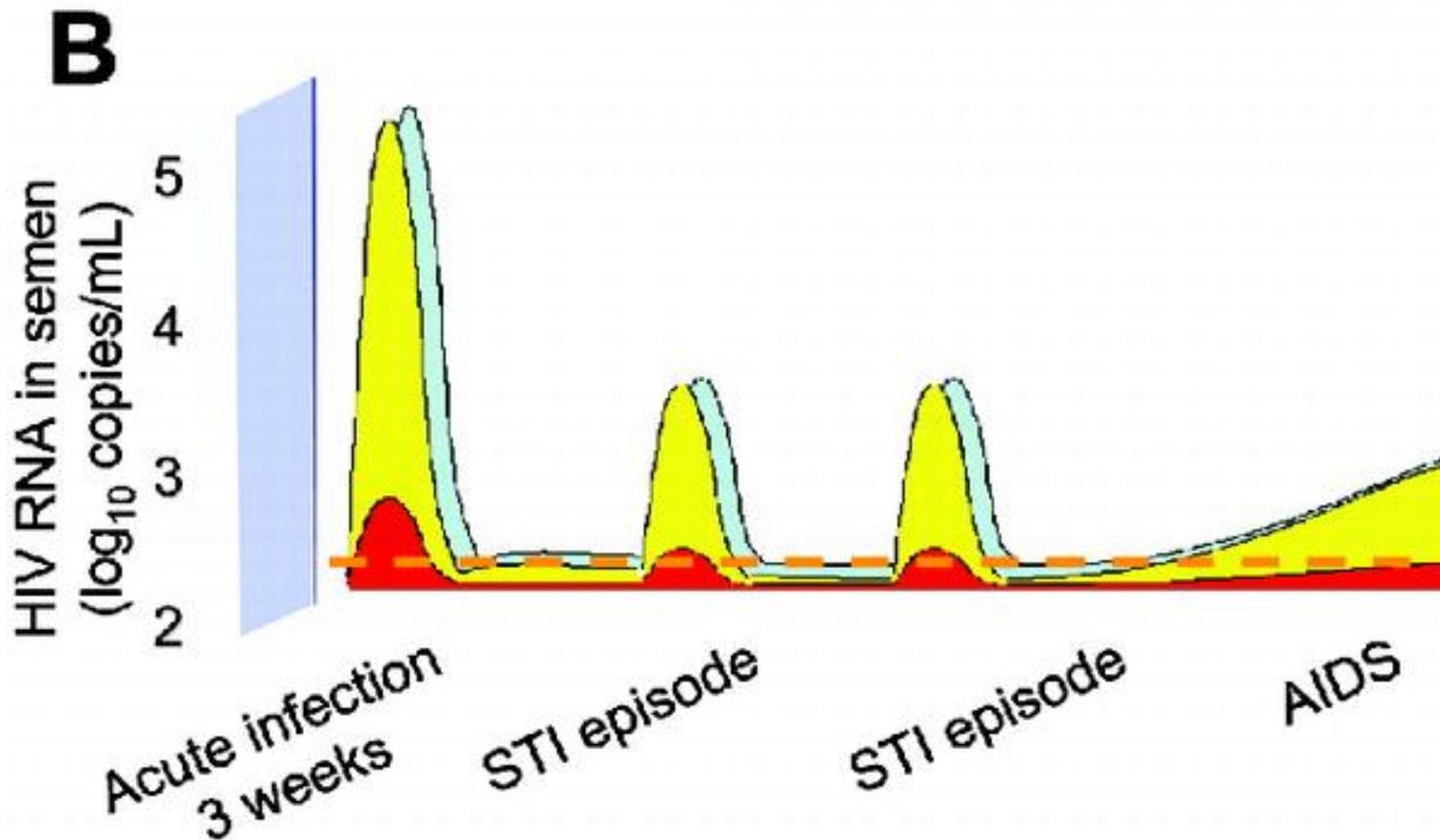


STDs are Associated with Increased HIV Acquisition and Transmission

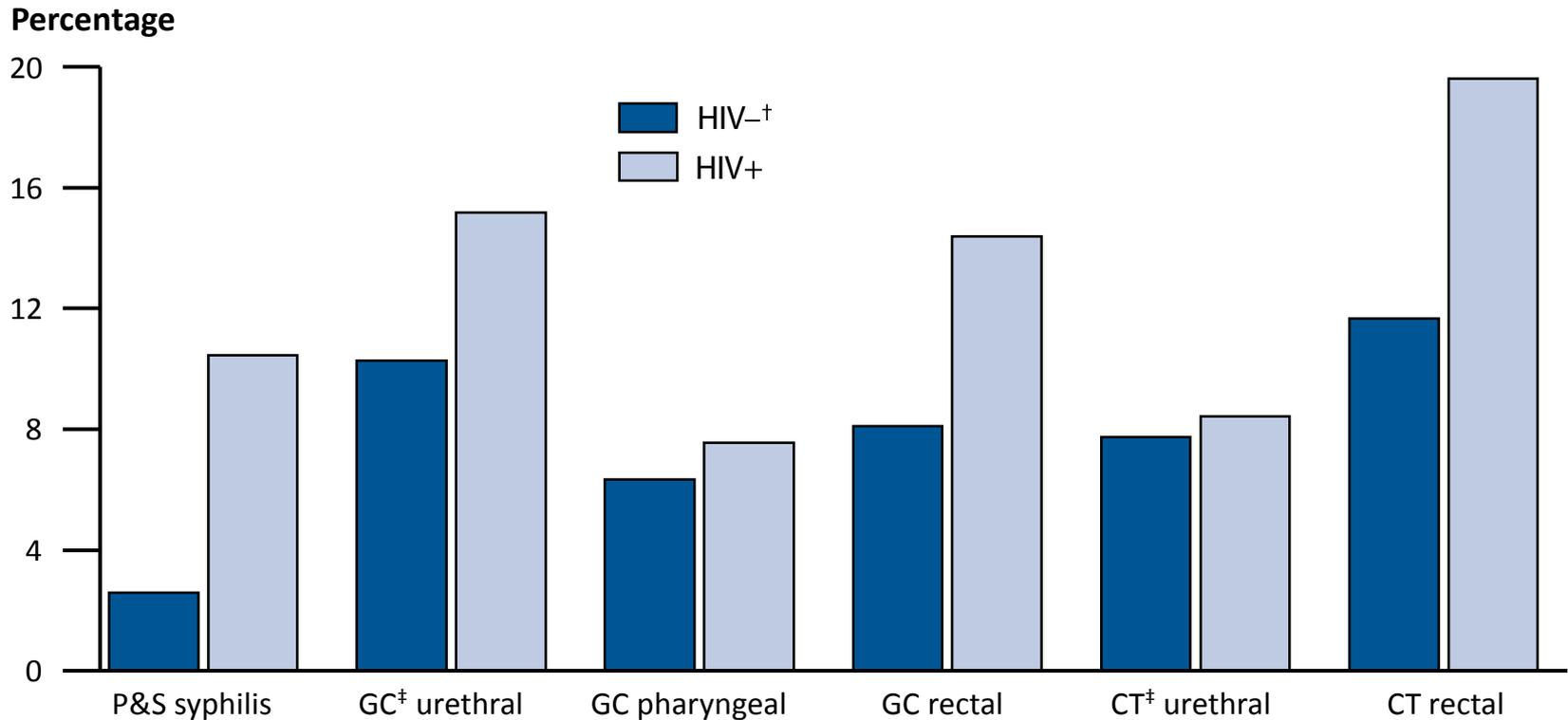
- STDs can produce mucosa breaks & inflammation that attracts immune cells (HIV target)
 - Genital ulcers: herpes, syphilis
 - Inflammation: gonorrhea, non-gonococcal urethritis
- STDs increase amount of HIV shed at genital mucosa
 - Cervix, urethra, rectum
- Some STDs increase plasma HIV viral load
- STD treatment (gonorrhea, syphilis, and trichomoniasis) can reduce plasma & genital HIV

• Paz-Bailey *JID* 2009 & *CID* 2010; Dunne *JAIDS* 2008; Johnson *STD* 2008

STD increase likelihood of HIV transmission



STD Surveillance Network (SSuN)—Proportion of MSM* Attending STD Clinics with Primary and Secondary Syphilis, Gonorrhea or Chlamydia by HIV Status, 2010

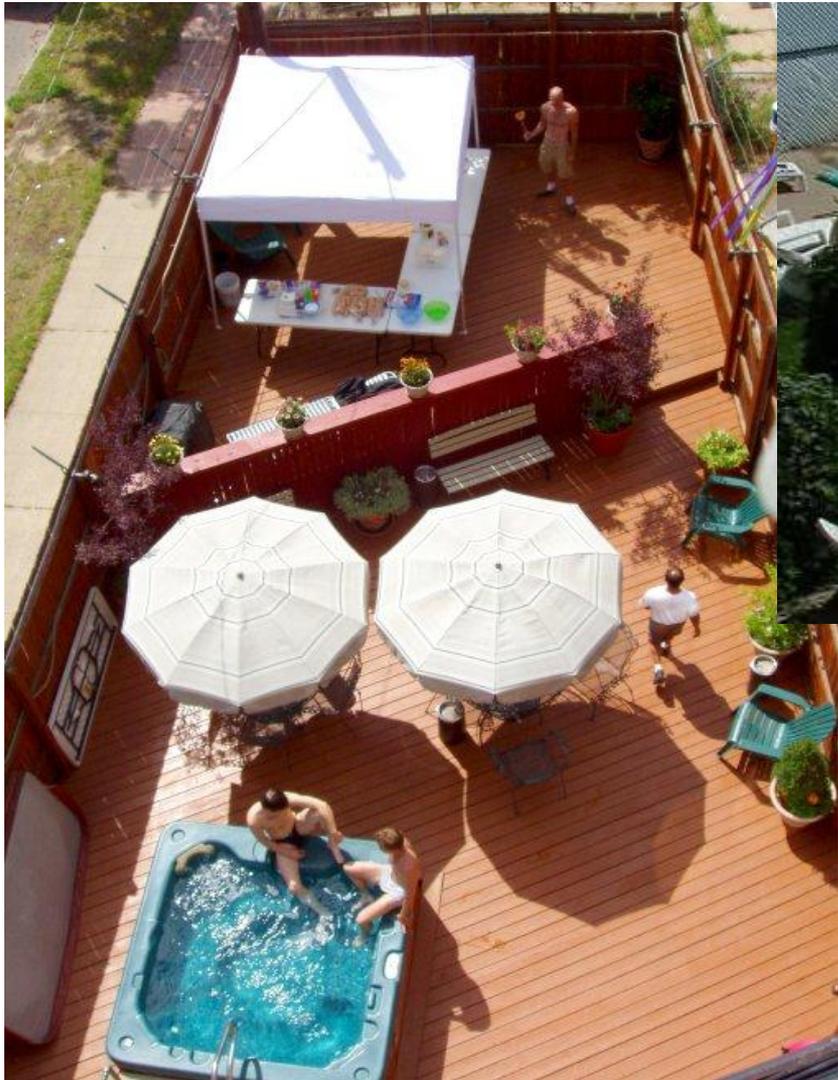


* MSM = men who have sex with men.

† HIV negative status includes persons of unknown status for this analysis.

‡ GC urethral and CT urethral include results from both urethral and urine specimens.

