

Current CDC STI Treatment Guidelines: An Update

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Financial Relationships With Ineligible Companies (Formerly Described as Commercial Interests by the ACCME) Within the Last 2 Years:

Dr Bachmann has no relevant financial relationships with ineligible companies to disclose. (Updated 10/5/22)

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Learning Objectives

After attending this presentation, learners will be able to:

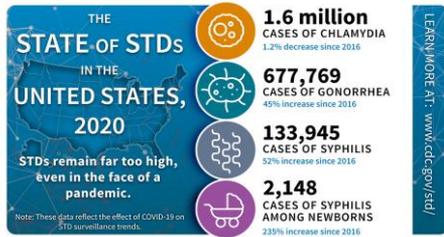
- Implement treatment for gonorrhea, chlamydia, syphilis, and *Mycoplasma genitalium* consistent with the 2021 CDC STI Treatment Guidelines
- Describe STI screening recommendations for individuals living with HIV
- Discuss results from the recent DoxyPEP study and implications for practice

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Outline

- STI Screening in HIV Care Settings
- Pathogen-specific reviews
 - Gonorrhea
 - Chlamydia
 - *Mycoplasma genitalium*
 - Herpes simplex virus
 - Syphilis
- Resources

2.4 million cases of chlamydia, gonorrhea, and syphilis were reported in the first year of the COVID-19 pandemic



STI Screening in HIV Care Settings

STI screening in HIV care settings

- Syphilis, gonorrhea and chlamydia
 - All sexually active persons
 - Entry to care
 - At least annually; more frequent (every 3-6 mo) if at increased risk
 - Based on site of exposure
- Trichomonas
 - Women
 - Entry to care
 - Annually

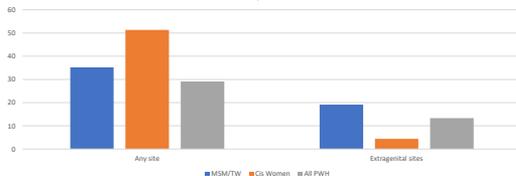
Workowski KA. STI Treatment Guidelines, 2021. MMWR. July 23, 2021.

STI Screening for Transgender Persons

- Base on current anatomy and gender of sex partners
 - Offer HIV screening to all transgender persons
 - TG persons who have sex with cisgender men, at similar risk for STIs as cis-MSM
- Transgender women post vaginoplasty
 - GC/CT (all sites of exposure: oral, anal, genital)
 - Urine vs neovaginal swab not specified, best specimen type based on tissue type used to construct neovagina
- Transgender men post metoidioplasty
 - If vagina still present and need to screen for STIs, cervical (or vaginal) swab should be used

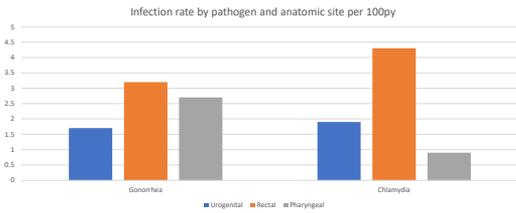
STI Testing Patterns at 4 U.S. Clinical Centers, 2014-2018

Proportion of population with any site and extra-genital site testing at least once in last year

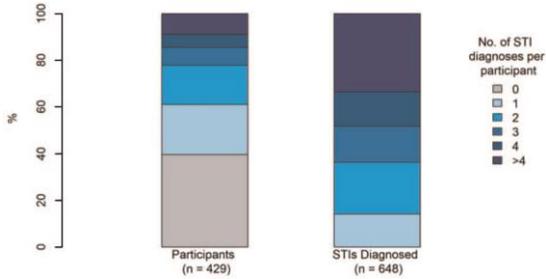


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STI Testing Patterns at 4 U.S. Clinical Centers, 2014-2018



