NATIONAL LGBTQIA+ HEALTH EDUCATION CENTER

A PROGRAM OF THE FENWAY INSTITUTE

STIs and PrEP
A case-based review of CDC's 2021 STI Treatment Guidelines

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The National LGBTQIA+ Health Education Center, The Fenway Institute

Boston, MA

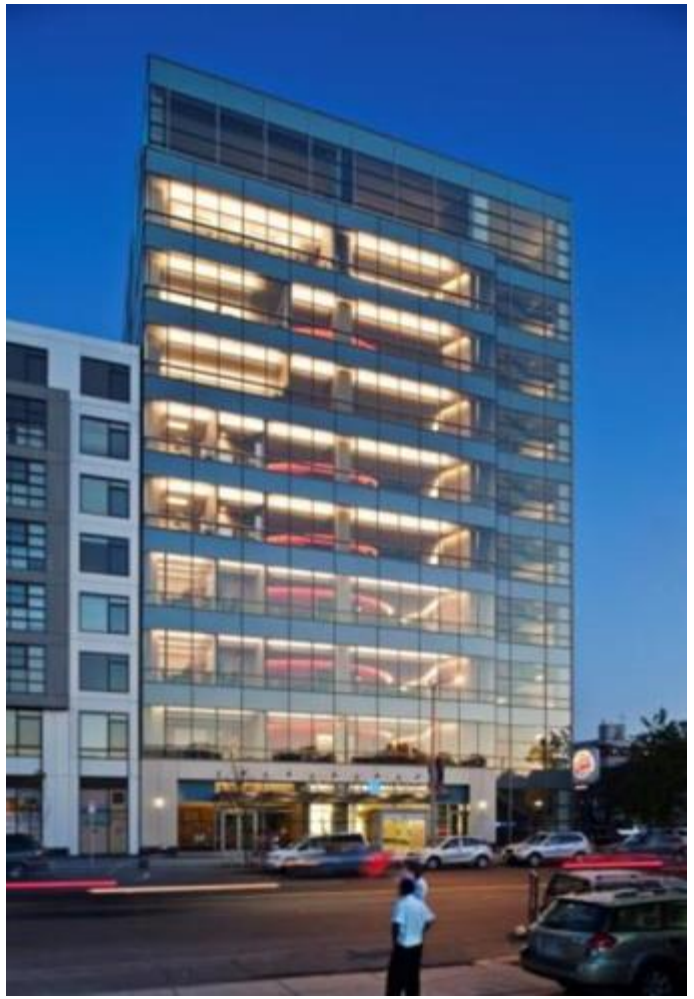
Our Roots

Fenway Health

- Independent 501(c)(3) FQHC
- Founded 1971
- Mission: To enhance the wellbeing of the LGBTQIA+ community as well as people in our neighborhoods and beyond through access to the highest quality health care, education, research, and advocacy
- Integrated primary care model, including HIV and transgender health services

The Fenway Institute

- Research, Education, Policy



LGBTQIA+ Education and Training

The National LGBTQIA+ Health Education Center offers educational programs, resources, and consultation to health care organizations with the goal of providing affirmative, high quality, cost-effective health care for lesbian, gay, bisexual, transgender, queer, intersex, asexual, and all sexual and gender minority (LGBTQIA+) people.

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Other Health Professionals	Confirm equivalency of credits with relevant licensing body.

Learning objectives

1. Describe the preferred treatments for common STIs, based on CDC's 2021 STI Treatment Guidelines.

2. Summarize the rationales for the updates in STI management.

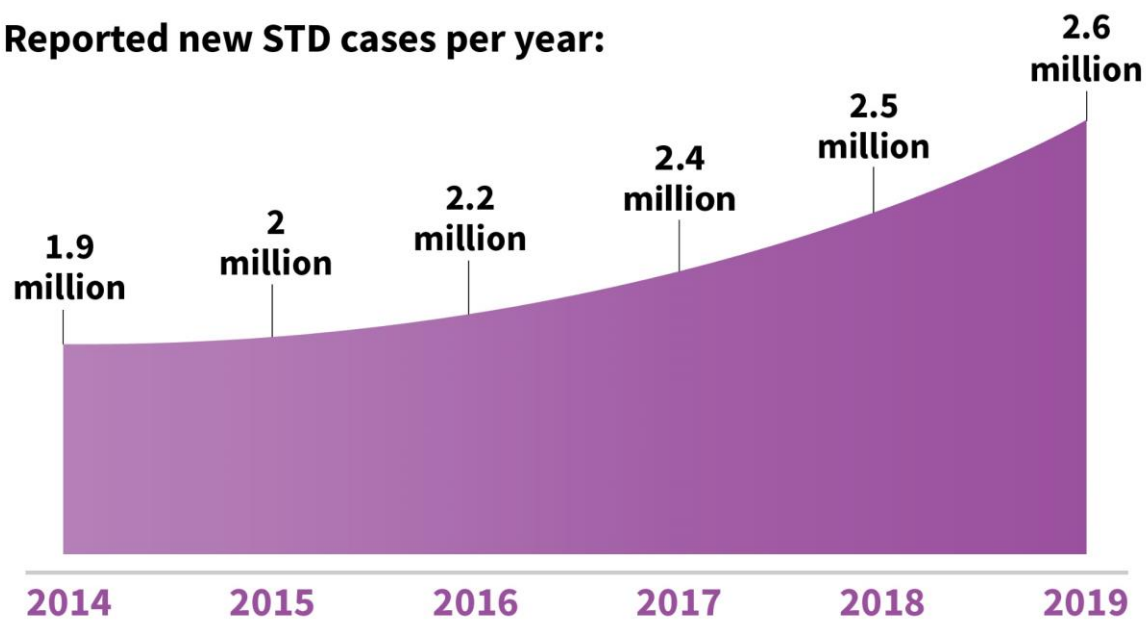
3. Discuss how to implement newly recommended STI management in PrEP programs.

