

# More STI Patients Are Heading Your Way: An Update on CDC STI Guidelines

June 7, 2023

---

This webinar is sponsored by

**visby** medical™

# Our Speaker

---

## Ina Park, MD, MS

- California Prevention Training Center
- UCSF School of Medicine
- CDC Division of STD Prevention



THE  
**STATE OF STDs**  
IN THE  
**UNITED STATES,**  
2021

**STDs continue to forge  
ahead, hitting the  
nation hard.**



**1.6 million**  
CASES OF CHLAMYDIA  
3.8% decrease since 2017



**710,151**  
CASES OF GONORRHEA  
28% increase since 2017



**176,713**  
CASES OF SYPHILIS  
74% increase since 2017



**2,855**  
CASES OF SYPHILIS  
AMONG NEWBORNS  
203% increase since 2017

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

# Treatment Guidelines

---

Chlamydia  
Gonorrhea  
**TRICHOMONAS**

---



# Chlamydia Treatment: Urogenital/ Rectal/ Pharyngeal

Change in 2021 STI Treatment  
Guidelines

## Recommended regimens (non-pregnant):

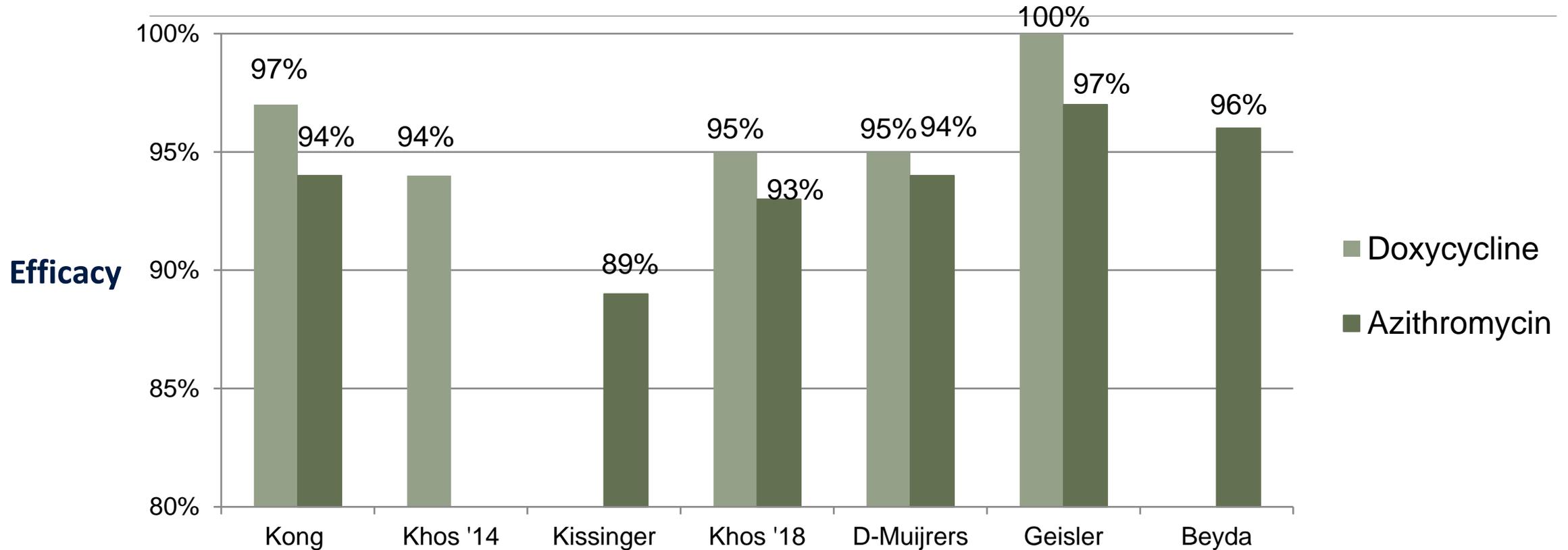
- Doxycycline 100 mg orally twice daily for 7 days\*

## Alternative regimens (non-pregnant):

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

\*Doxycycline delayed-release 200 mg, once-daily dosing for 7 days effective for urogenital CT.  
More costly but lower frequency GI side effects than standard doxycycline.