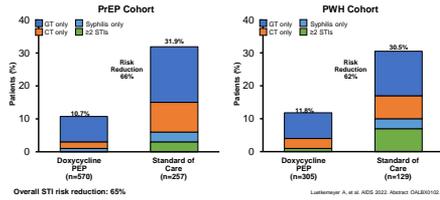
Distribution of participants and STIs by number of STIs per participant



Intervention: Open label doxycycline 200mg taken as PEP within 72 hours after condomless sexual contact
 Maximum of 200 mg every 24 hours



DoxyPEP Study: STI Incidence per Quarter



Doxy-PEP as an STI Prevention Strategy: Considerations for Individuals and Healthcare Providers of Gay or Bisexual Men or Transgender Women

As CDC and others work quickly to evaluate data to inform clinical guidance on the safe and effective use of doxycycline post-exposure prophylaxis (doxy-PEP) to prevent gonorrhea, chlamydia, and syphilis, we acknowledge there are individuals and clinicians who are already engaged in the off-label use of doxycycline as bacterial STI post-exposure prophylaxis or considering it. As such, we are providing the following considerations to inform those decisions.

- **Current efficacy data** only applies to gay and bisexual men and transgender women. Studies among heterosexual cis-gender women are ongoing.
- Doxycycline 200 mg administered within 24-72 hours of condomless sex was the regimen evaluated in this study. Other antibiotics should not be considered for PEP.
- In addition to informing patients about the potential STI prevention benefits of doxy-PEP, providers should also counsel patients about potential adverse side effects of doxycycline including photosensitivity, gastrointestinal symptoms, and more rarely esophageal ulceration.
- Providers should continue to screen, test, and treat for bacterial STIs in accordance with CDC's [STI Treatment Guidelines](#) and CDC's [PEP for the Prevention of HIV guidelines](#), even among people who may be using doxycycline as PEP or PREP.

www.cdc.gov/std/treatment-guidelines/clinical-primary.html#cautionsForDoxyPEP



Treatment Recommendations

"A gonorrhea begins and God alone knows when it will end"
 Philippe Ricord, French venereologist

Urgent Threats
 These germs are public health threats that require urgent and aggressive action.

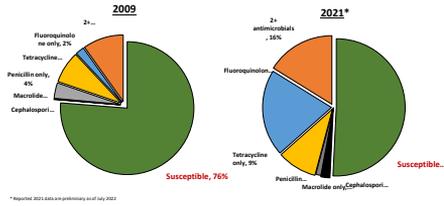
- DRUG-RESISTANT *AFROTYPHAX*
- *CANDIDA ALBIS*
- *CLOSTRIDIUM DIFFICILE*
- *CAMPOBACTERIUM SUBSP. INTENSIVACETICAE*
- *CRISIL-RESISTANT NEISSERIA GONORRHOEAE*

DRUG-RESISTANT NEISSERIA GONORRHOEAE

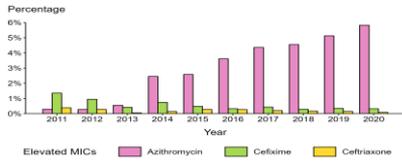
550,000
 1.1M
 \$130.4M

Neisseria gonorrhoeae (also gonorrhea), a sexually transmitted disease (STD) that can lead to the blindness, kidney problems and sterility, and can increase the risk of getting and giving HIV.

Prevalence of Resistant or Reduced Susceptibility of *N. gonorrhoeae* Isolates to Antimicrobials, GISP, 2009 and 2021*



***Neisseria gonorrhoeae* — Percentage of Isolates with Elevated Minimum Inhibitory Concentrations (MICs) to Azithromycin, Cefixime, and Ceftriaxone, Gonococcal Isolate Surveillance Project (GISP), 2011–2020**



NOTE: Elevated MICs = Azithromycin: ≥ 2.0 $\mu\text{g}/\text{mL}$; Cefixime: ≥ 0.25 $\mu\text{g}/\text{mL}$; Ceftriaxone: ≥ 0.125 $\mu\text{g}/\text{mL}$