Old: Sex venues

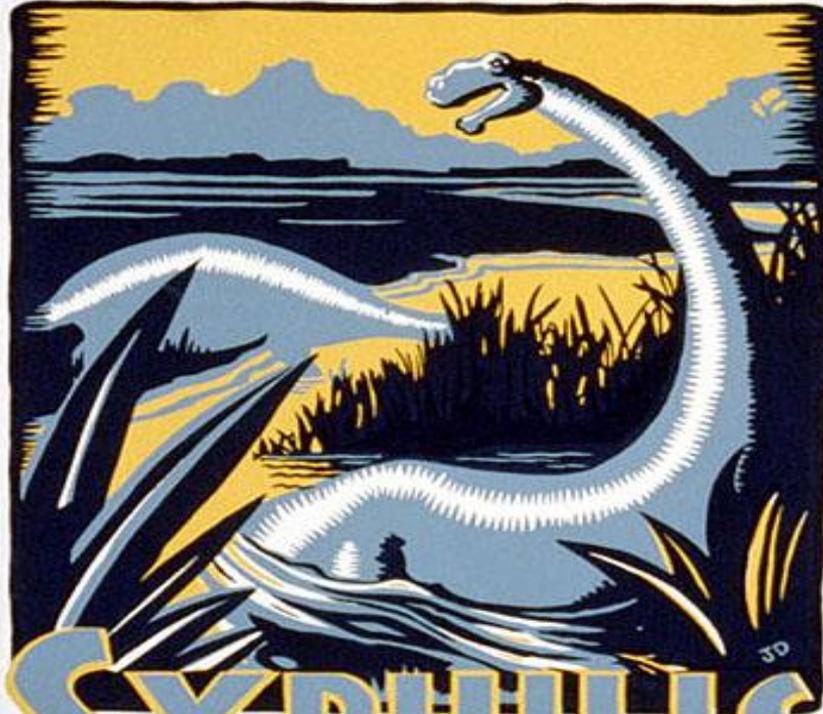


New: Sex on demand



Syphilis

AS OLD AS
CREATION



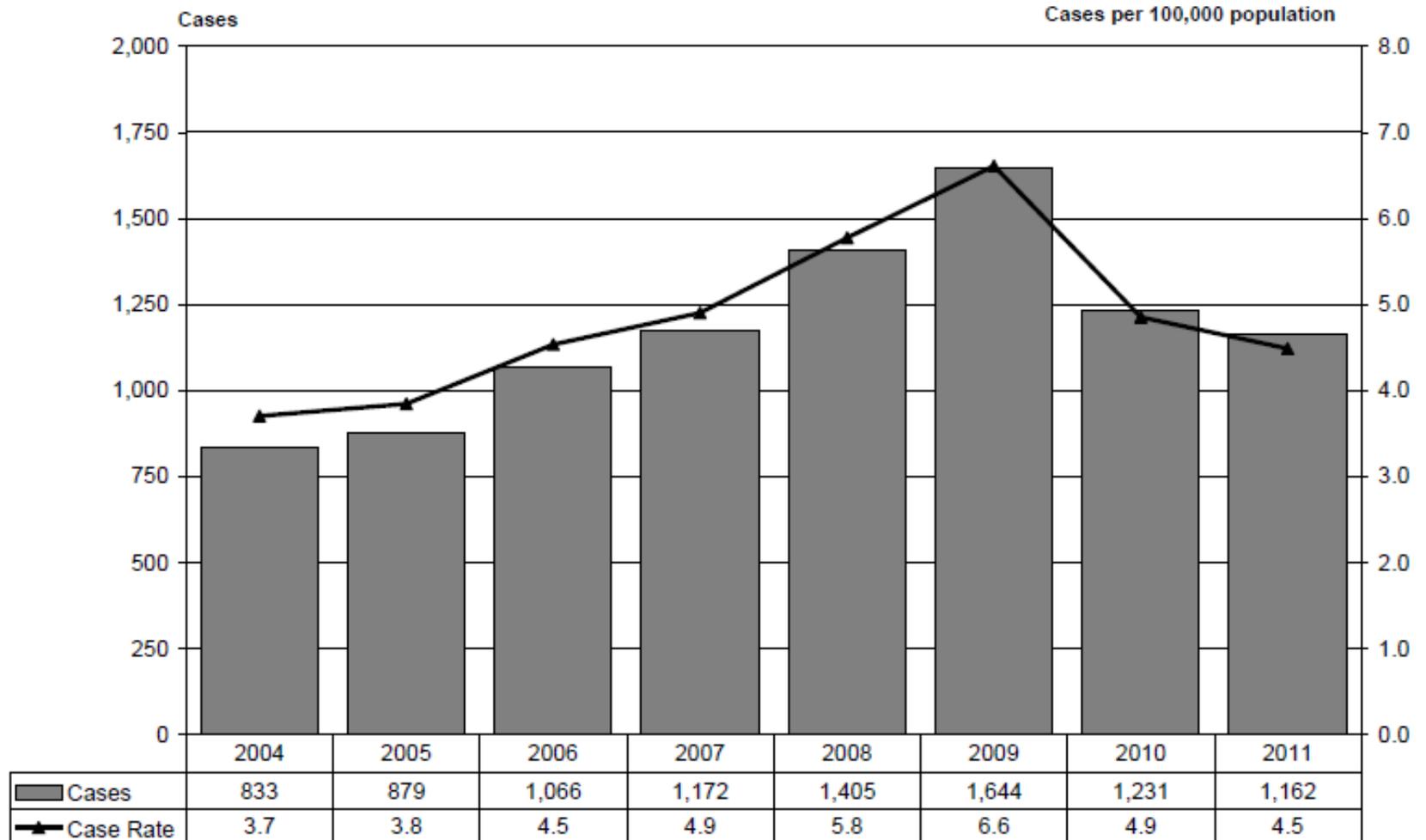
SYPHILIS
IS NOW CURABLE

CONSULT YOUR PHYSICIAN

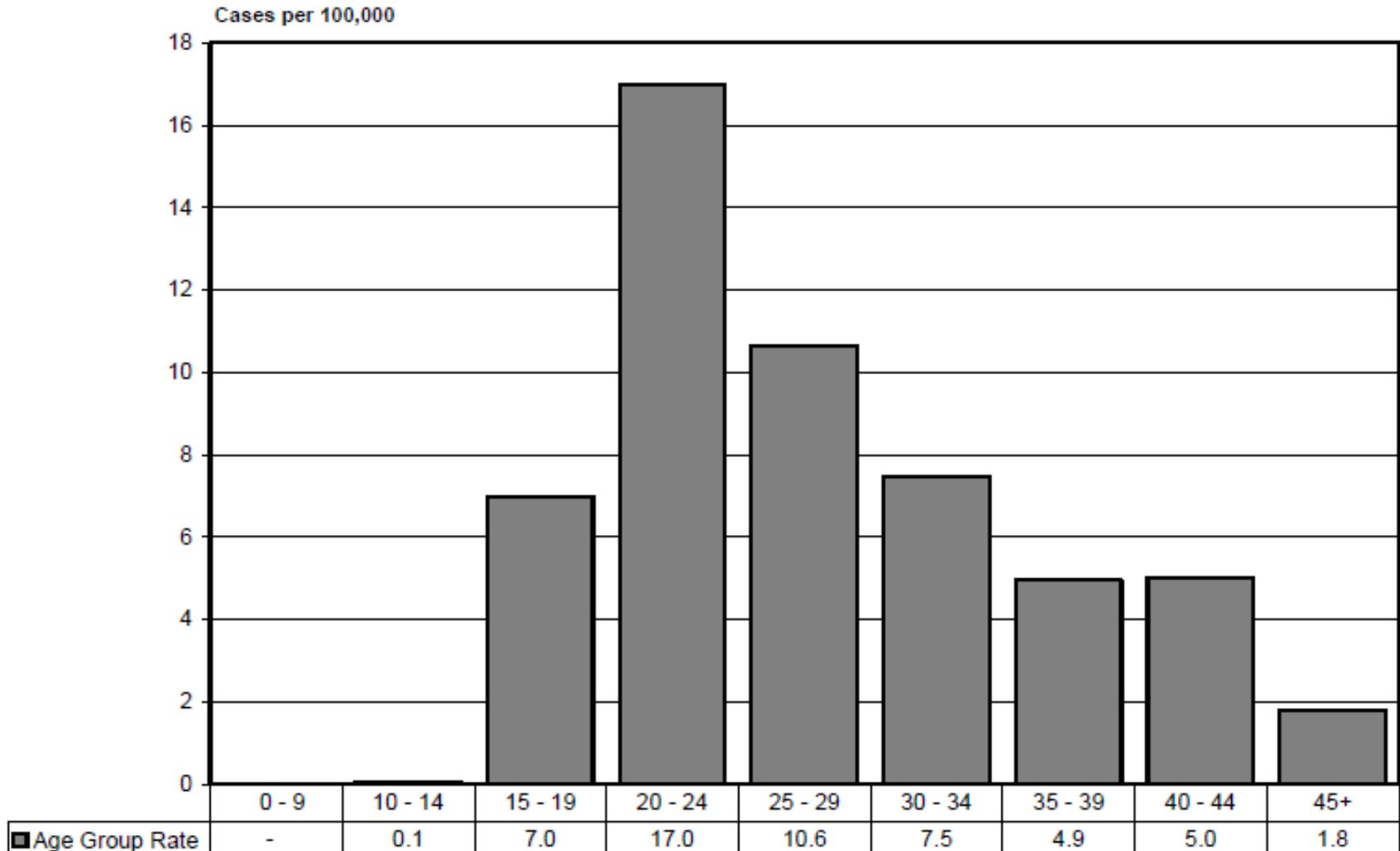
TOWN OF HEMPSTEAD
W.H. BUNCIE M.D. HEALTH OFFICER

FEDERAL PROJECT

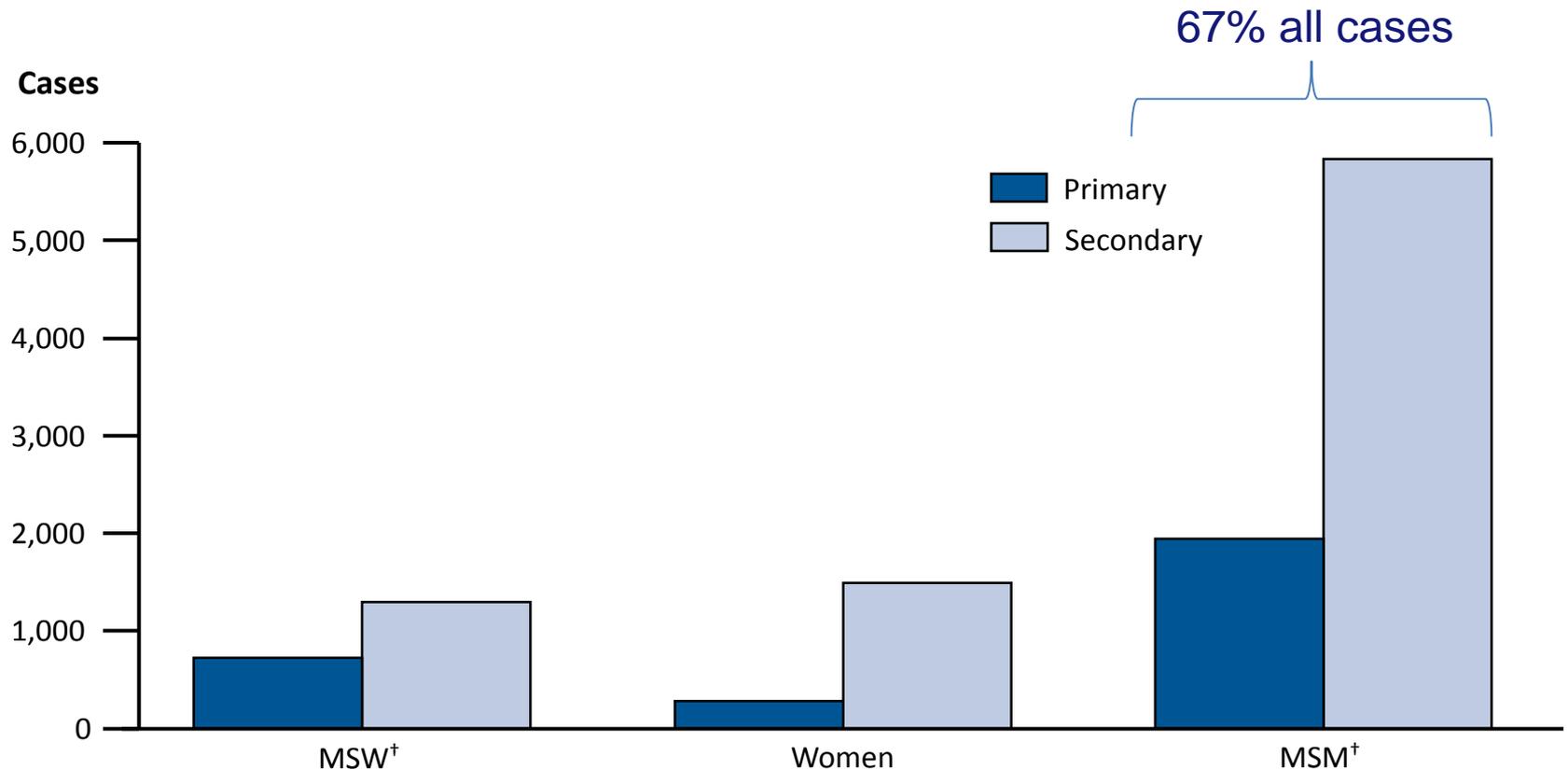
Primary and secondary syphilis cases and rates, Texas, 2004-2011



Primary and secondary syphilis case rates by age, Texas, 2011



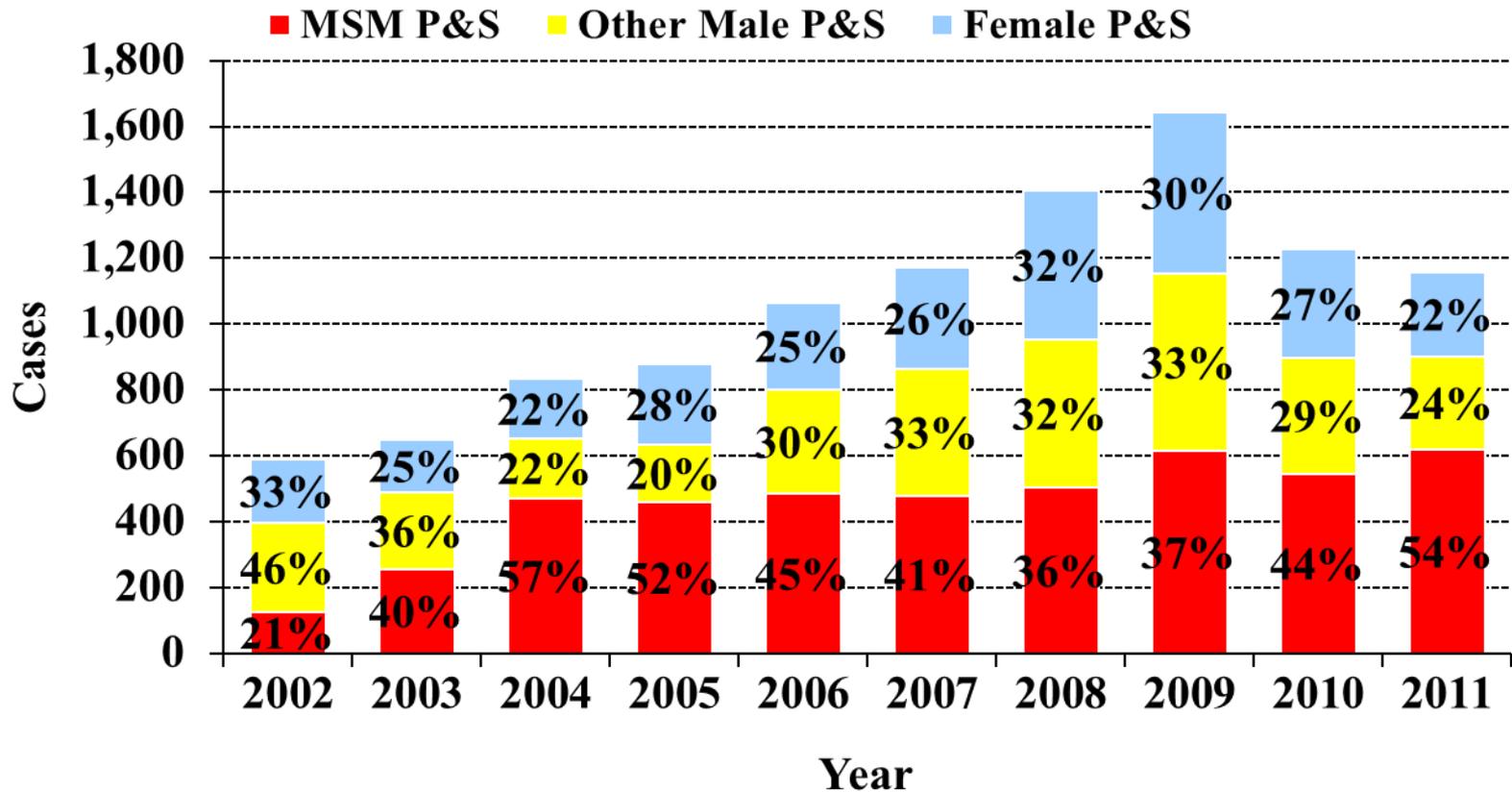
Primary and Secondary Syphilis—Reported Cases* by Stage, Sex, and Sexual Behavior, United States, 2010



* Of the reported male cases of primary and secondary syphilis, 18.3% were missing sex of sex partner information.

† MSW = men who have sex with women only; MSM = men who have sex with men.

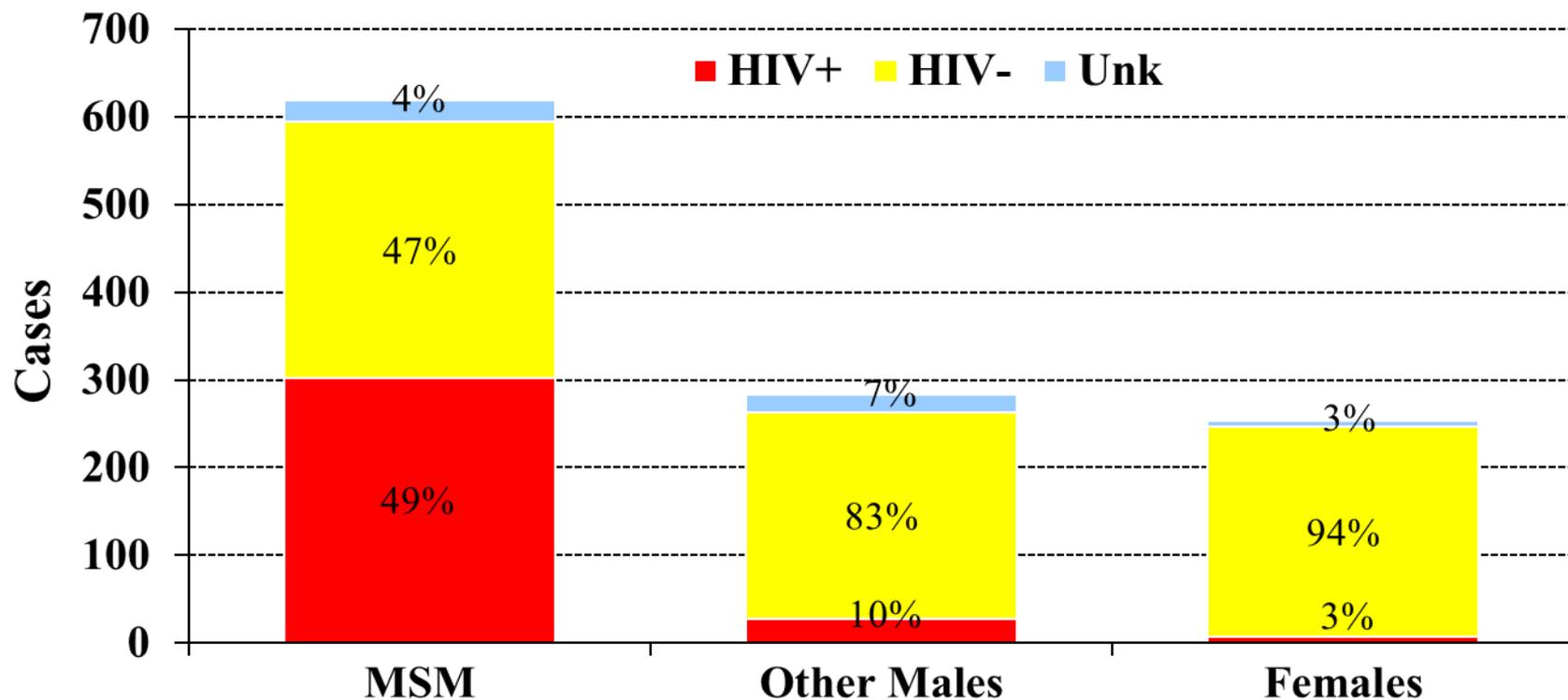
Primary & Secondary Syphilis Cases by Sex and MSM*: Texas, 2002-2011