Definitions

- **STI:** Sexually transmitted infection
- **NAAT:** Nucleic acid amplification test
- **Tenofovir disoproxil fumarate/emtricitabine:** TDF/FTC (Truvada)
- **Tenofovir alafenamide/emtricitabine:** TAF/FTC (Descovy)
- **CSF:** Cerebrospinal fluid
- **VDRL:** Venereal Disease Research Laboratory (a non-treponemal test)
- **MSM:** Men who have sex with men

6th consecutive year of RECORD-BREAKING STD cases

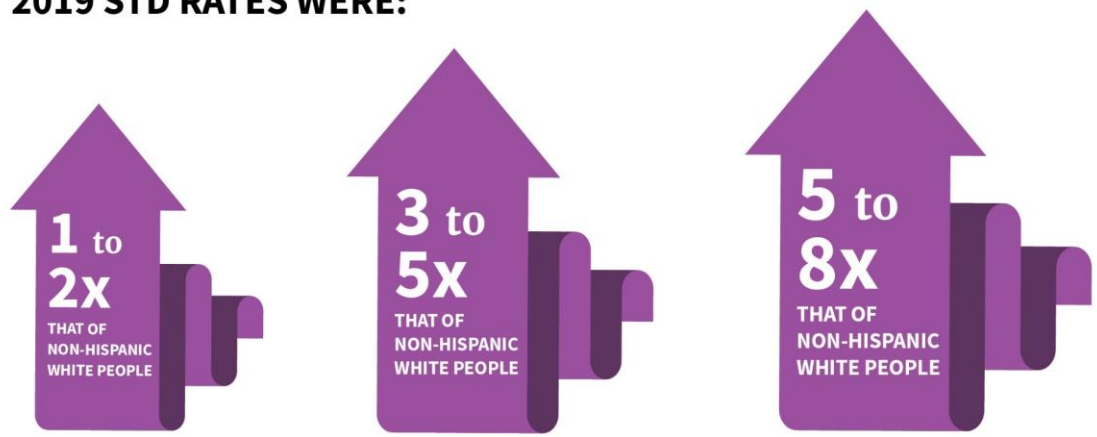
Reported new STD cases per year:



For more information visit ***www.cdc.gov/nchhstp/newsroom***

Disparities in STDs persist among racial & ethnic minority groups

While STDs are increasing across many groups, 2019 STD RATES WERE:



for Hispanic or Latino people

for American Indian or Alaska Native people and Native Hawaiian or Other Pacific Islander people

for African American or Black people

For more information visit ***www.cdc.gov/nchhstp/newsroom***

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STIs are common among people using PrEP.

STI diagnoses over 12 months among 657 people initiating PrEP

Sexually Transmitted Infection Diagnosis	Proportion of People
Any	50%
Rectal STI	33%
Chlamydia	33%
Gonorrhea	28%
Syphilis	5.5%
HIV	0%