Uncomplicated Gonococcal Infections — Treatment

Recommended

- Ceftriaxone 500mg IM once in a single dose*
- Ceftriaxone 1g IM once if $\geq 150\text{kg}$

Alternative Regimens (urethral, cervix, rectum)

- Gentamicin 240 mg intramuscularly in a single dose
- plus
- Azithromycin 2 g orally in a single dose
- OR**
- Cefixime 800 mg orally in a single dose.*

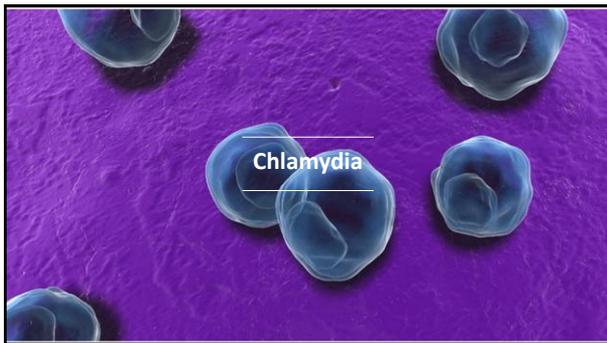
*If chlamydial infection has not been excluded, treat for chlamydia with Doxycycline 100 mg orally 2 times/day for 7 days.

**Uncomplicated Gonococcal Infections of the Pharynx
Recommended Regimen for Persons Weighing < 150 kg**

Ceftriaxone 500* mg IM in a single dose

*For persons weighing ≥ 150 kg, 1 gm ceftriaxone should be administered.
If chlamydia co-infection is identified when pharyngeal gonorrhea testing is performed, providers should treat for chlamydia with doxycycline 100 mg orally 2 times/day for 7 days.

Universal TOC 7-14 days post treatment for oral GC now recommended



Chlamydial Infection Among Adolescents and Adults

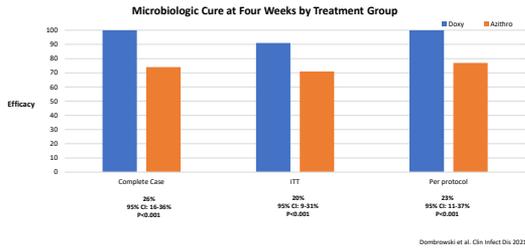
Recommended

- Doxycycline 100mg orally twice a day for 7 days

Alternative Regimens

- Azithromycin 1g orally in a single dose
- OR
- Levofloxacin 500mg orally once daily for 7 days

Randomized Controlled Trial of Doxycycline vs Azithromycin for Rectal CT Infection in MSM



Rectal Chlamydia in Women

- Rectal infection not uncommon in women with CT
 - Rectum positive in 68.5% - 89%
- History of anal sex not predictive of infection
 - Auto-inoculation of the rectal site from an infected genital site
- Can the rectal site serve as a reservoir for persistent chlamydial infection and a source of auto-inoculation from the GI to the GU tract?

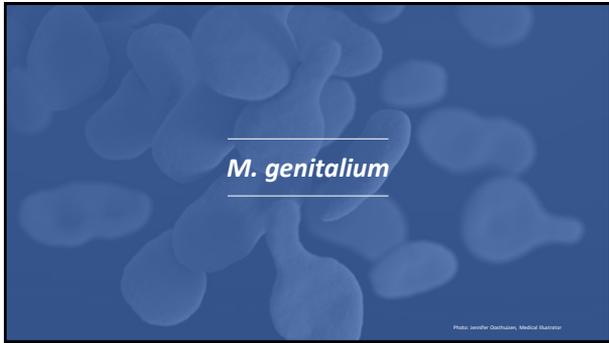
Van Liere GAFS STI 2014;
 Workowski KA JAMA 1993;
 Ding A Int J STD AIDS 2014;
 van Liere GA BMC Infect Dis 2014;
 Gratrix J CID 2014