*Men who have sex with men

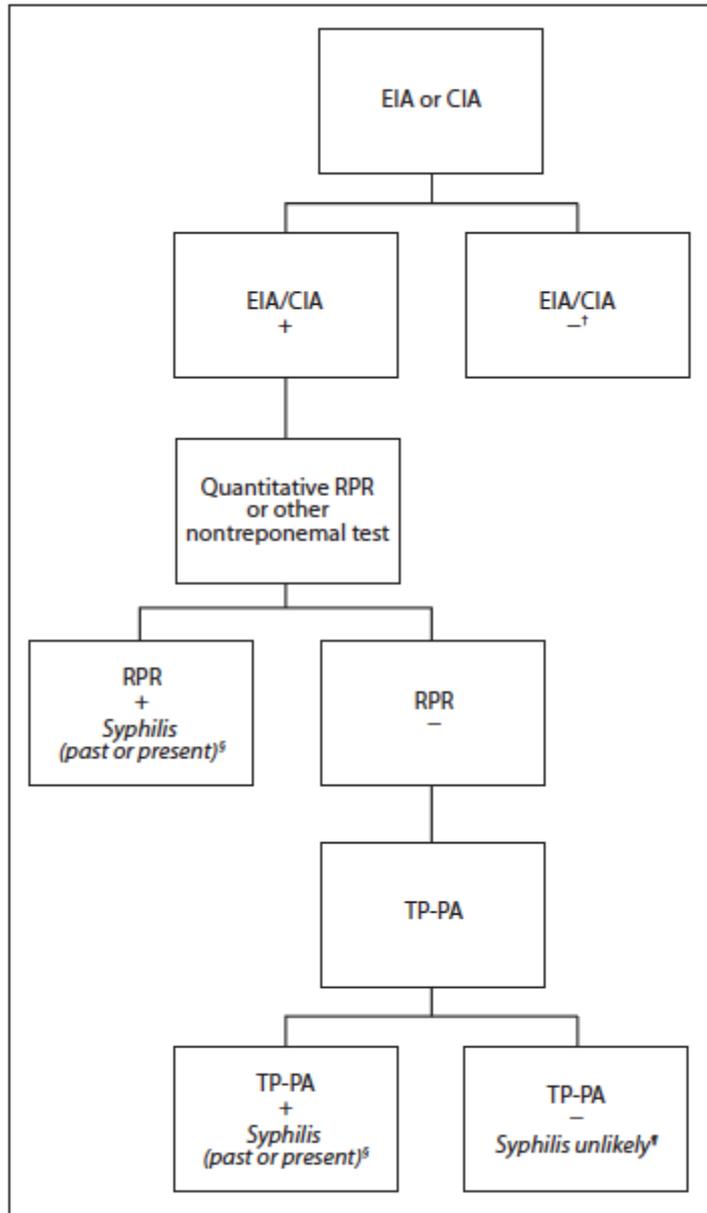
Total Texas P&S syphilis cases, N=1,162

HIV Status Among Primary & Secondary Syphilis Cases by Sex and MSM*: Texas, 2011



*Men who have sex with men

Total Texas P&S syphilis cases, N=1,162



Discordant Results from Reverse Sequence Syphilis Screening —
Five Laboratories, United States, 2006–2010

- Confirm positives with standard nontreponemal test titer (RPR/VDRL) to guide management
- If this is negative, perform a different treponemal test (TPPA)
- Patients with discrepant serology (e.g., positive EIA/CIA and negative RPR)
- Early untreated, false-positive EIA, OR previously treated syphilis

Early Syphilis Treatment

- Penicillin preferred for all stages
- Early syphilis (primary, secondary, early latent)
 - BZN PCN (L-A) single dose IM 2.4 million units
 - Do not use other injectable PCN formulations
 - Do not use azithromycin (resistance; treatment failure)
- Late latent
 - BZN PCN (L-A) IM 2.4 million units weekly x 3 doses (7.2 million u total)
- Alternatives: doxycycline, ceftriaxone

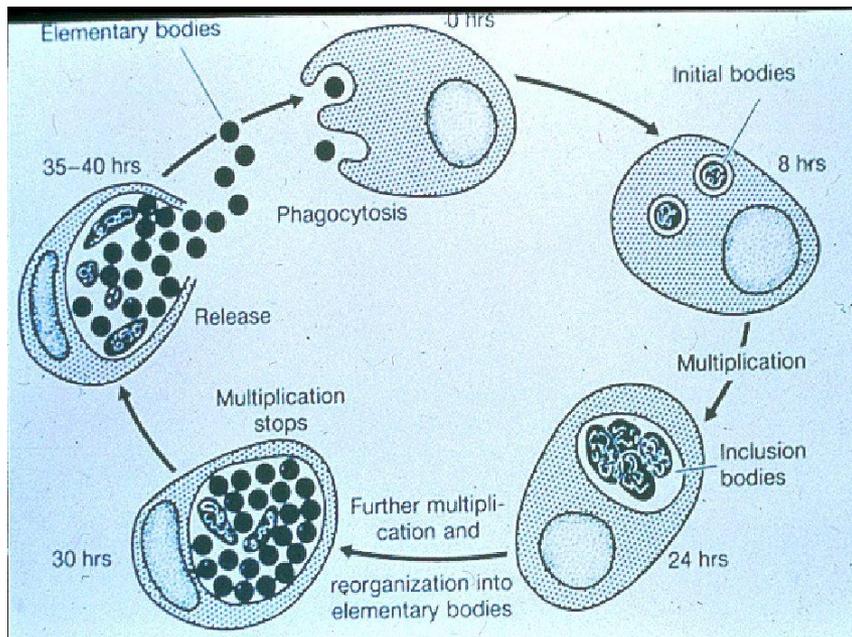


Chlamydia and Gonorrhea

Biology of CT and GC

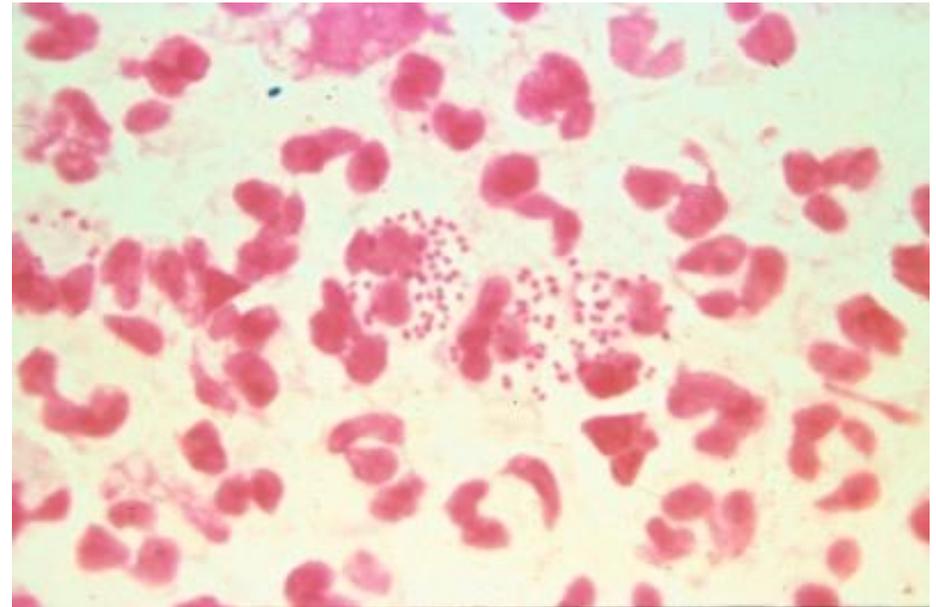
Chlamydia

- Slow growth
- Obligate intracellular organism
- Biphasic with sporelike form

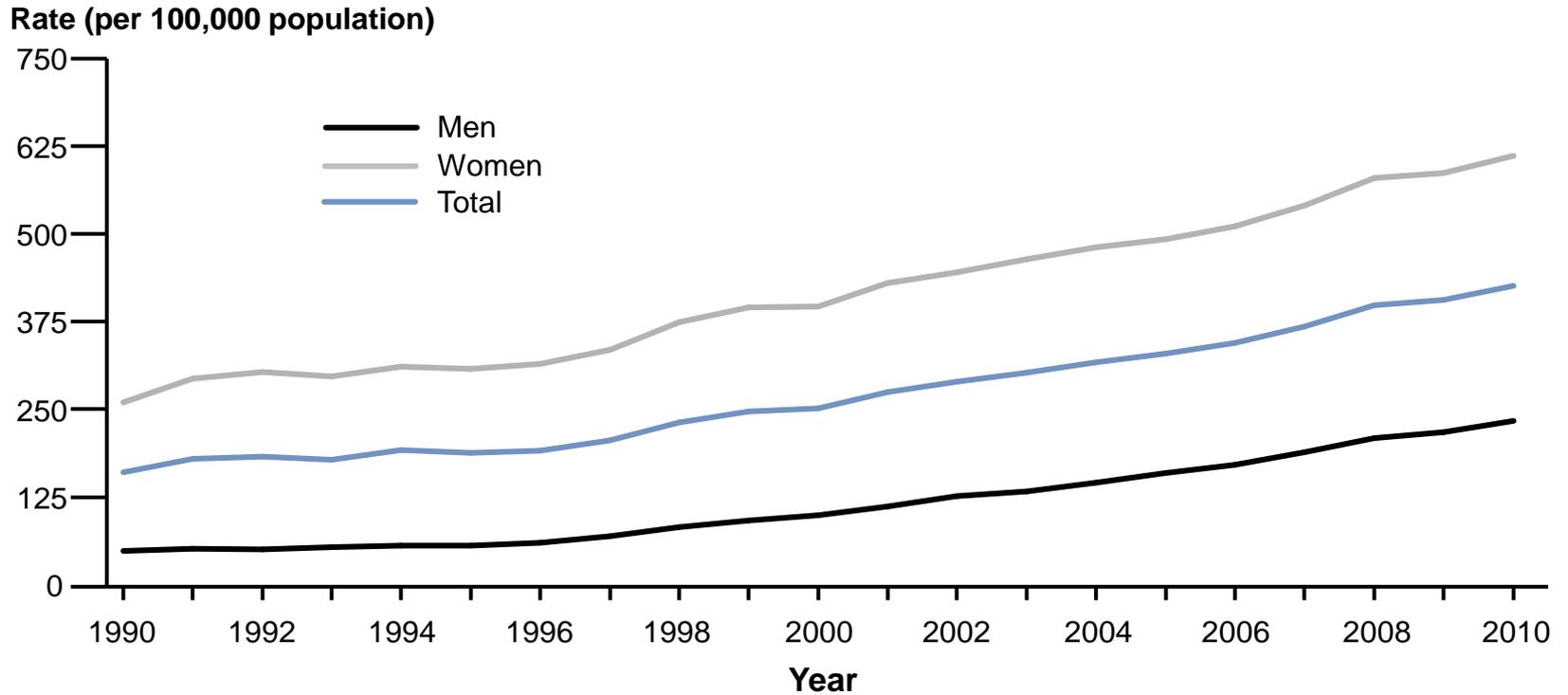


Gonorrhea

- Rapid growth
 - Multiple generations *per* hour
- Facultative intracellular organism
- Doesn't tolerate drying

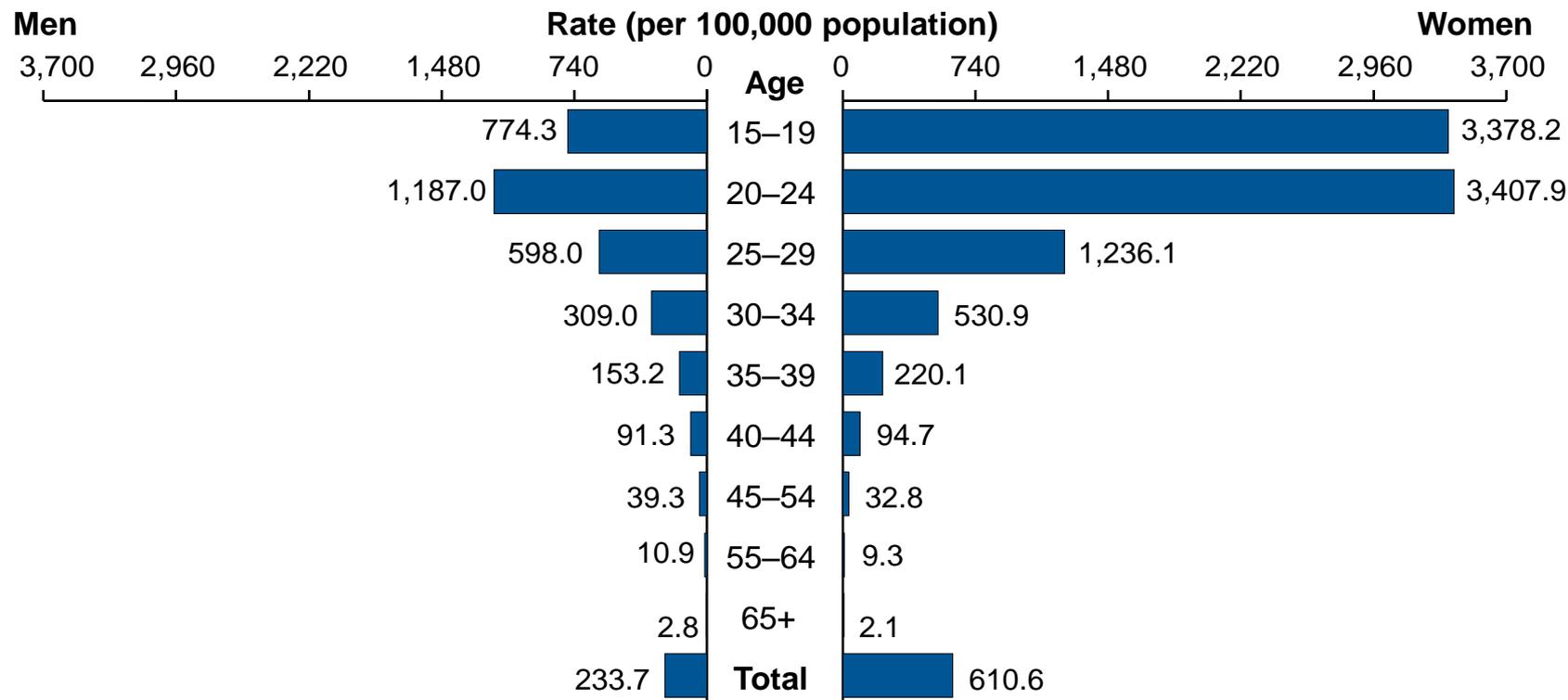


Chlamydia—Rates by Sex, United States, 1990–2010

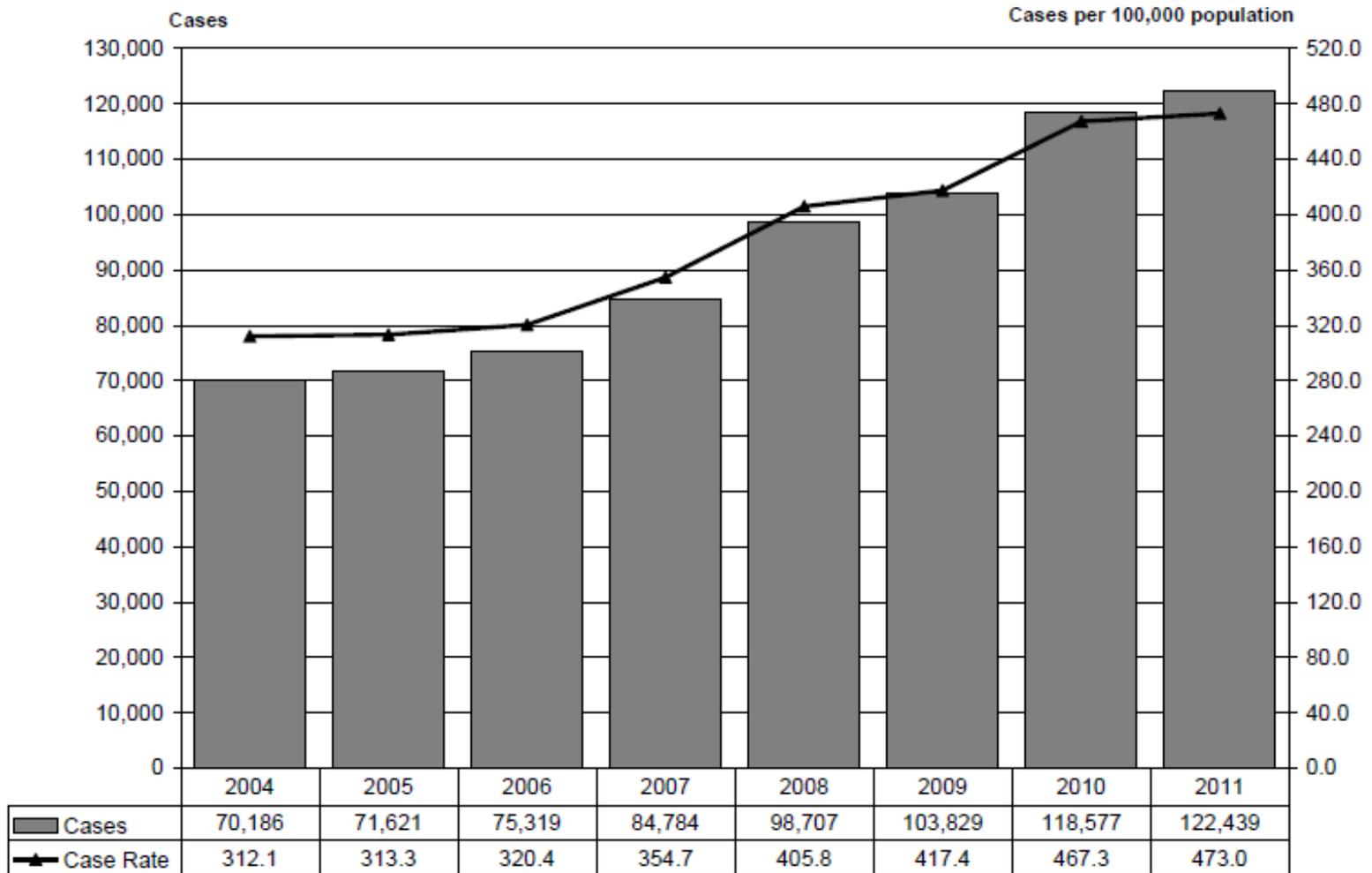


NOTE: As of January 2000, all 50 states and the District of Columbia have regulations that require the reporting of chlamydia cases.