Volk JE, Clin Infect Dis, 2015

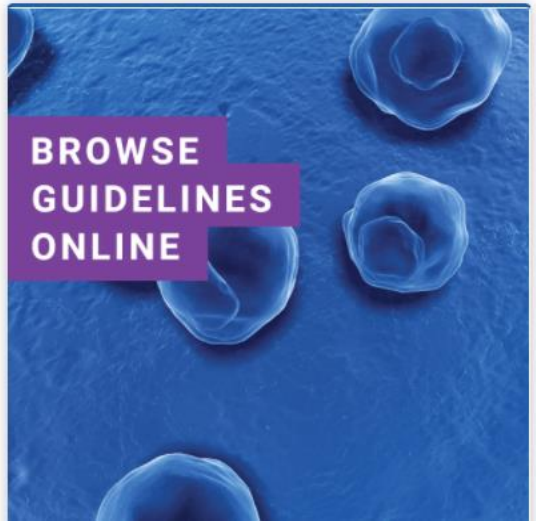
STI Treatment Guidelines

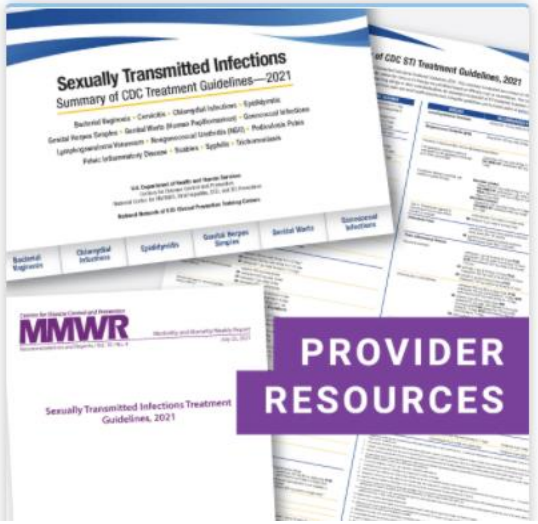
2021 RECOMMENDATIONS NOW AVAILABLE

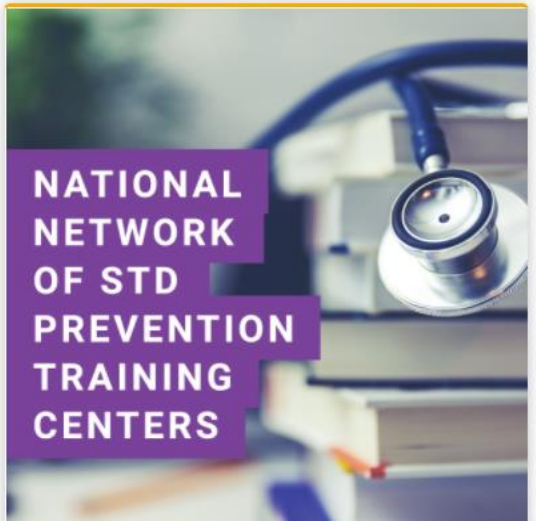
STI Treatment Guidelines Update

CDC's Sexually Transmitted Infections (STI) Treatment Guidelines, 2021 provides current evidence-based prevention, diagnostic and treatment recommendations that replace the 2015 guidance. The recommendations are intended to be a source for clinical guidance. Healthcare providers should always assess patients based on their clinical circumstances and local burden.

2021 Mobile App in Development
Learn how to use the interim, mobile-friendly solution.







https://www.cdc.gov/std/treatment-guidelines/default.htm

Case 1

- A 25-year-old transgender woman taking TDF/FTC for PrEP presents for a routine follow-up visit.
- She has no symptoms and has not missed any doses of PrEP.
- Since her last PrEP visit 3 months ago, she has had oral, vaginal, and receptive anal sex without condoms with one cisgender man.
- Laboratory results include:
  - **HIV antibody/antigen:** Negative
  - **Treponemal antibody:** Negative
  - **Gonorrhea/Chlamydia NAAT:** Negative in the throat and neovagina, **positive** for Chlamydia in the rectum

What is the best treatment for her infection?

A. Azithromycin 1 gram by mouth once
B. Doxycycline 100 mg twice daily by mouth for 7 days
C. Levofloxacin 750 mg by mouth daily for 7 days
D. Ceftriaxone 500 mg by intramuscular injection once and azithromycin 1 gram by mouth once

What is the best treatment for her infection?

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C. Levofloxacin 750 mg by mouth daily for 7 days

D. Ceftriaxone 500 mg by intramuscular injection once and azithromycin 1 gram by mouth once

Why is doxycycline preferred?

- It's more effective.
- **Example:**
  - Randomized trial of doxycycline versus azithromycin for rectal chlamydia
  - Microbiologic cure 100% with doxycycline versus 74% with azithromycin
- > 33% of cisgender women with urogenital chlamydia have concomitant rectal chlamydia, regardless of any history of anal sex.
- What if my patient is pregnant or unlikely to adhere to a week of doxycycline? **Use azithromycin.**

Dombrowski JC, Clin Infect Dis, 2021; Rank RG, Clin Infect Dis, 2015

Case 2

- A 23-year-old cisgender man taking TAF/FTC for PrEP presents for an urgent care visit due to rash and fever.
- The rash involves his back, chest, palms, and soles; it began two days ago.
- He also reports blurry vision in the left eye for one day.
- He has no headache or other symptoms.