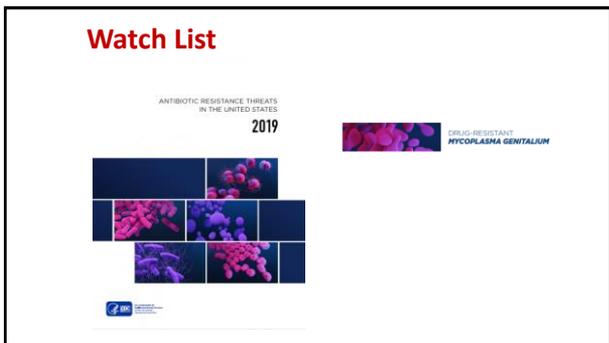
Doxycycline Adherence

- Historic data demonstrating disconnect between doxycycline adherence and treatment failure
 - Julie Schachter editorial (1999)
 - What is the Minimally Effective Treatment for *Chlamydia trachomatis* Infection?: The Compliance Paradox
 - No minimum dose of doxycycline needed to cure chlamydia not defined
 - Single dose minocycline highly effective (Taylor-Robinson D. 1986)
 - Study using MEMS caps – 16% of 221 participants took doxycycline as expected (100mg BID x 7 days); 6% with +CT culture at enrollment were PCR+ at follow-up

Gender	Follow-up (days)	Indication for Therapy	Self-Reported Medication Compliance (From All Meds) ^a	Missed Dose (Days)	2 or More (Days) Intermittent
M	36	Positive chlamydia	Yes—11 days	18	Y
F	27	Positive chlamydia	Yes—7 days	10	Y
F	11	Positive chlamydia	Yes—8 days	0	Y
M	10	Uninfected	Yes—7 days	9	Y
F	1	Positive chlamydia	Yes—7 days	Unknown	Unknown

^a Patients did not return caps at follow-up (PCR = polymerase chain reaction; Y = yes; U = unknown; M = male).





***Mycoplasma genitalium* screening and diagnostic testing**

- FDA cleared test for urine, urethral, penile meatal, endocervical and vaginal swabs
- Population-based screening for *M. genitalium* is not recommended
- When to test
 - Persistent urethritis that fails initial treatment
 - Consider for PID or persistent cervicitis
- Culture takes up to 6 months, NAAT testing recommended

NEW *Mycoplasma genitalium* Treatment Recommendations

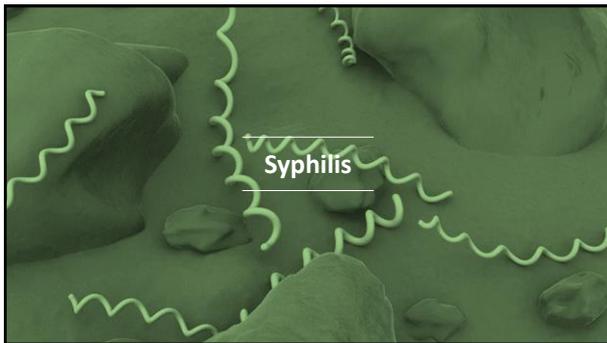
- Sequential treatment for suspect/documentated *M. genitalium*