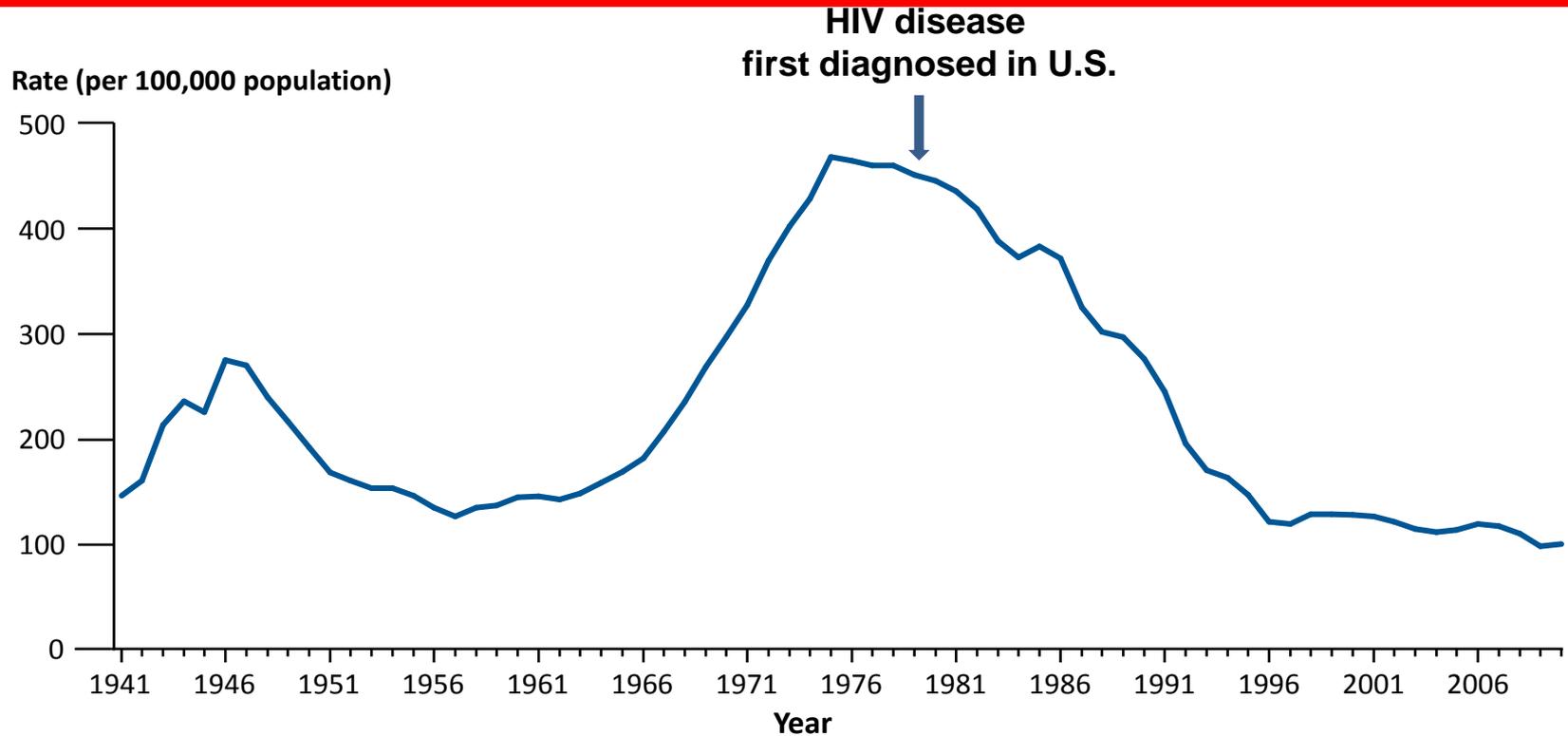
Chlamydia—Rates by Age and Sex, United States, 2010



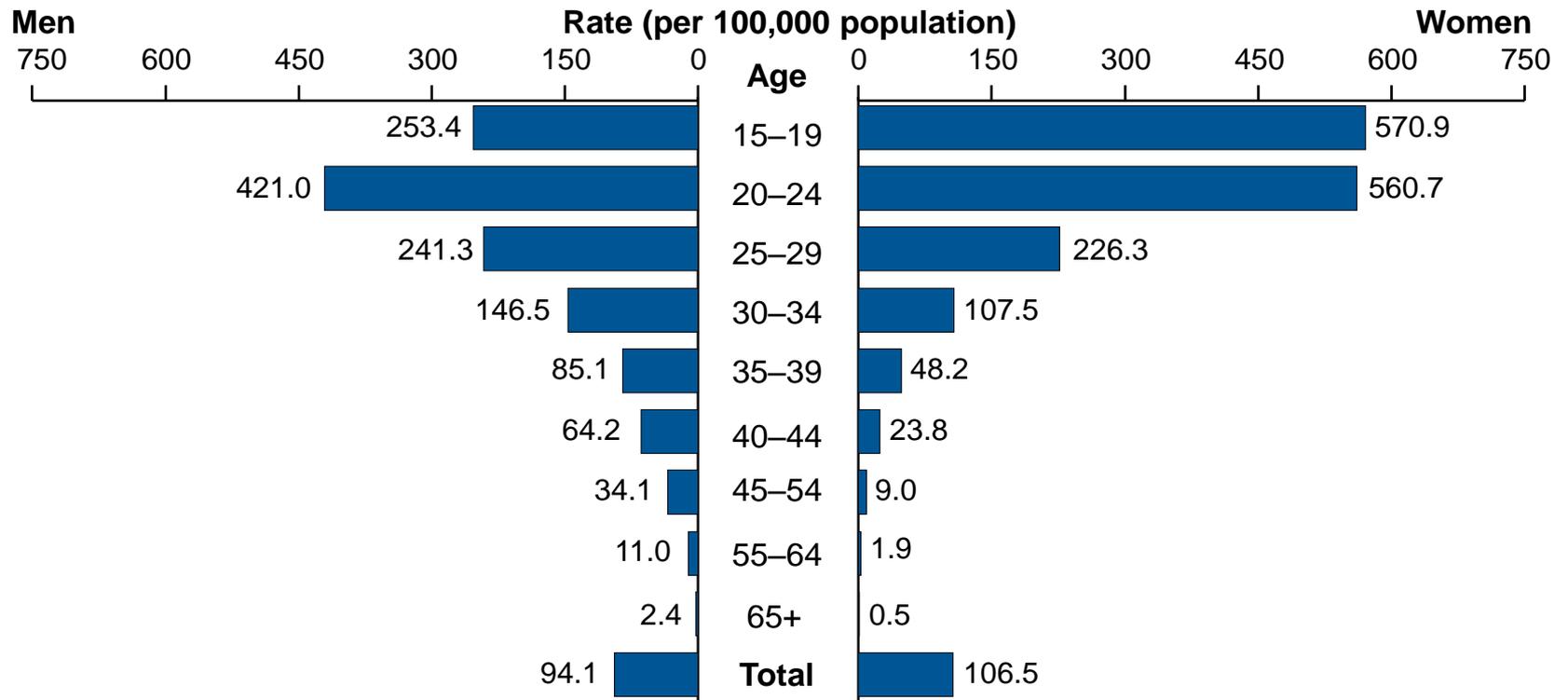
Chlamydia cases and rates, Texas, 2004-2011



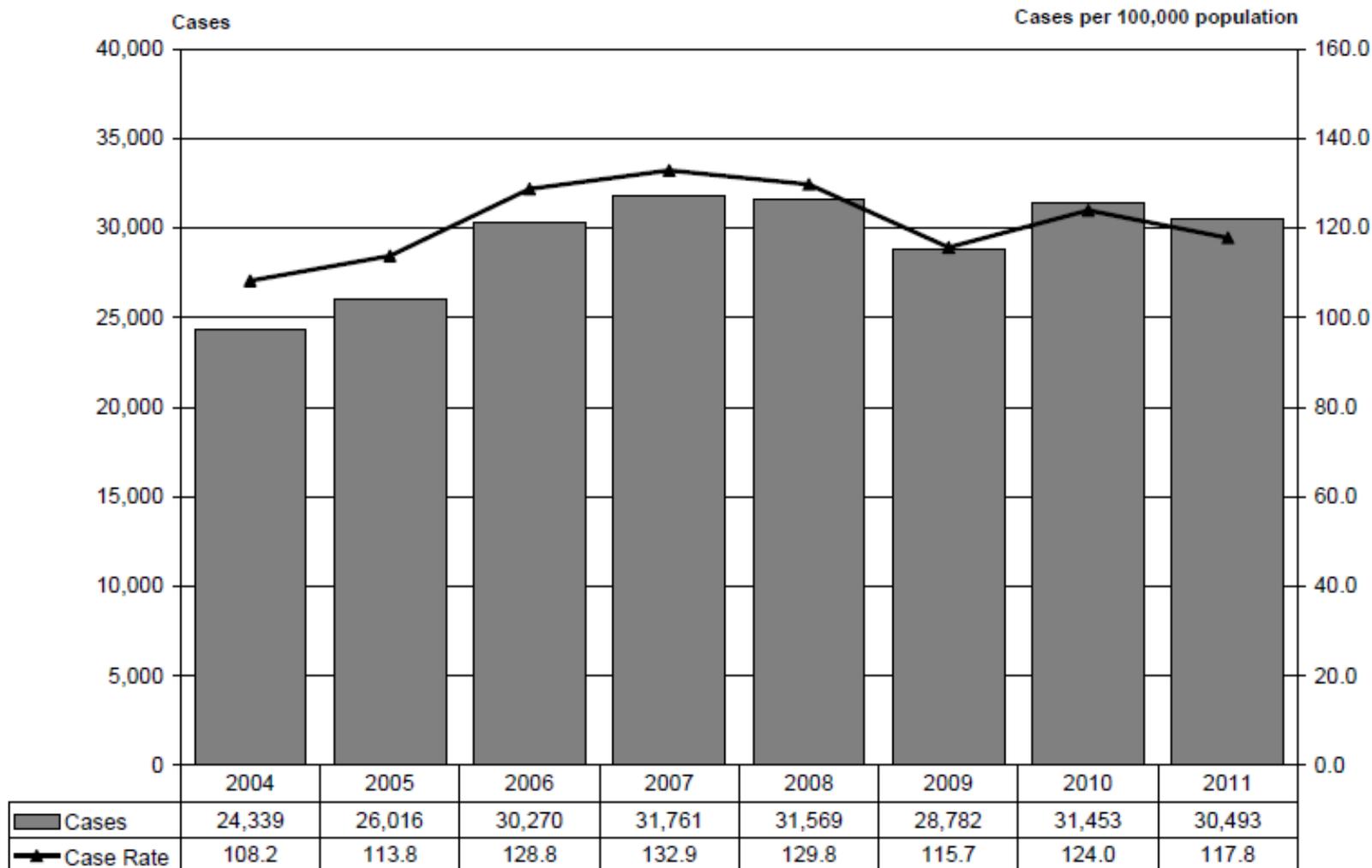
Gonorrhea—Rates, United States, 1941–2010



Gonorrhea—Rates by Age and Sex, United States, 2010



Gonorrhea cases and rates, Texas, 2004-2011



Biology of Transmission

- Humans are only hosts of CT and GC
- Both CT and GC infect non-cornified epithelial tissue
 - Found in urethra, endocervix (not vaginal mucosa), upper reproductive tracts, anus, pharynx
- Transmission requires physical contact with infected tissue

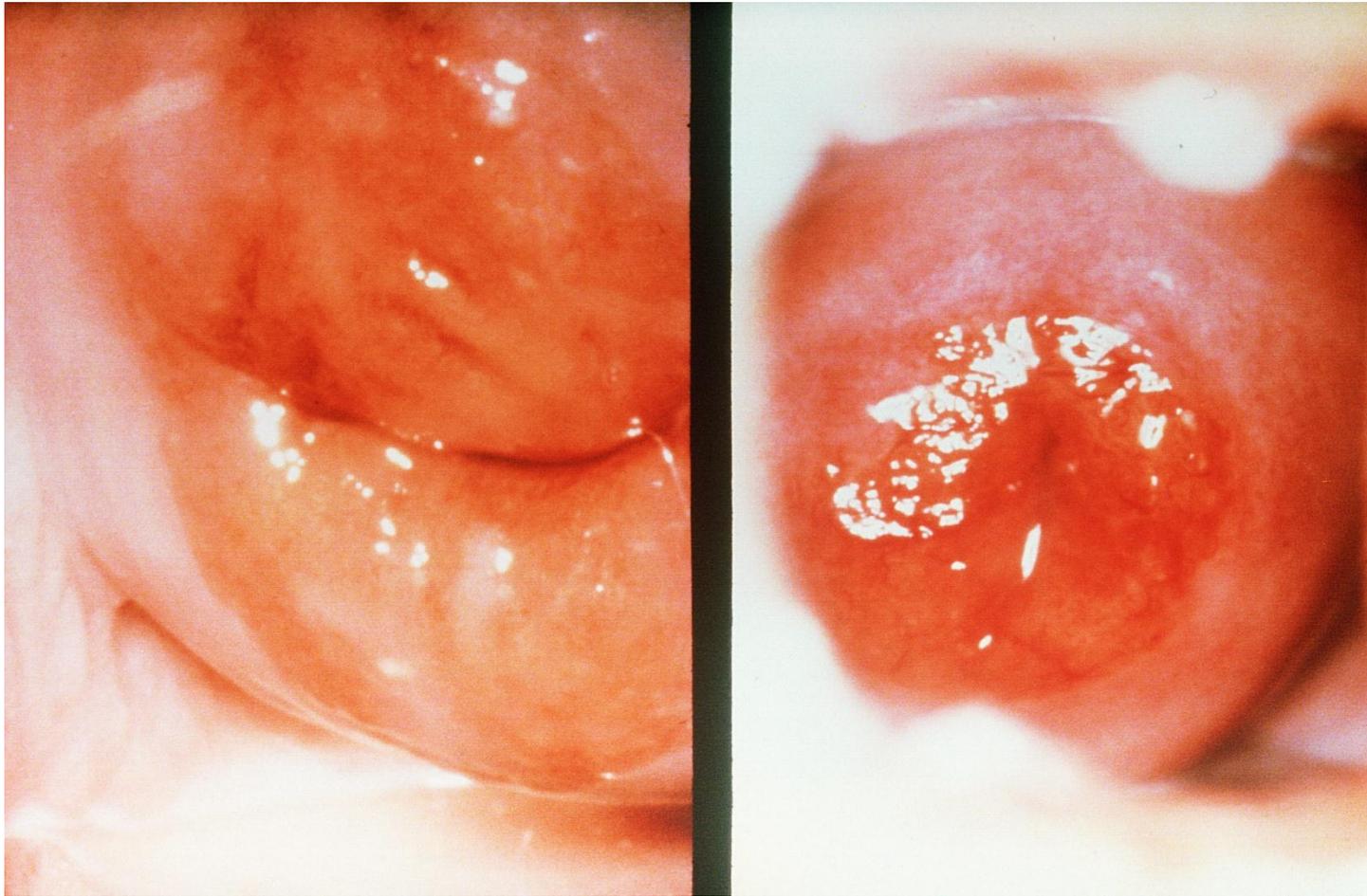
Clinical Characteristics of Gonococcal and Non-Gonococcal Urethritis