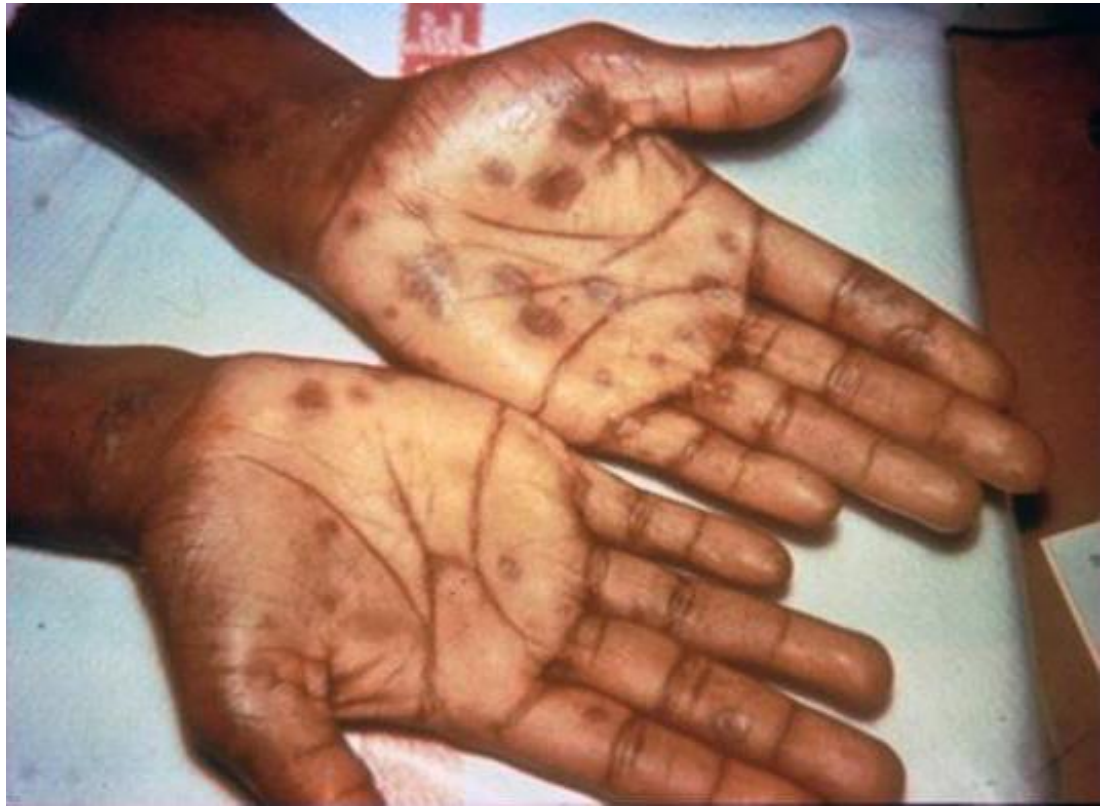

Image from https://www.cdc.gov/std/syphilis/images/palmar-1.jpg

Case 2, continued

- Urgent ophthalmologic examination shows panuveitis.
- A detailed neurological examination is otherwise normal.
- Laboratory testing shows:
  - **Treponemal antibody: Positive**
  - **Rapid plasma regain (RPR): Reactive, titer 1:256**
  - **HIV antibody/antigen: Negative**
  - **Gonorrhea/Chlamydia NAAT: Negative** from throat, urine, and rectum

What is the next best step in management?

A. Perform a lumbar puncture to assess for evidence of concurrent neurosyphilis.
B. Administer long-acting benzathine penicillin by intramuscular injection once.
C. Request administration of intravitreal penicillin by ophthalmology.
D. Initiate a 14-day course of intravenous aqueous crystalline penicillin G