Start with Doxycycline to reduce bacterial load



If local macrolide resistance is low or known macrolide sensitive



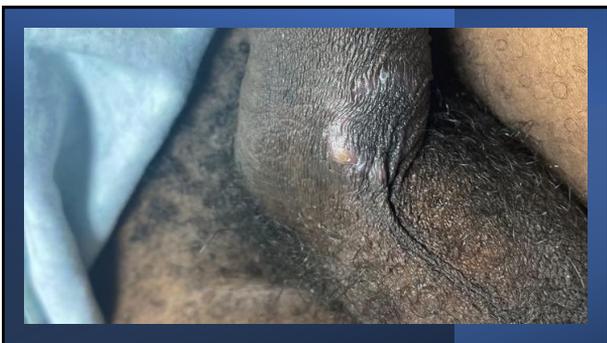


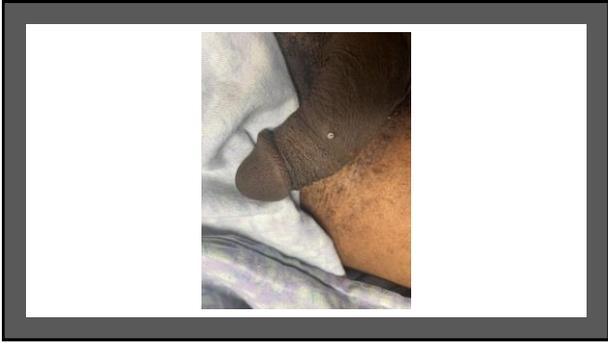
Case

- 45yo male with HIV (BIC/TAF/FTC; intermittent adherence; last CD4 343 and VL 63)
- History of HBV (+HbsAg), HSV, perianal warts s/p resection; syphilis
- 8/16 – Presents to ED for perianal pain, itching, rectal discharge, rectal bleeding and new perianal lesions (since end of July) – discharged with imiquimod and ibuprofen
- 8/18 – Presents again to ED for “throat closing up”; lesions on tongue, lips, hard palate, pain/difficulty swallowing
- Social history – oral, penile, rectal exposure through sex; multiple partners; +meth use











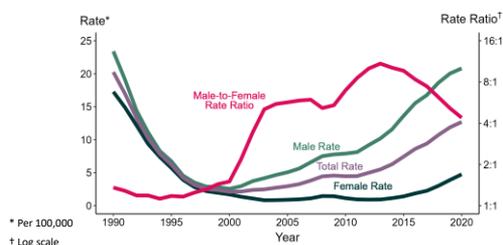


Patient Results

- RPR 1:256
- HSV PCR rectal negative
- HSV PCR oral negative
- Oral, rectal, skin lesions IMPX+
- GC/CT rectal negative
- GC/CT oral negative
- HbsAg+

- Empiric treatment with:
- Ceftriaxone 500mg IM plus doxycycline 100mg orally BID
 - Bicillin 2.4 MU
 - Tecovirimat 600mg orally twice a day x 14 days

Primary and Secondary Syphilis — Rates of Reported Cases by Sex and Male-to-Female Rate Ratios, United States, 1990–2020



Primary Chancere



Secondary Syphilis



Primary and Secondary Syphilis - Overlap



Syphilis Treatment - 2021 CDC STI Treatment Guidelines

Primary, Secondary & Early Latent:

- Benzathine penicillin G 2.4 million units IM x 1 dose

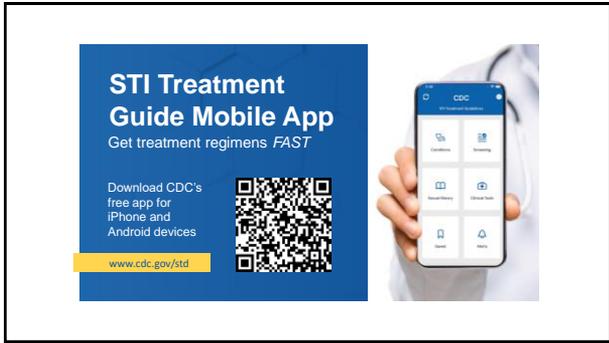
Late Latent and Unknown Duration:

- Benzathine penicillin G 7.2 million units total, given as 3 IM doses of 2.4 million units each at 1 week intervals

Neurosyphilis:

- Aqueous crystalline penicillin G 18-24 million units IV daily administered as 3-4 million IV q4hr for 10-14 days

Pregnant women must receive benzathine penicillin!