- GC: 2-8 day incubation period, abrupt onset, prominent dysuria, urethral discharge (74% purulent, 22% white, 4% clear)
- NGU: 7-14 day incubation period, gradual onset, variable dysuria, urethral discharge (11% purulent, 56% white, 33% clear)
 - 40% caused by CT, remainder by a variety of agents including *M. genitalium*, *U. urealyticum*, HSV, trichomonas (more likely if >40 vs. <40 yo)

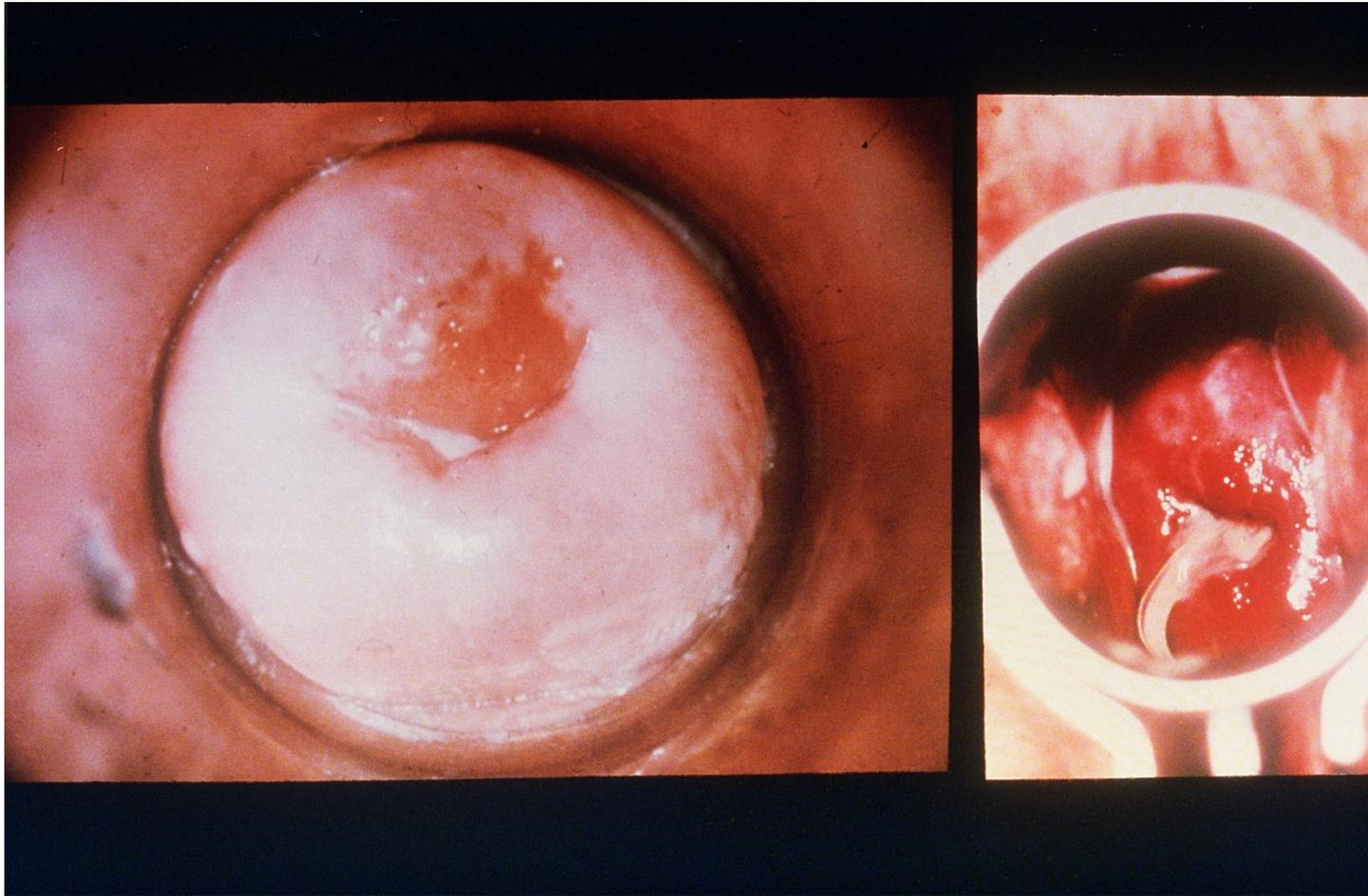
Clinical Manifestations of Chlamydia and Gonorrhea

- *Men*: CT and GC both can cause urethritis, epididymitis, proctitis, conjunctivitis, pharyngitis (rare – asymptomatic carriage more common)
- *Women*: CT and GC both can cause cervicitis, urethritis, PID, proctitis, conjunctivitis, pharyngitis (rare – asymptomatic carriage more common)
- CT: men >50%, women >85% asymptomatic
- GC can disseminate (skin lesions, arthritis)
- *Infants*: GC: conjunctivitis; CT: conjunctivitis, pneumonia

Non-gonococcal cervicitis



Gonococcal cervicitis

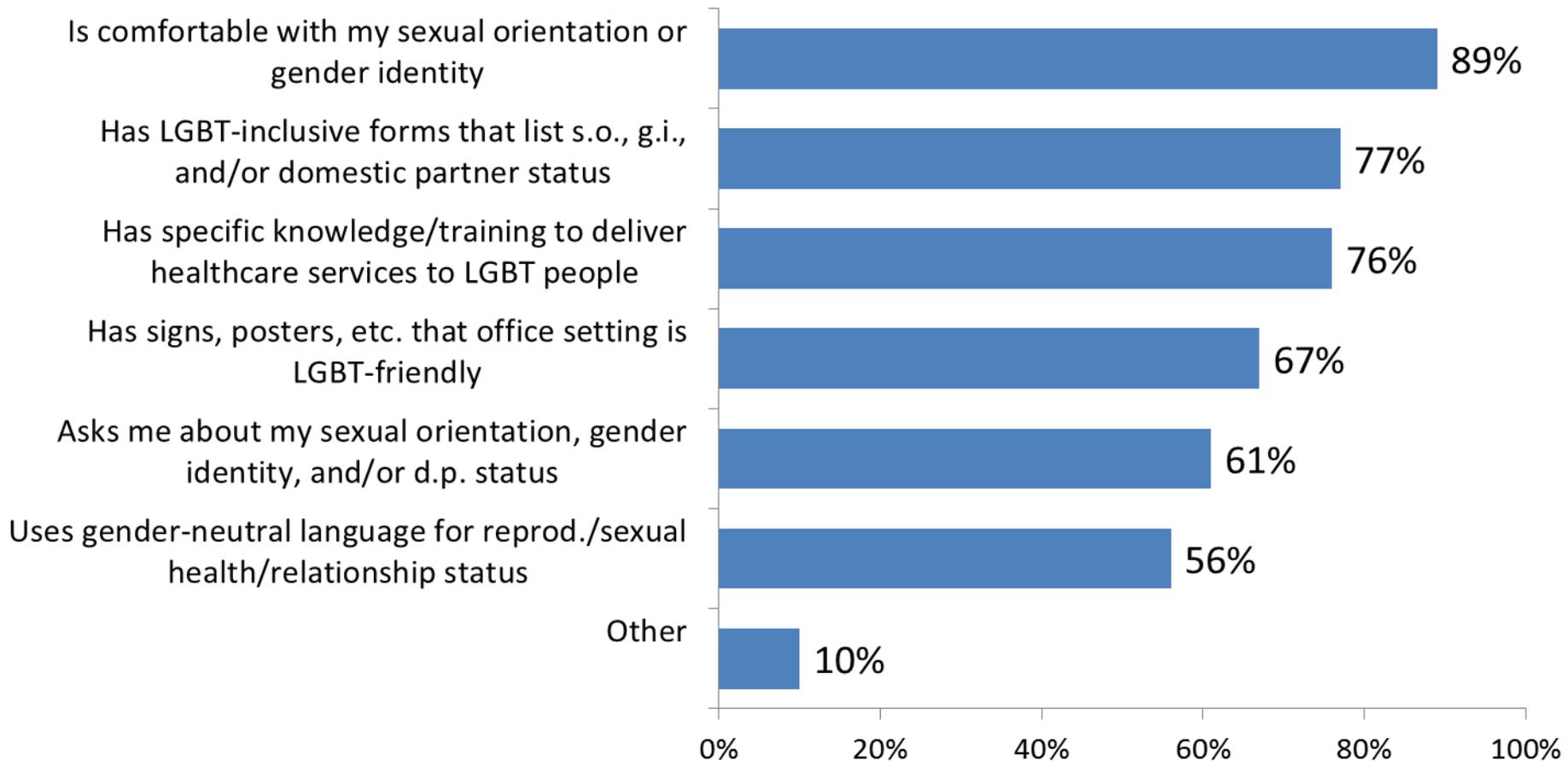




What can we do?

How to be more LGBT friendly

What would make you consider your primary healthcare provider LGBT-friendly? If my provider:



Base: Those who said their primary healthcare provider is not LGBT-friendly or they are not sure if their provider is LGBT-friendly

Keyword: Inclusivity

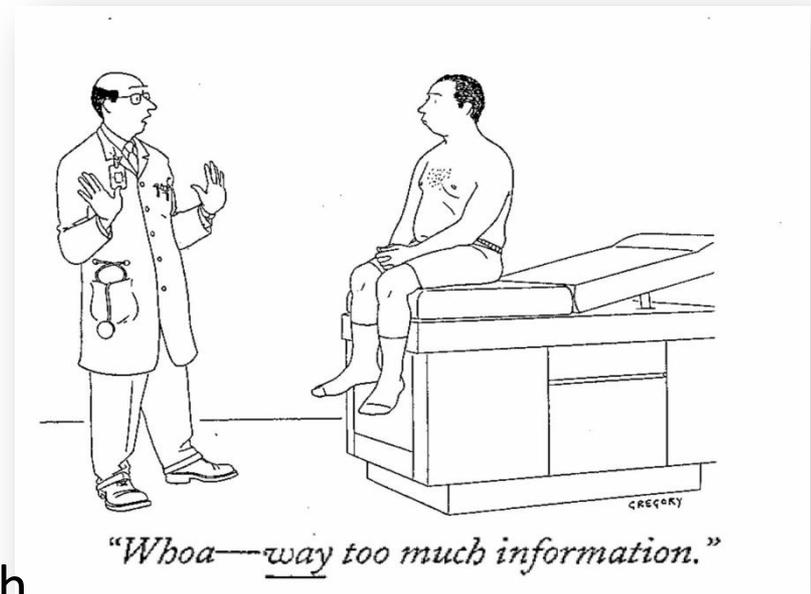
- Avoid assumptions about orientation
 - Behavior \neq Identity
- Use generic terms:
 - “Partner” or “Spouse”
- “Do you have sex with men, women, or both?”
 - “Single,” “married,” or “divorced” not inclusive enough
- Non-judgmental attitude

Detailed history

- Sexual history - may need to be very detailed
 - Who put what where?
 - And who was involved?
- Use/abuse of alcohol and drugs
 - Don't forget “designer” drugs
- Social supports/Psychological assessment

STD Screening in MSM: the Medical History

- Assess STD risks, including routine inquiry about sex partners/activities
- Ask about symptoms of STDs:
 - Urethral discharge
 - Dysuria
 - Genital/perianal ulcers
 - Regional lymphadenopathy
 - Skin rash
 - Anorectal symptoms consistent with proctitis: discharge, pain on defecation or intercourse
- Many STDs are asymptomatic



STD Screening in MSM:

2010 CDC STD Treatment Guidelines

- HIV: HIV serology, if negative or not tested in past year
- Syphilis: Syphilis serology
- Gonorrhea and Chlamydia:
 - Urethral GC/CT if insertive intercourse in past year (urine NAAT preferred)*
 - Rectal GC/CT if receptive intercourse in past year (NAAT on rectal swab preferred)*
 - Pharyngeal GC if receptive oral sex in past year (NAAT on pharyngeal swab preferred)
- Hepatitis B: HBsAg to detect current infection
- Hepatitis C: HCV testing if HIV+ or IDU

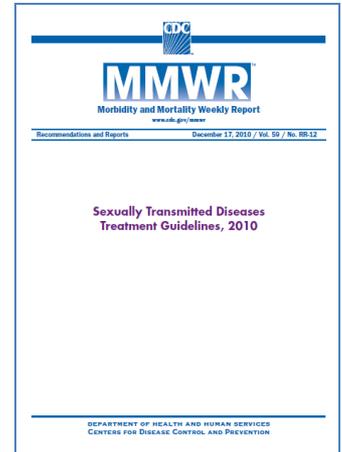
consider HSV-2 type-specific serologic testing and anal Pap for HPV

*regardless of reported condom use

STD Screening Frequency for MSM: 2010

CDC STD Treatment Guidelines

- At least annually for all sexually active MSM
- More frequent STD screening (i.e., at 3-6 month) for MSM
 - Who have multiple or anonymous partners
 - Who have sex in conjunction with illicit drug use (particularly methamphetamine use)
 - Whose sex partners participate in these activities

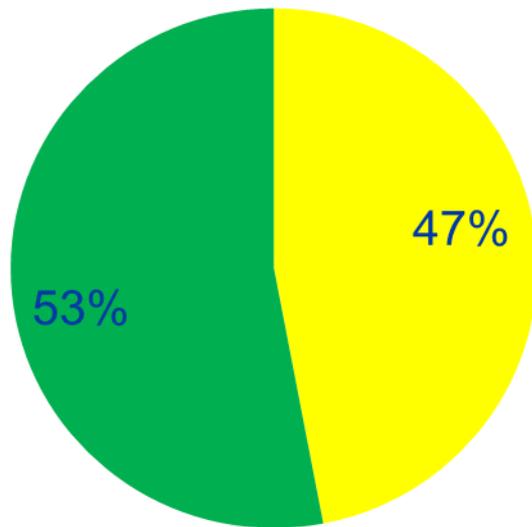


Screening could be done in a variety of ways

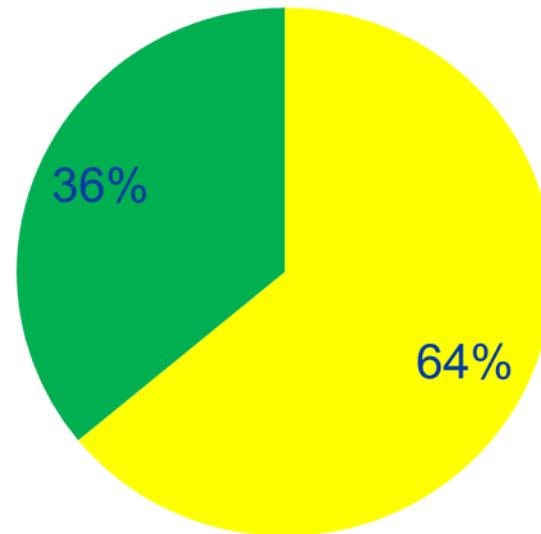
- Patient driven risk assessment
 - Forms
 - Electronic
- Provider directed risk assessment (directly implemented or review of patient completed forms)
 - Provider driven
 - Medical tech driven
 - Nurse driven
- Automated
 - screening always occurs at annual visit or linked with routine event

Chlamydia and Gonorrhea Infections: Proportion not identified if screening MSM only at urine/urethral sites