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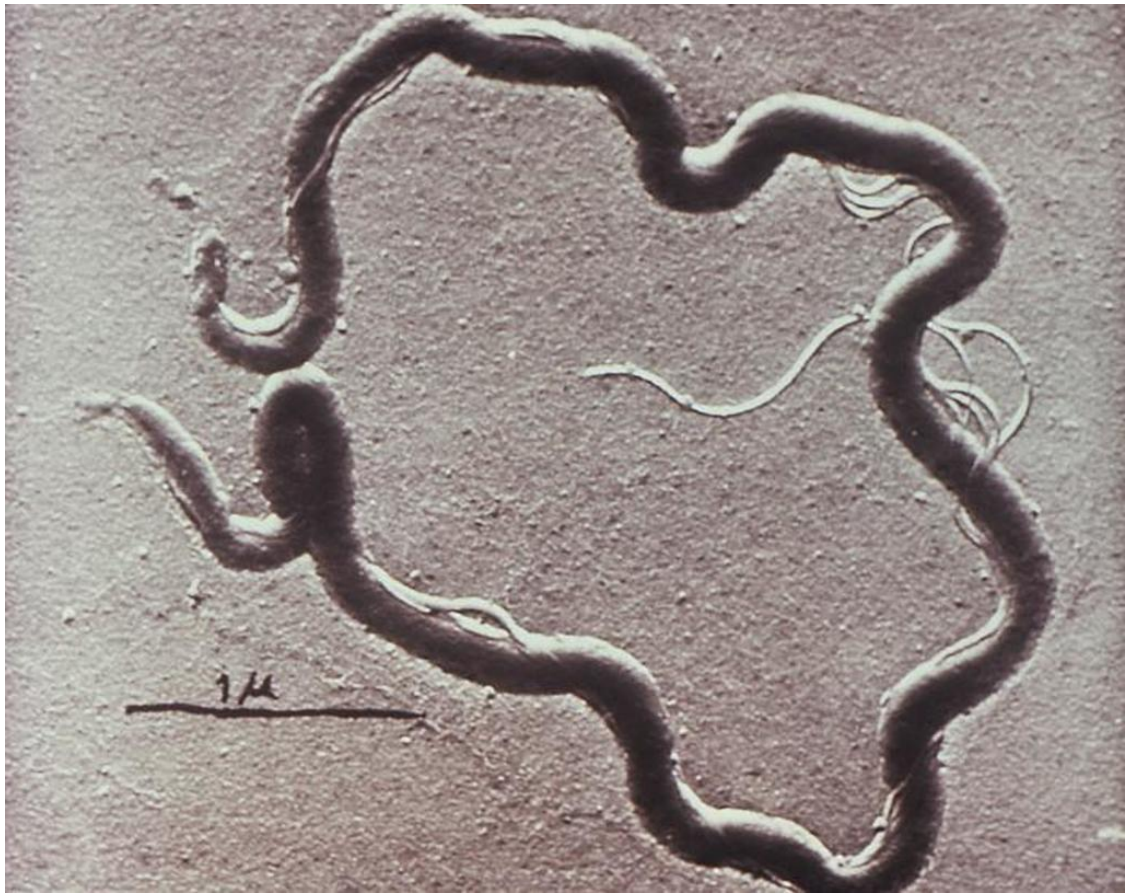
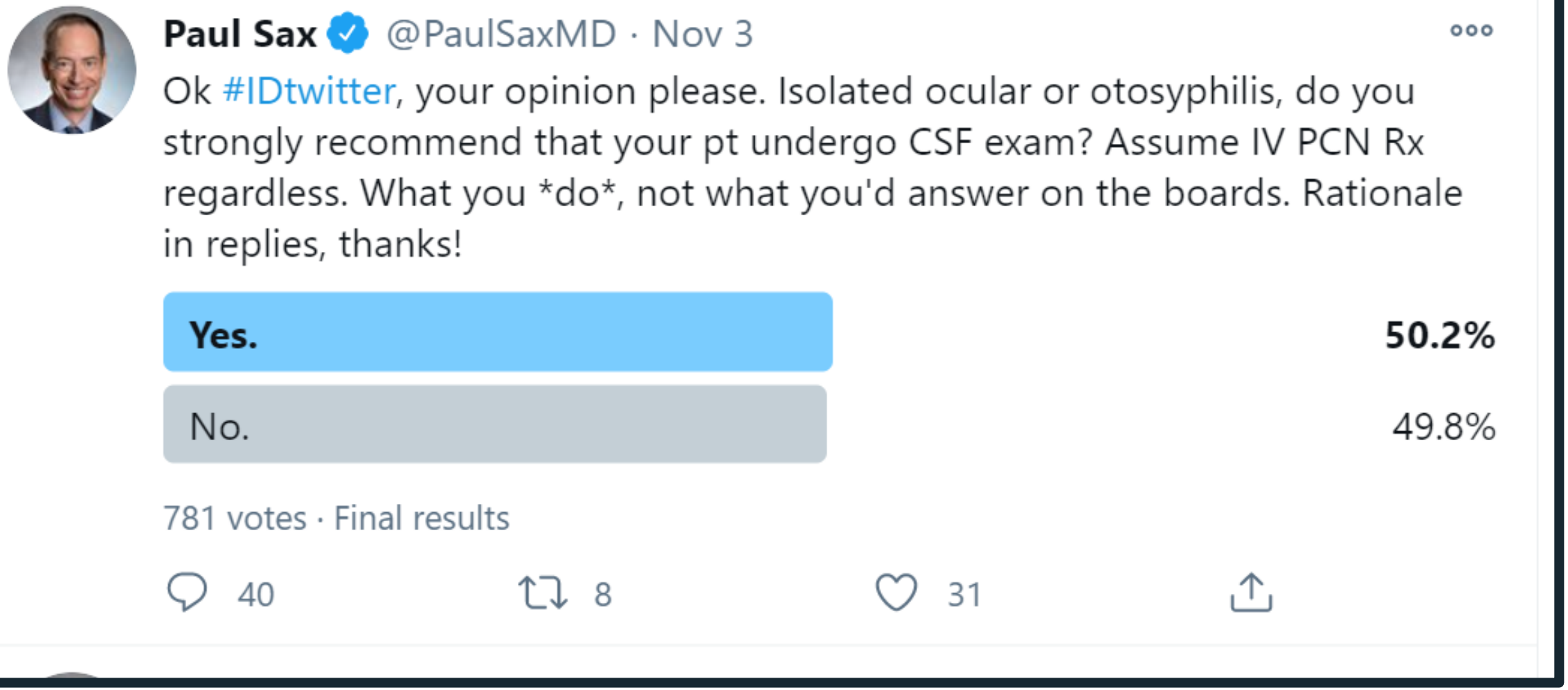
Ocular syphilis

- Panuveitis and posterior uveitis are most common
- Can occur during any stage of syphilis
- Considered and treated as a form of neurosyphilis
  - CSF abnormalities in up to 60%
- Diagnosis usually made by clinical, epidemiological, and serological findings, not direct confirmation
- Ask about visual complaints in any patient with a new diagnosis of syphilis



Clinical advisory: Ocular syphilis in the United States. CDC. 2016. Available at: https://www.cdc.gov/std/syphilis/clinicaladvisoryos2015.htm.
Image from radiopaedia.org