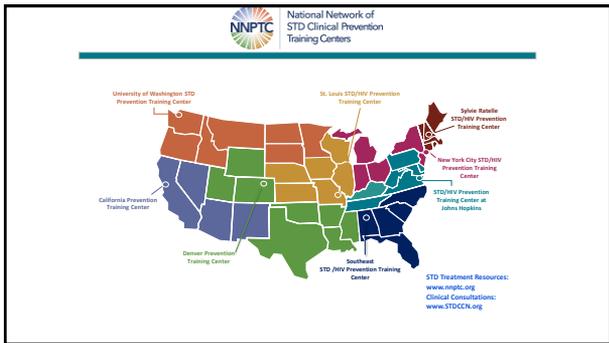


STI Treatment Guide Mobile App
Get treatment regimens *FAST*

Download CDC's free app for iPhone and Android devices

www.cdc.gov/std

The image shows a blue promotional card for the STI Treatment Guide Mobile App. On the left, it says 'STI Treatment Guide Mobile App' and 'Get treatment regimens FAST'. Below that, it says 'Download CDC's free app for iPhone and Android devices' and provides the website 'www.cdc.gov/std'. A QR code is on the right. To the right of the card, a person in a white lab coat is holding a smartphone displaying the app's interface, which includes icons for 'Guidance', 'Reporting', 'New Prescriptions', 'Upload Data', 'Send', and 'More'.

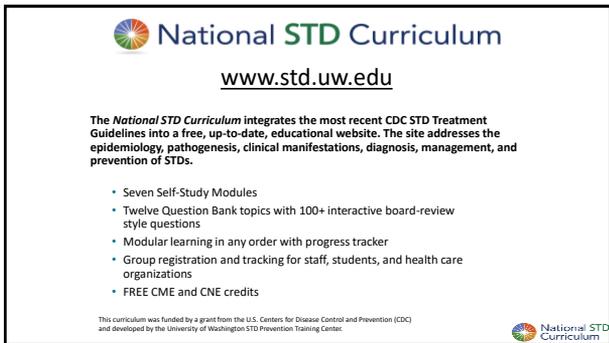


NNPTC National Network of STD Clinical Prevention Training Centers

University of Washington STD Prevention Training Center
St. Louis STD/NW Prevention Training Center
Spokane Seattle STD/NW Prevention Training Center
New York City STD/NW Prevention Training Center
STD/NW Prevention Training Center at Johns Hopkins
Southwest STD/NW Prevention Training Center
Denver Prevention Training Center
California Prevention Training Center

STD Treatment Resources:
www.nnptc.org
Clinical Consultations:
www.STDOCCN.org

The image is a map of the United States with various states highlighted in different colors. Lines connect these highlighted areas to labels for different training centers: University of Washington (orange), St. Louis (purple), Spokane Seattle (red), New York City (green), STD/NW at Johns Hopkins (blue), Southwest (teal), Denver (light green), and California (dark blue). The NNPTC logo is at the top left, and website information is at the bottom right.



National STD Curriculum
www.std.uw.edu

The *National STD Curriculum* integrates the most recent CDC STD Treatment Guidelines into a free, up-to-date, educational website. The site addresses the epidemiology, pathogenesis, clinical manifestations, diagnosis, management, and prevention of STDs.

- Seven Self-Study Modules
- Twelve Question Bank topics with 100+ interactive board-review style questions
- Modular learning in any order with progress tracker
- Group registration and tracking for staff, students, and health care organizations
- FREE CME and CNE credits

This curriculum was funded by a grant from the U.S. Centers for Disease Control and Prevention (CDC) and developed by the University of Washington STD Prevention Training Center.

National STD Curriculum

The image features the National STD Curriculum logo at the top left, followed by the title and website. A paragraph describes the curriculum's content. A bulleted list of features is provided. At the bottom, there is a small text block about funding and development, and the National STD Curriculum logo again.

Acknowledgements

Guideline Coauthors

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Q and A Session