Chlamydia

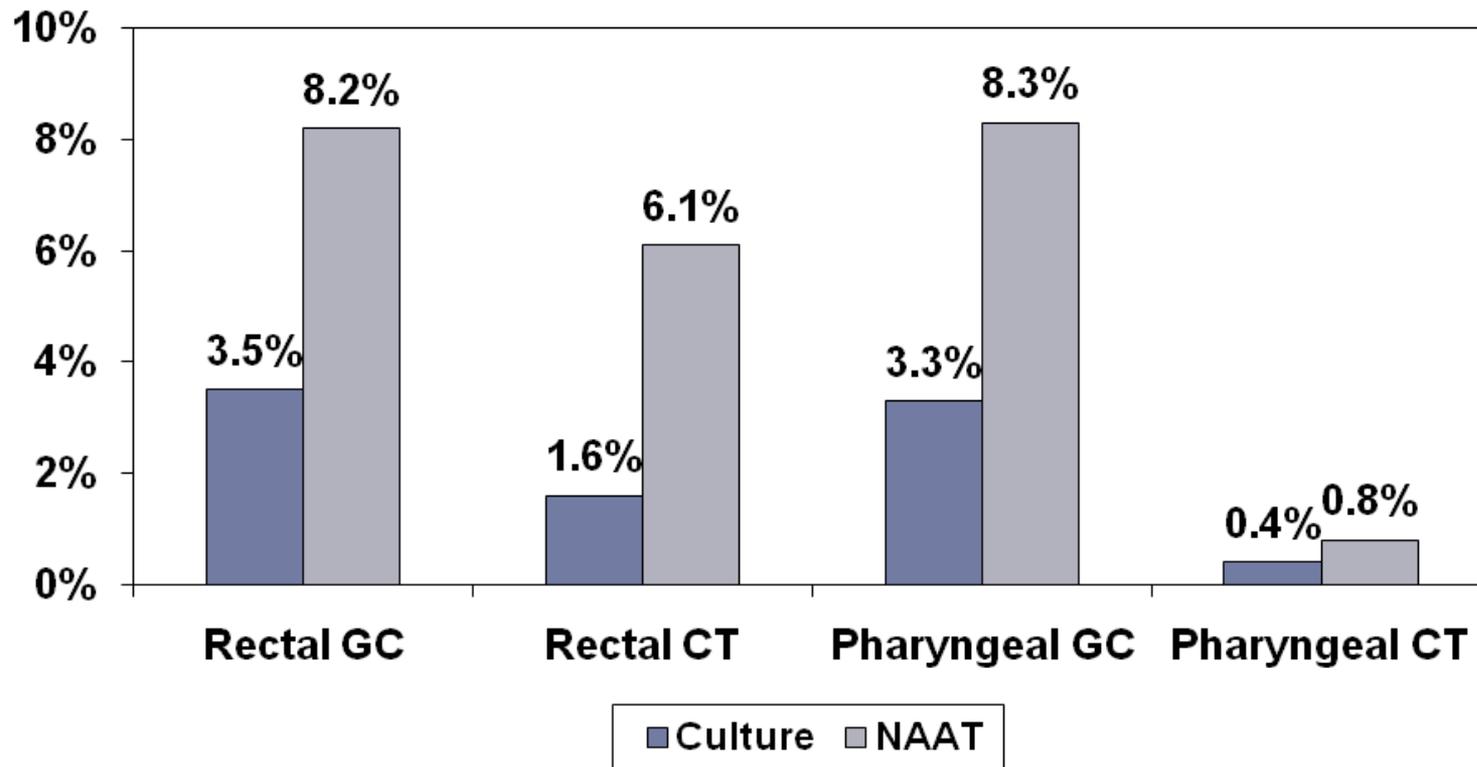


Gonorrhea



■ Identified ■ Not identified

NAAT testing in extragenital sites identifies disease



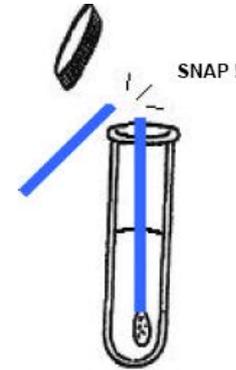
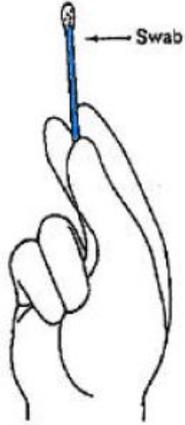
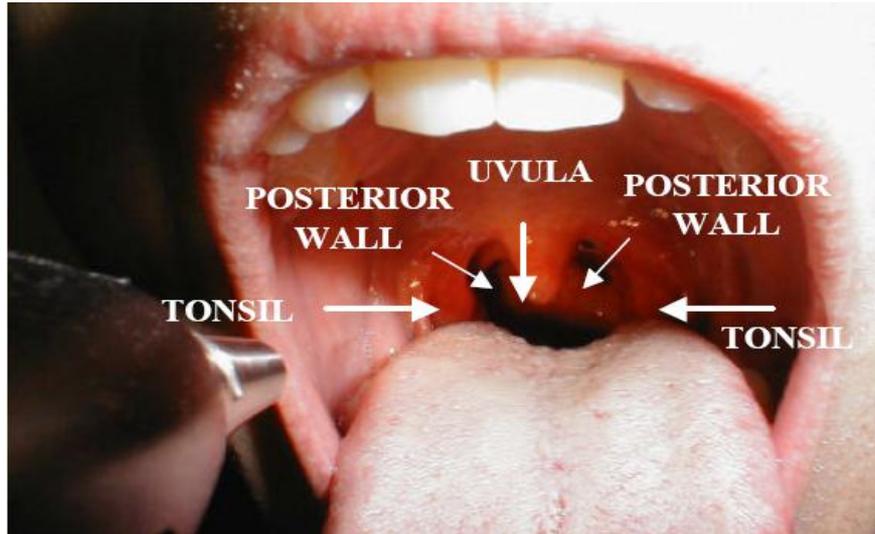
Pharyngeal Swab Collection Instructions

Step 1

Open Unisex APTIMA Collection kit and remove tube. Tube may be placed in holding rack. Remove the swab with the **BLUE** shaft. **USE BLUE SHAFT SWAB ONLY**

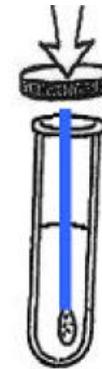
Step 2

Instruct patient to open mouth widely. A tongue depressor may be used to gently move the tongue down as needed. Swab the throat using the **BLUE** shaft swab, making good contact with key areas of the throat as shown below.



Step 3

Remove the cap from the test tube. Place the swab in the test tube. Do not puncture the foil cap. Break swab shaft at the score mark.



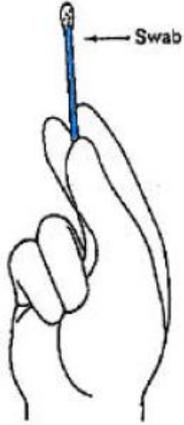
Step 4

Put cap back tightly on test tube to prevent any leaking. Try not to splash liquid out of the tube.

Step 5

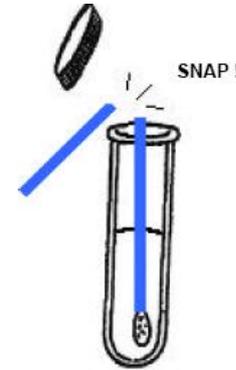
Discard wrapper and wash your hands.

Rectal Swab Collection Instructions



Step 1

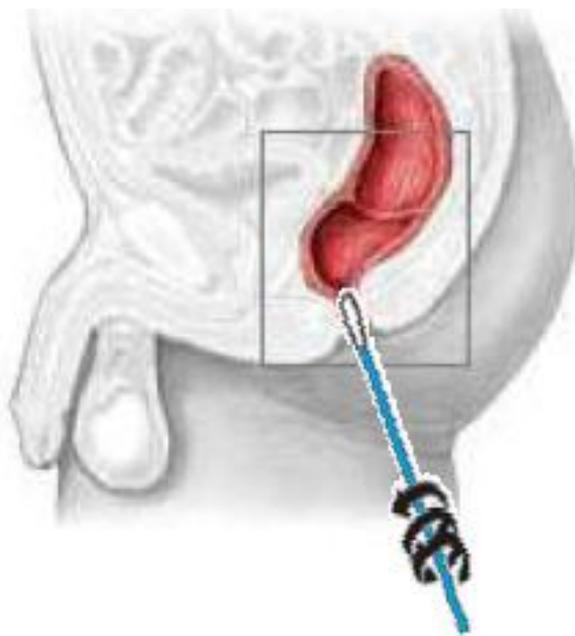
Open Unisex APTIMA Collection kit and remove tube. Tube may be placed in holding rack. Remove the swab with the **BLUE** shaft. **USE BLUE SHAFT SWAB ONLY**



Step 3

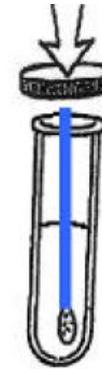
Remove the cap from the test tube. Place the swab in the test tube. Do not puncture the foil cap.

Break swab shaft at the score mark.



Step 2

Using the **BLUE** shaft swab, insert swab 1 inch into the anus and gently turn, making contact with rectal wall, for 5-10 seconds.



Step 4

Put cap back tightly on test tube to prevent any leaking. Try not to splash liquid out of the tube.

Step 5

Discard wrapper and wash your hands.

Self-Collection of Rectal Swabs for STD Screening

- Among ~900 MSM asked to self-collect samples for performance of BD ProbeTec (SDA) assays and APTIMA COMBO-2 (AC2)
 - Prevalence of CT = 7.3%
 - Prevalence of GC = 9.4%
- Sensitivities comparable to clinician-collected swabs
 - CT: 41% vs. 44% by SDA; 71% vs. 82% by AC2
 - GC: 77% vs. 68% by SDA; 84% vs. 78% by AC2
- Both assays far superior to culture for both organisms
- Acceptable to most MSM studied (82%)

NAAT Testing, Extragenital Sites

- Validation procedures can be done by labs to allow use of a non-FDA-cleared test or application
- Multiple commercial labs currently provide gonorrhea/chlamydia NAAT for rectal/pharyngeal specimens

NAAT Laboratory Ordering and Billing Codes

	Company-Specific Ordering Codes for Combined GC/CT Nucleic Acid Amplified Tests (NAATs)		Company-Specific Ordering Codes for CT test only
	LabCorp*	Quest*	LabCorp
Rectal	188672	16506	188706
Pharyngeal	188698	70051	188714

NAATs are offered at (or from) any location in the country with these two codes.

For information on specimen collection and transportation, clinicians should contact the local reference laboratory representative.

CPT Billing Codes	
CT detection by NAAT	87491
GC detection by NAAT	87591

CLIA verified labs* for non-genital NAATs: www.nnptc.org/PHLabs.html

Non-genital GC/CT screening: Potential recommendations

- Screen all those with symptoms
- Screen those patients reporting unprotected anal sex in last year
- Prioritize MSM with unprotected anal or oral sex in the last 3 months
- Swab appropriate anatomic locations
- Potential pilot may pay in short run

Management of CT

Management challenges of GC

Chlamydia trachomatis

Azithromycin 1 gm po as a single dose

or

Doxycycline 100 mg po bid x 7d

No change in 2010 Guidelines

Neisseria gonorrhoeae Antibiotic Resistance

❑ **Antibiotic resistance**

Undermines treatment success

Heightens risk of complications

Facilitates transmission

❑ ***Neisseria gonorrhoeae* (NG) has demonstrated ability to progressively develop antibiotic resistance**

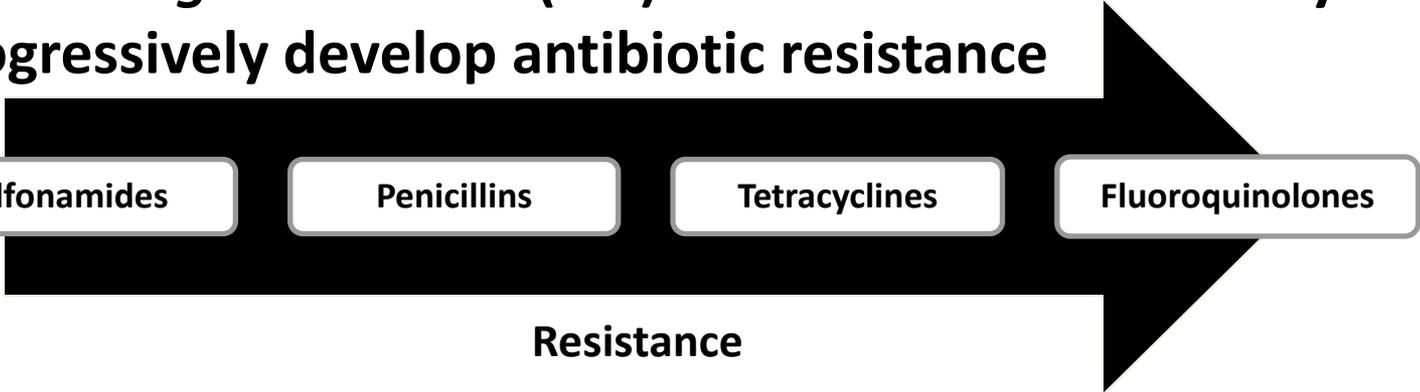
Sulfonamides

Penicillins

Tetracyclines

Fluoroquinolones

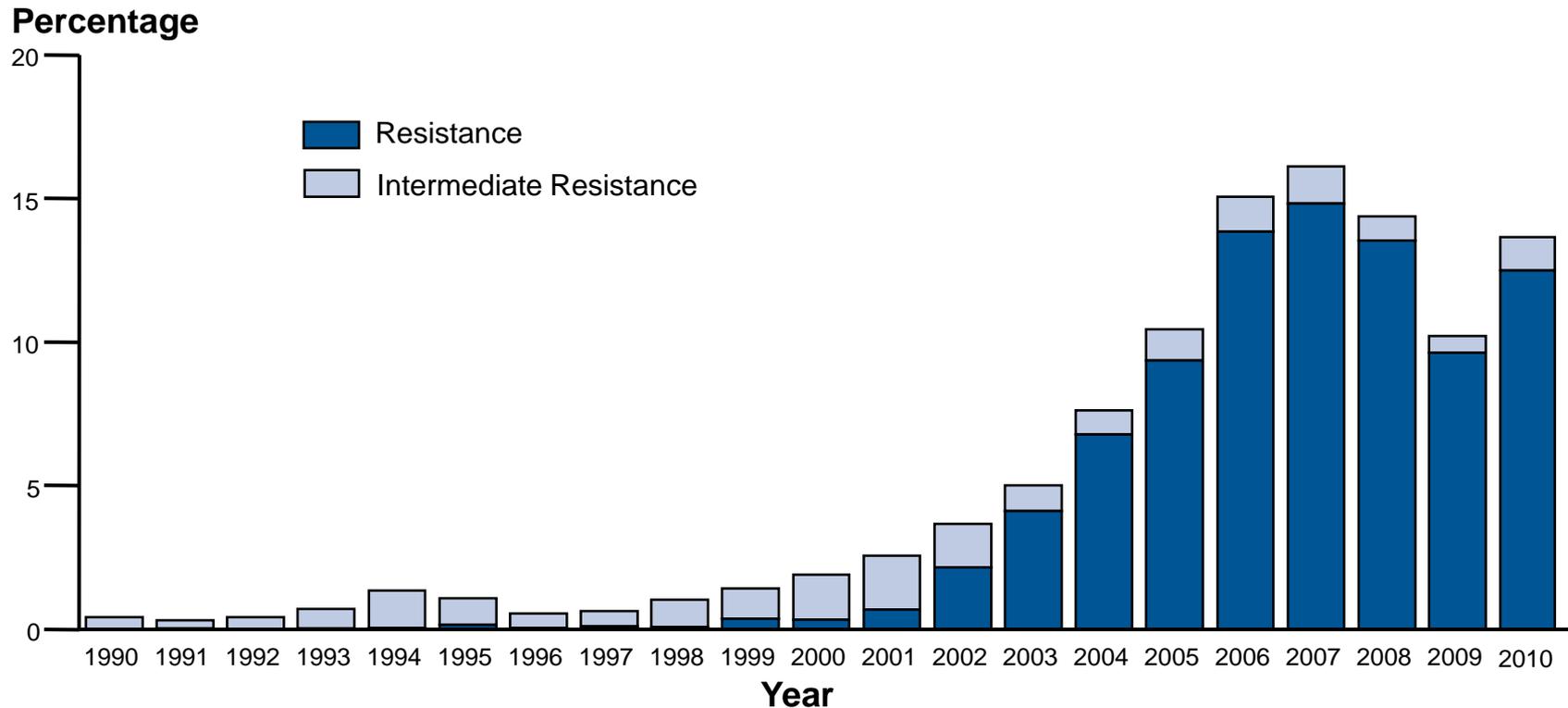
Resistance



Gonococcal Isolate Surveillance Project (GISP)—Location of Participating Sentinel Sites and Regional Laboratories, United States, 2010