Paul Sax @PaulSaxMD · Nov 3
Ok #IDtwitter, your opinion please. Isolated ocular or otosyphilis, do you strongly recommend that your pt undergo CSF exam? Assume IV PCN Rx regardless. What you *do*, not what you'd answer on the boards. Rationale in replies, thanks!
Yes.
50.2%
No.
49.8%
781 votes · Final results
40
8
31

Neuro/ocular syphilis, RPR, and CSF examination

- Prior guidelines called for lumbar puncture in all patients with ocular syphilis, and every 6 months until normalization for people with CSF pleocytosis at baseline
- **BUT** serologic (RPR) response predicts normalization of CSF parameters (less so in people with HIV not on antiretroviral therapy)
- Neurosyphilis and ocular syphilis are rare when the RPR is non-reactive
  - **Johns Hopkins:** 48 patients, none with positive CSF VDRL; only two treated for neurosyphilis, but both had another more likely diagnosis
  - **Medical University of Vienna:** 265 patients with syphilis and LP results; 43 had neurosyphilis; none with neurosyphilis had negative serum VDRL; median VDRL with neurosyphilis was 1:32

Workowski KA, 2015 STD Treatment Guidelines, 2015; Marra CM, Clin Infect Dis, 2008; Tuddenham S, Sex Transm Dis, 2015; Wohrl S, Acta Derm Venereol, 2006; Xiao Y, Scientific Reports, 2017

Case 3

- A 40-year-old non-binary person assigned female at birth presents to discuss PrEP.
- They identify as pansexual and, in the past 6 months, have had condomless sex with 3 people (a cisgender man, a cisgender woman, and a transgender woman).
- They have no symptoms.
- Laboratory results include:
  - **HIV antibody/antigen: Negative**
  - **Treponemal antibody: Negative**
  - **Gonorrhea/Chlamydia NAAT: Negative** in the vagina and rectum, **positive** for gonorrhea in the throat

Besides initiating PrEP, what are the next best steps for treatment?

A. Obtain a gonorrhea culture of the throat to assess for antibiotic resistance
B. Administer ceftriaxone 250 mg by intramuscular injection once and azithromycin 1 gram by mouth once
C. Administer ceftriaxone 500 mg by intramuscular injection once
D. Administer cefixime 800 mg by mouth once

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Why did the recommended treatment for gonorrhea change?

- **Rationale for a higher dose of ceftriaxone:**
  - A higher dose may be required to cure infections with decreased susceptibility.
  - A higher dose may be required to cure pharyngeal infection.
- **Rationale for no companion drug if Chlamydia is excluded:**
  - Increasing azithromycin resistance in *N. gonorrhoeae* and other pathogens
  - Ceftriaxone alone cures gonococcal infections

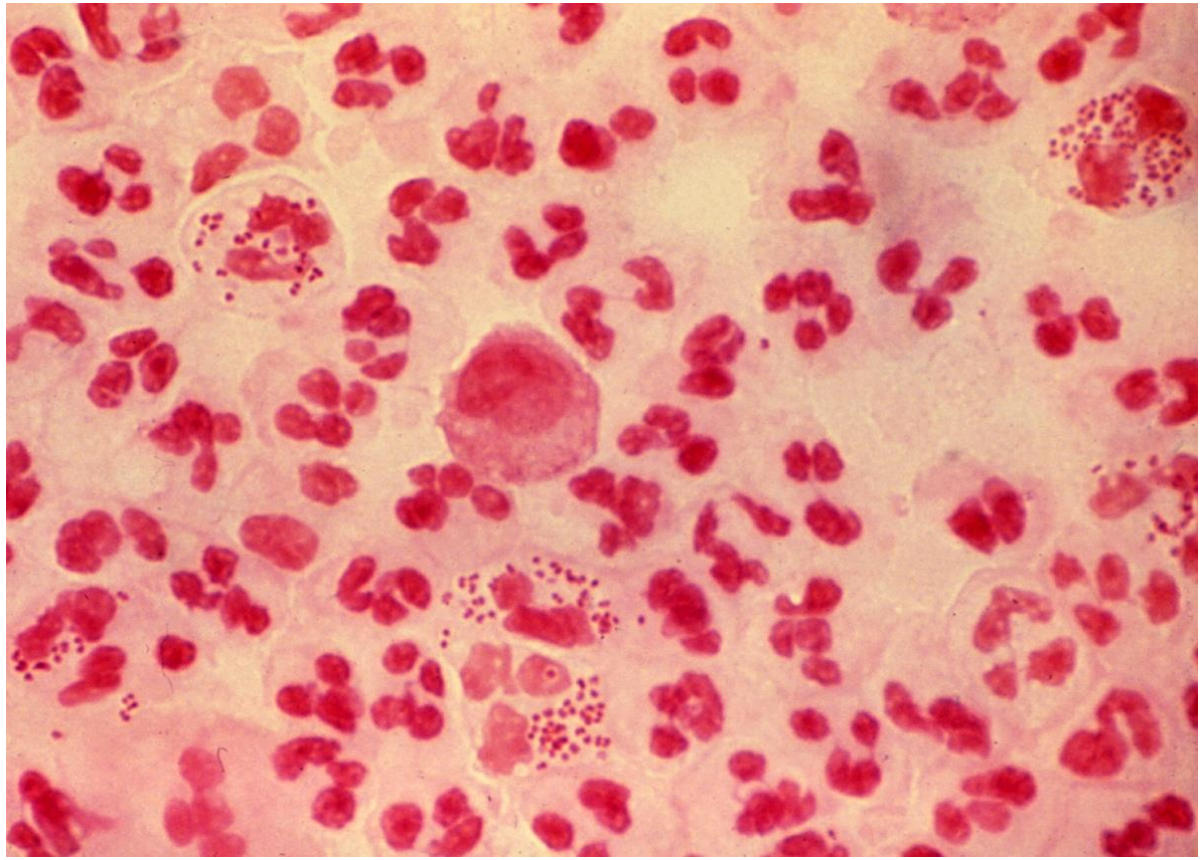

Image from https://www.std.uw.edu/go/pathogen-based/gonorrhea/core-concept/all

Key reminders about gonorrhea

- For people weighing ≥ 150 kg, treat with 1 gram of ceftriaxone
- All people with pharyngeal gonorrhea should have a test of cure 7-14 days after treatment
- For concurrent Chlamydia (or if Chlamydia has not been excluded), add doxycycline 100 mg by mouth twice daily for 7 days

Case 4

- A 37-year-old man taking TDF/FTC on-demand for PrEP presents with 3 days of dysuria and urethral discharge.
- In the past 3 months, he has had insertive and receptive anal sex with 3 cisgender men, using condoms about half the time.
- Physical examination shows scant, mucoid urethral discharge.
- Gonorrhea/Chlamydia NAAT from the urine is **negative**.
- He is treated with doxycycline 100 mg by mouth twice daily for 7 days.
- His symptoms lessen with treatment but increase 5 days after stopping doxycycline.

What is the next best step in management?

A. Treat empirically with azithromycin 1 gram by mouth once
B. Treat empirically with metronidazole 2 grams by mouth once
C. Send a urine NAAT for *Mycoplasma genitalium*
D. Send a urine NAAT for *Trichomonas vaginalis*

What is the next best step in management?

A. Treat empirically with azithromycin 1 gram by mouth once
B. Treat empirically with metronidazole 2 grams by mouth once
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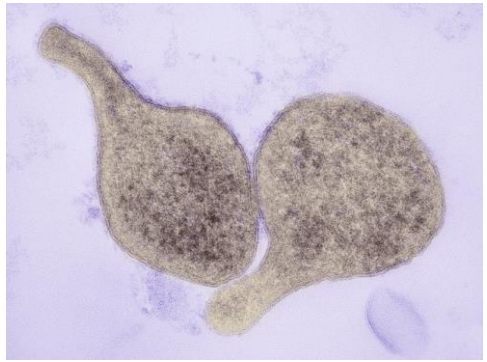
D. Send a urine NAAT for *Trichomonas vaginalis*

Mycoplasma genitalium is an important cause of urethritis.

- Accounts for 30% of cases of persistent urethritis in cisgender men
- Extremely difficult to culture (may take 6 months)
- Role in cisgender women is unclear, but probably causes cervicitis and pelvic inflammatory disease
- Antibiotic resistance is a worsening problem:
  - Cure rate for 7 days of doxycycline is ~30%
  - Macrolide resistance > 50% in many areas (> 80% among MSM)
  - Fluoroquinolone resistance rising

Durukan D, et al. Clin Infect Dis. 2019
Image from: https://www.infectiousdiseaseadvisor.com/home/topics/sexually-transmitted-diseases/mycoplasma-genitalium-challenges-in-diagnosis-and-treatment/



Case 4, continued

- A urine NAAT for *Mycoplasma genitalium* is **positive**.
- What is the preferred treatment?