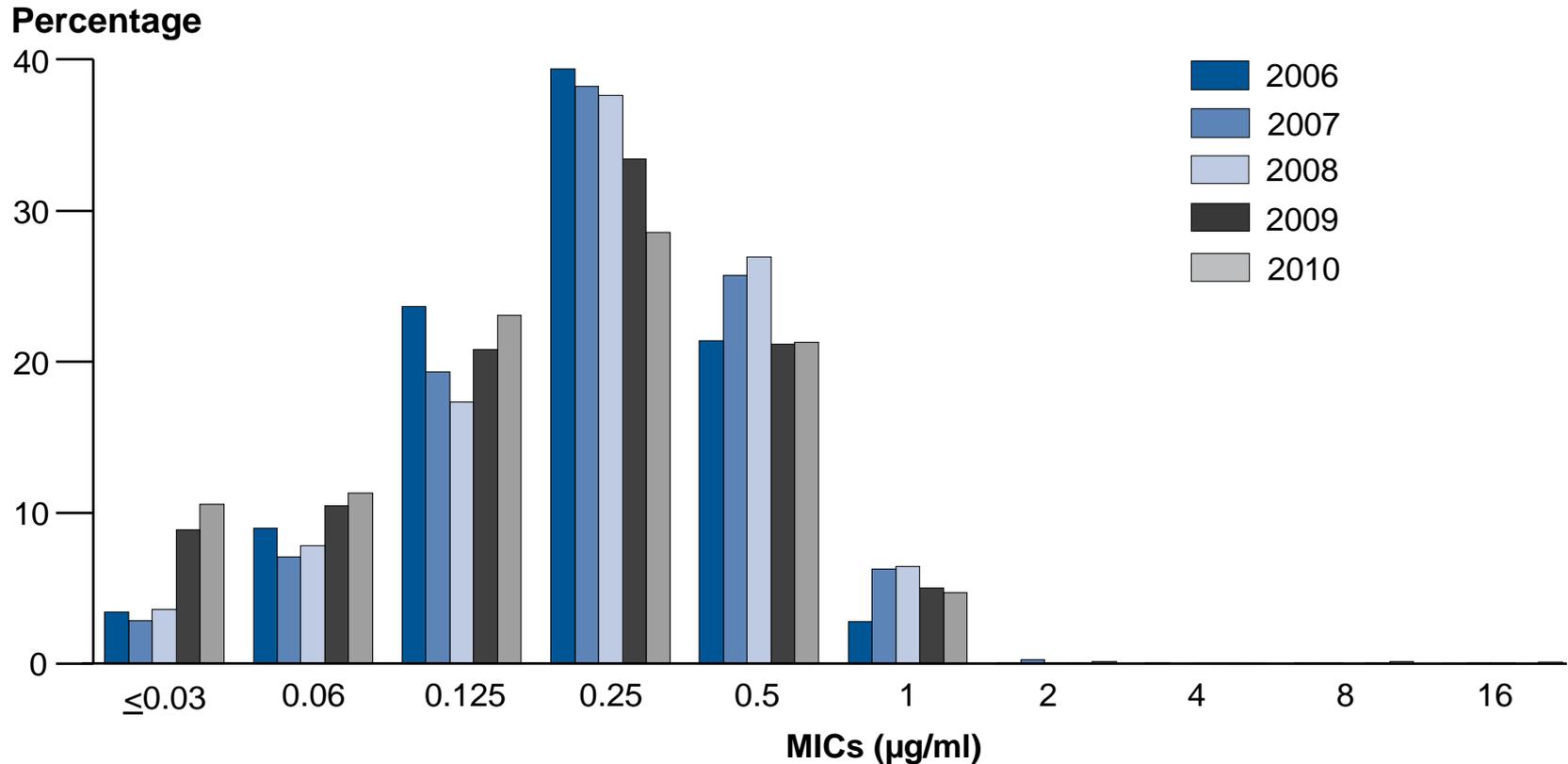
Gonococcal Isolate Surveillance Project (GISP)—Percentage of *Neisseria gonorrhoeae* Isolates with Resistance or Intermediate Resistance to Ciprofloxacin, 1990–2010



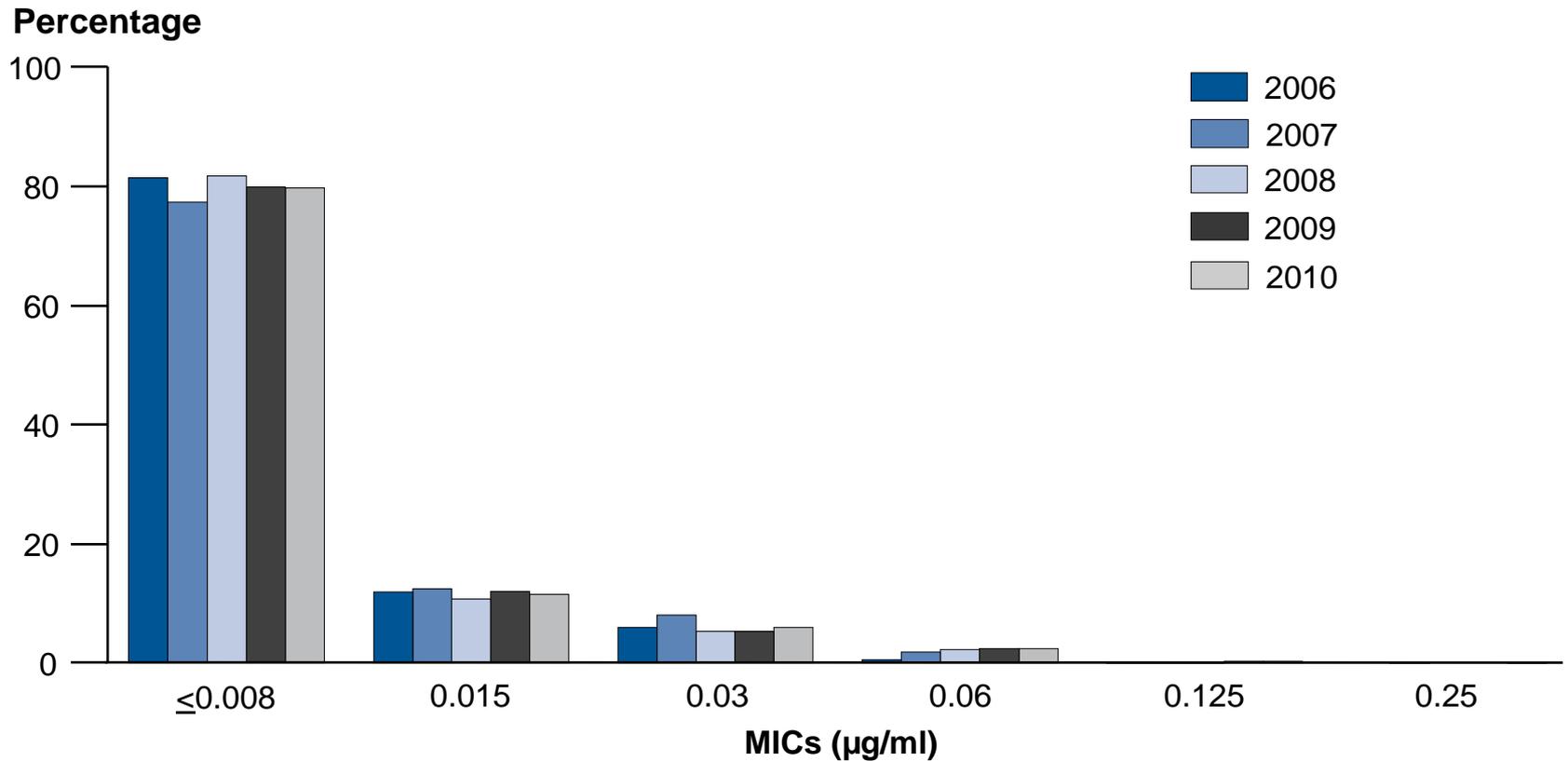
NOTE: Resistant isolates have ciprofloxacin minimum inhibitory concentrations (MICs) ≥ 1 $\mu\text{g}/\text{ml}$. Isolates with intermediate resistance have ciprofloxacin MICs of 0.125–0.5 $\mu\text{g}/\text{ml}$. Susceptibility to ciprofloxacin was first measured in GISP in 1990.



Gonococcal Isolate Surveillance Project (GISP)—Distribution of Minimum Inhibitory Concentrations (MICs) to Azithromycin Among GISP Isolates, 2006–2010

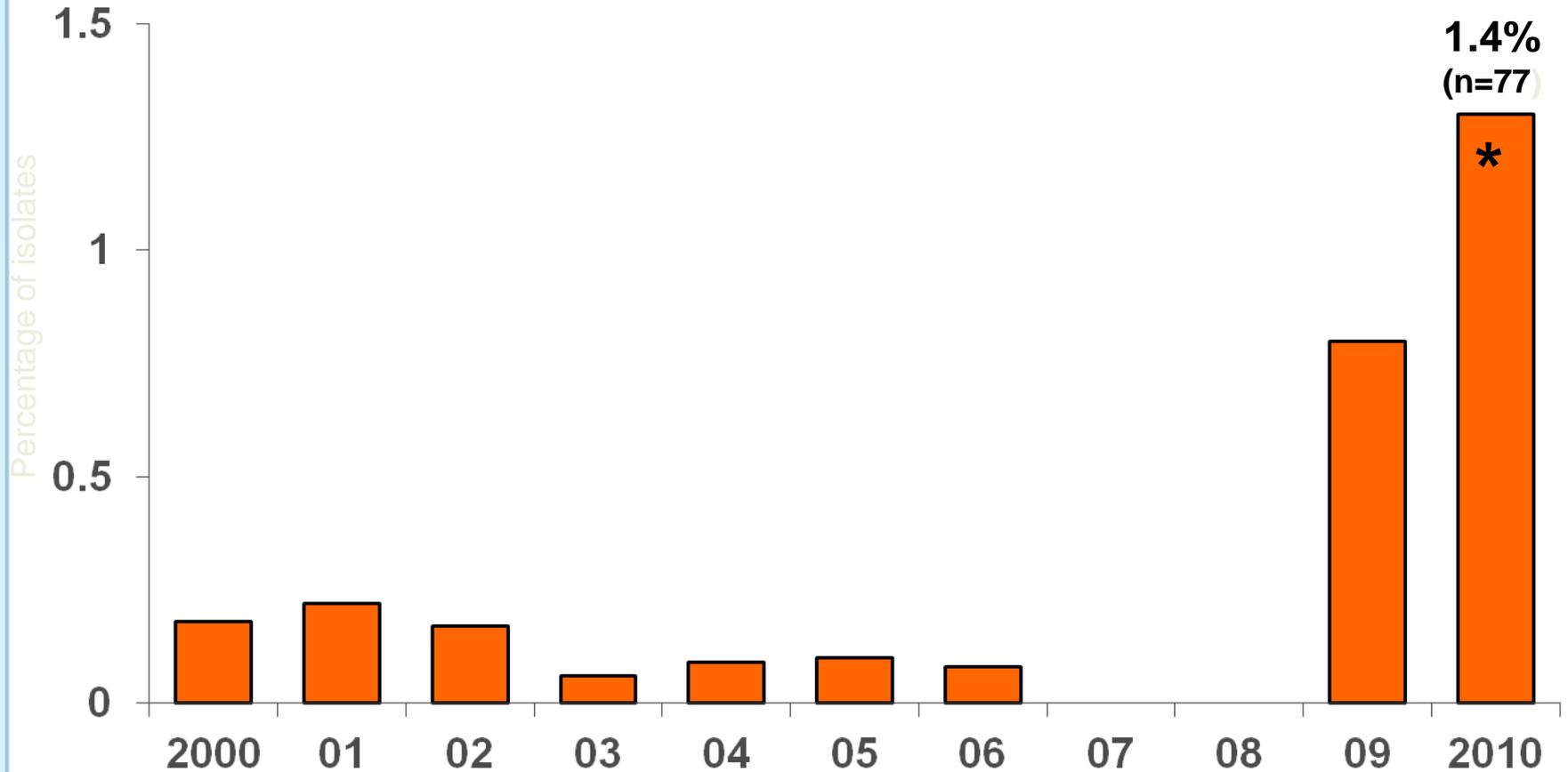


Gonococcal Isolate Surveillance Project (GISP)—Distribution of Minimum Inhibitory Concentrations (MICs) to Ceftriaxone Among GISP Isolates, 2006–2010



Proportion of isolates with Elevated MICs to Cefixime ($\geq 0.25 \mu\text{g/ml}$)

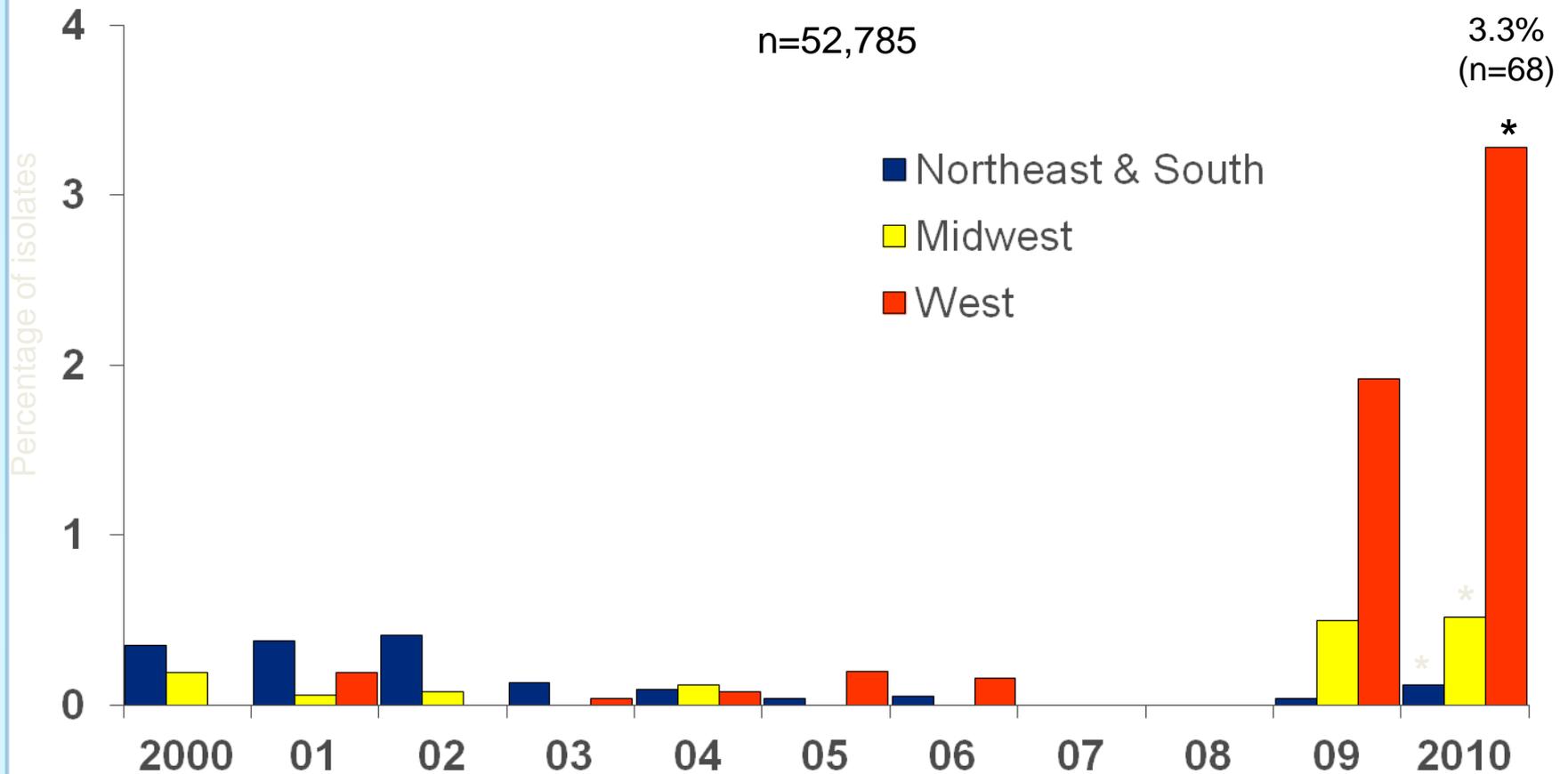
n=52,785



* $p_{\text{trend}} < 0.05$

Source: Gonococcal Isolate Surveillance Project (GISP)

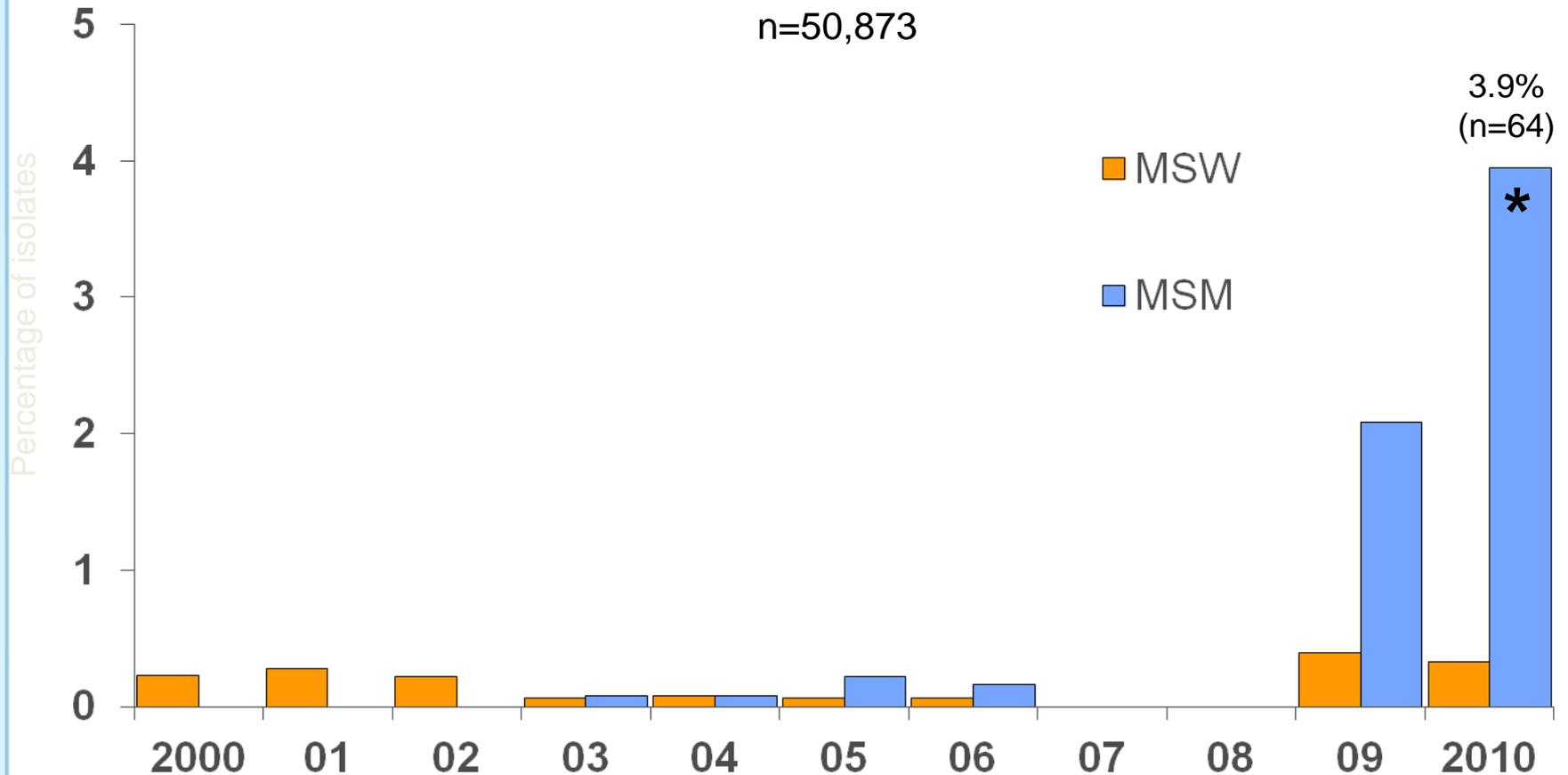
Proportion of isolates with Elevated MICs to Cefixime ($\geq 0.25 \mu\text{g/ml}$) by Region



* $p_{\text{trend}} < 0.05$

Source: Gonococcal Isolate Surveillance Project (GISP)

Proportion of isolates with Elevated MICs to Cefixime ($\geq 0.25 \mu\text{g/ml}$) by Sex of Sex Partner



* $p_{\text{trend}} < 0.05$

Note: MSM = Men who have sex with men; MSW = Men who exclusively have sex with women.

Source: Gonococcal Isolate Surveillance Project (GISP)

Treatment Recommendations for Uncomplicated Gonorrhea of Cervix, Urethra, Rectum

Recommended:

– **Ceftriaxone 250 mg IM x 1**

PLUS

– **Azithromycin 1 g PO x 1**

OR

– **Doxycycline 100 mg PO BID x 7 days**

Treatment Recommendations for Pharyngeal Infections

Recommended:

– **Ceftriaxone 250 mg IM x 1**

PLUS

– **Azithromycin 1 g PO x 1**

OR

– **Doxycycline 100 mg PO BID x 7 days**

Gonorrhea: Cephalosporin Allergy



- Limited options
- Spectinomycin is no longer available in the U.S.
- Azithromycin reasonable, but
 - Requires 2 grams; GI tolerance issues
 - Resistance to azithromycin increasing; treatment failures have occurred
- Fluoroquinolones: If only option, obtain culture before treatment to document sensitivity; if not possible, obtain test-of-cure (7 days if culture, 3 weeks if NAAT)

Expedited Partner Treatment for CT/GC

- **CDC: “PDPT can prevent reinfection of index case and has been associated with a higher likelihood of partner notification...” www.cdc.gov/std/ept for CDC EPT guidelines**
- **EPT for CT and GC safe and effective option for partner management for heterosexuals**
 - **Not recommended in MSM because of concern regarding co-morbidities (e.g., HIV and other STDs)**

Additional Resources for Clinicians



- **CDC 2010 STD Treatment Guidelines**

- www.cdc.gov/std/treatment/2010
- www.cdc.gov/std/2010-ebook.htm



- **The Growing Threat of Multidrug-Resistant Gonorrhea**

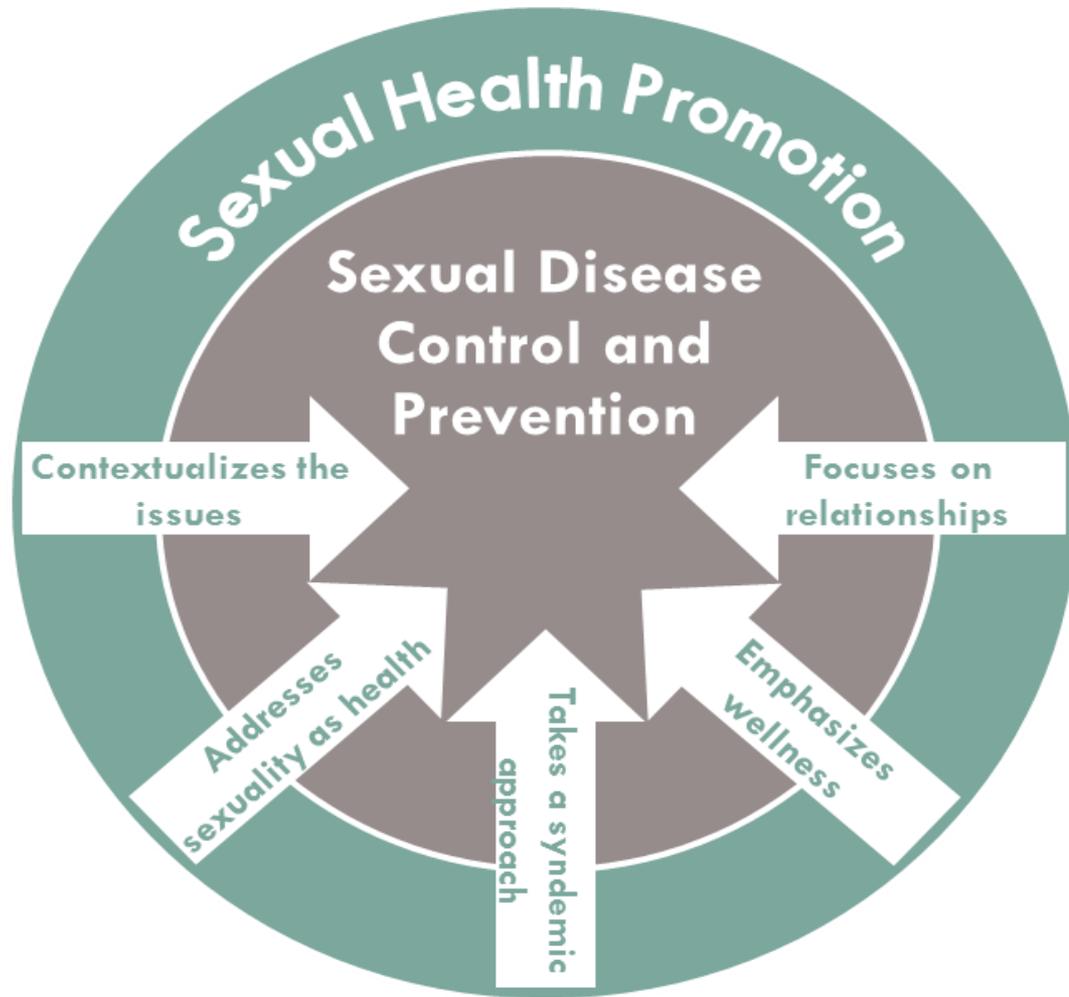
- www.youtube.com/watch?v=rE2th3A0Oxs
- www.cdc.gov/about/grand-rounds/archives/2012/download/15-May/GR_05-15-2012.wmv

Additional Resources for Clinicians

- **A Spotlight on LGBT Health: Transgender Health Issues**
 - a Healthy People 2020 webinar
 - www.healthypeople.gov/2020/connect/webinarsArchive.aspx
- **National Network of STD/HIV Prevention Training Centers**
 - www.nnptc.org
- **CDC Division of STD Prevention**
 - www.cdc.gov/std/training



Sexual Health Framework: Using Health Promotion to Complement Disease Control and Prevention



Positive sexual norms



Positive relationship norms



Conclusion

- Think about the sexual health of your patients
- Ask screening questions that will elicit risk for STD
- Repeat these discussions – no one's life is static
- Screen routinely for STDs as you are able
- Screen appropriate anatomic sites
- Dual treatment for GC, even in the absence of CT



John T. Brooks, MD

Leader, HIV Epidemiology
Research Team,
Division of HIV/AIDS Prevention,
Centers for Disease Control and
Prevention



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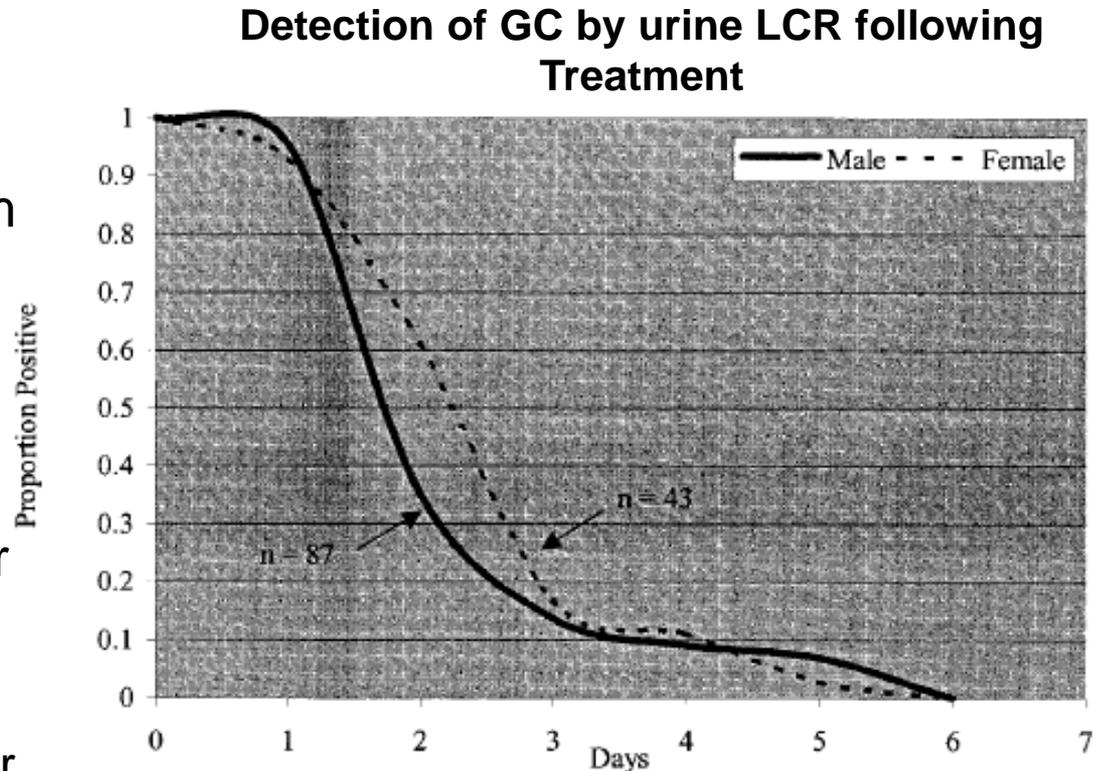


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GC Re-Testing after Treatment

- Don't test with NAAT within 1 week of treatment (detect residual DNA/ RNA from treated infection)
- Test of cure had not been routinely recommended in past
- Consider test of cure for
 - Persons treated with alternate regimens
 - Persons at high risk for failure (MSM on west Coast if cefixime or azithro alone used)

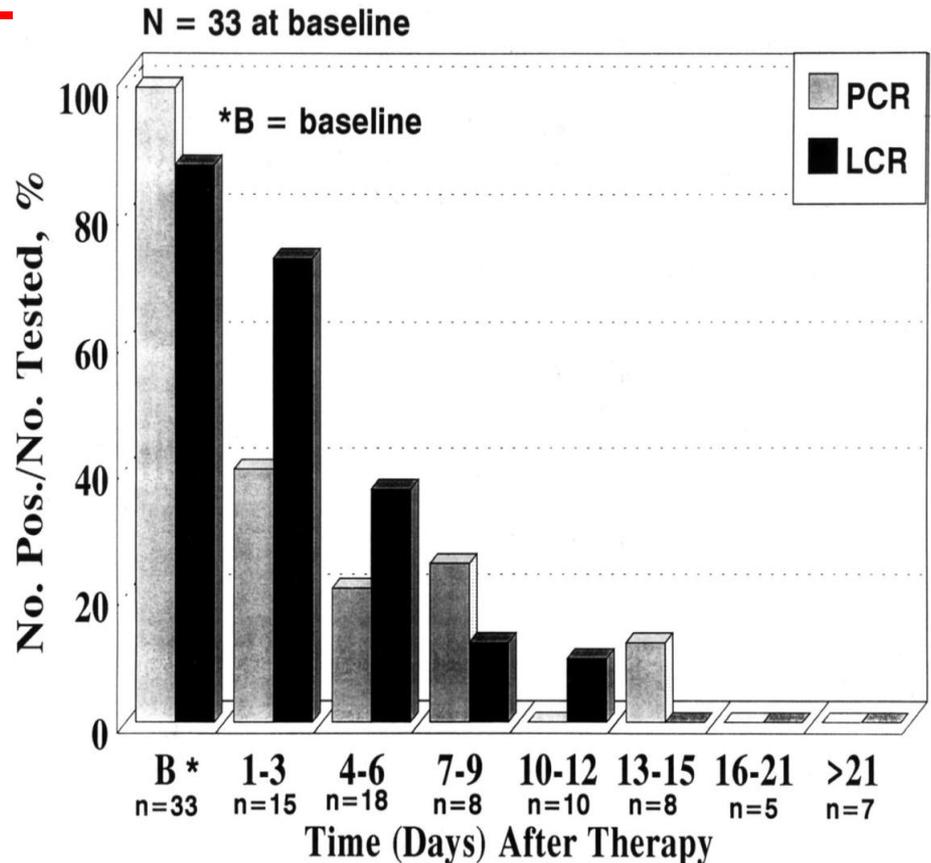


Gonorrhea – Treatment Issues

- ❑ Suspected cephalosporin treatment failures should be cultured, and if positive:
 - perform susceptibility testing,
 - consult a *specialist* for treatment guidance
 - Report case to CDC through state and local HD
 - HD should prioritize partner notification
- ❑ GC NAATs could be used 1 week after treatment if culture not available
- ❑ Lower threshold for TOC
- ❑ The CDC website or state HD can provide the most current information

CT Re-Testing after Treatment

- Test of cure NOT routinely recommend unless
 - Pregnant
 - Treated with non-standard therapy or non-adherent
 - Symptoms persist or recur after treatment
- Don't test with NAAT within 3-4 weeks of treatment (detect residual DNA/ RNA from treated infection)



Adapted from Gaydos et al. *J Inf Diseases* 1998; 177:417-24.