A. Doxycycline 100 mg by mouth twice daily for 7 days, then moxifloxacin 400 mg by mouth once daily for 7 days

B. Moxifloxacin 400 mg by mouth daily for 7 days

C. Azithromycin 1 gram by mouth daily for 3 days

D. Doxycycline 100 mg by mouth twice daily for 7 days with azithromycin 1 gram by mouth daily for 3 days.

Case 4, continued

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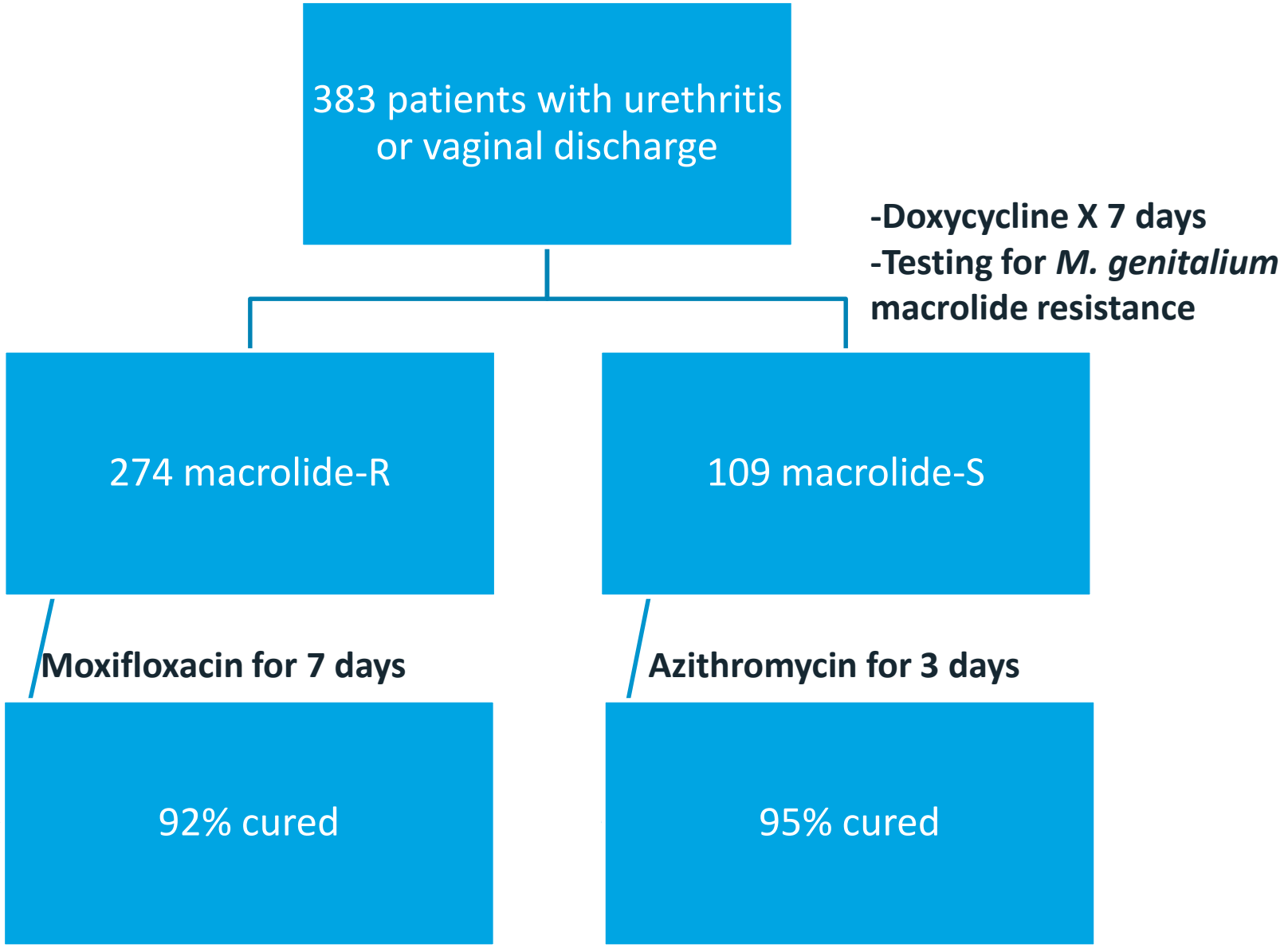

Durukan D, et al. Clin Infect Dis. 2019

Questions about *Mycoplasma genitalium*

- Is sequential therapy really the best strategy?
- Why can’t doxycycline and moxifloxacin be given concurrently?
- If sequential therapy is needed, how much “lag” between doxycycline and moxifloxacin is permissible?
- What is the optimal strategy if the diagnosis can’t be confirmed?

Another change: EPT for MSM

- **EPT (expedited partner therapy) for Chlamydia:** Providing an antibiotic prescription for a patient's sexual contacts without any clinician-patient relationship with those contacts
- Permissibility depends upon local laws.
- Prior guidelines recommended against EPT for cisgender MSM.
- Now, **"shared decision making regarding EPT for MSM is recommended."**

Image from https://health.maryland.gov/phpa/oidpcs/cstip/pages/expedited%20partner%20therapy.aspx

Programmatic implications of guideline updates (and other important reminders)

- ✓ Update order sets to reflect treatment changes (e.g., ceftriaxone dose).
- ✓ Adjust medication stocks as needed (e.g., more doxycycline than azithromycin?)
- ✓ Establish access to NAATs for *Mycoplasma genitalium*.
- ✓ Ask all patients with syphilis about visual symptoms.

Summary

- Doxycycline is the preferred agent for treatment of *Chlamydia trachomatis*.
- In isolated ocular syphilis without other neurologic signs or symptoms, a CSF examination is not required.
- Recommended treatment for gonorrhea is ceftriaxone 500 mg by intramuscular injection once.
- Treat *Mycoplasma genitalium* with sequential doxycycline and moxifloxacin (or azithromycin if resistance is ruled out).
- Consider EPT for MSM, especially if sexual contacts are unlikely to access testing/treatment.

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