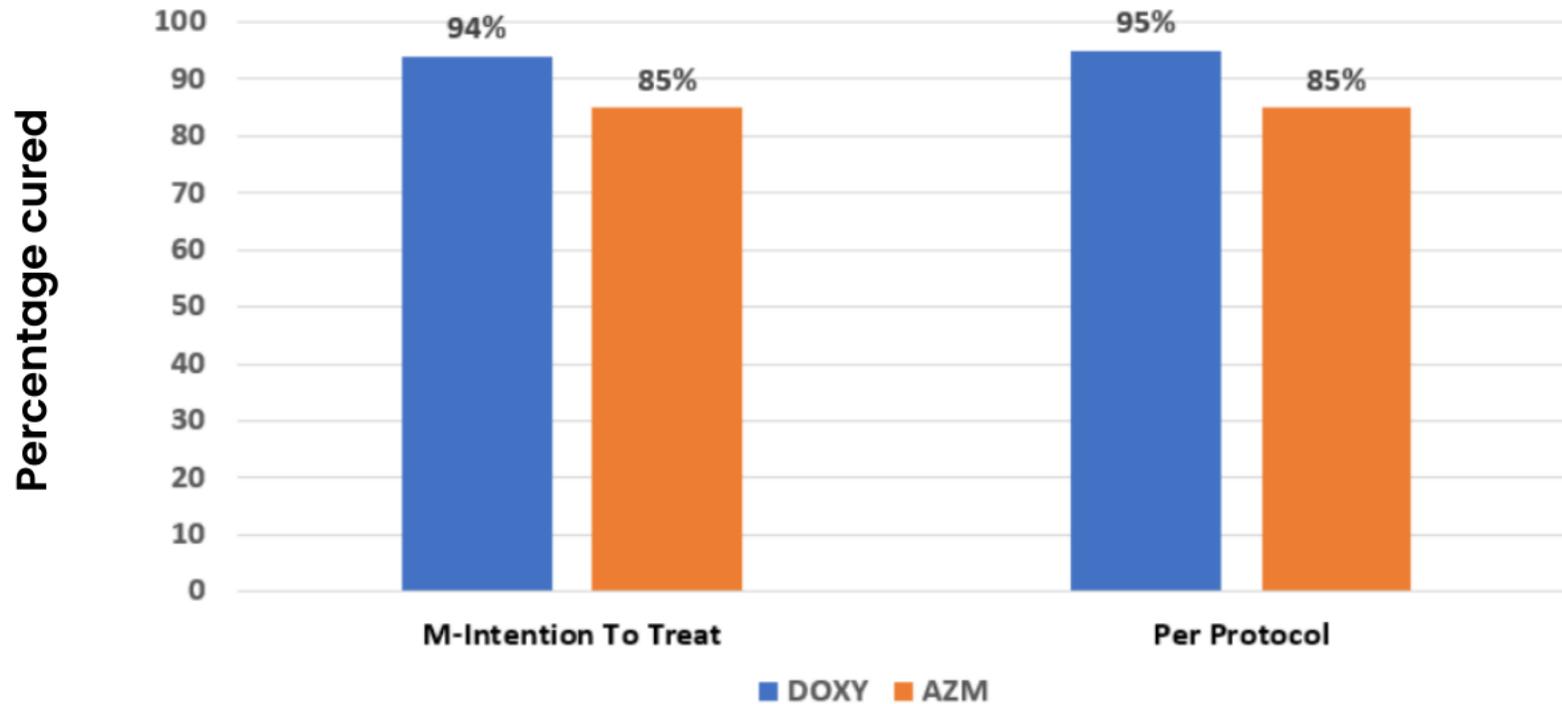
# Doxycycline vs Azithromycin for Urogenital CT



Slide credit: Dr. Will Geisler

# RCT of DOX vs AZM for Rectal CT in Women

## Microbiologic Cure at 6 Weeks



Modified intention to treat: all pts with +CT vaginal and rectal NAAT who underwent randomization  
Per Protocol: Complete NAAT data, exclude reinfections with new CT strain, condomless sex, <5 days of doxy, vomiting after first abx dose

Peuchant et al, Lancet Infect Dis 2022, May 9:S1473-3099(22)00148-7.



# Gonorrhea Treatment Guidelines

## for uncomplicated infections

Ceftriaxone 500 mg IM x 1  
for persons weighing <150kg\*

\*For persons weighing  $\geq 150$  kg, 1 g of IM ceftriaxone should be administered

However, if chlamydia has not been excluded, treat for chlamydia with:

Doxycycline 100 mg PO  
BID x 7 days

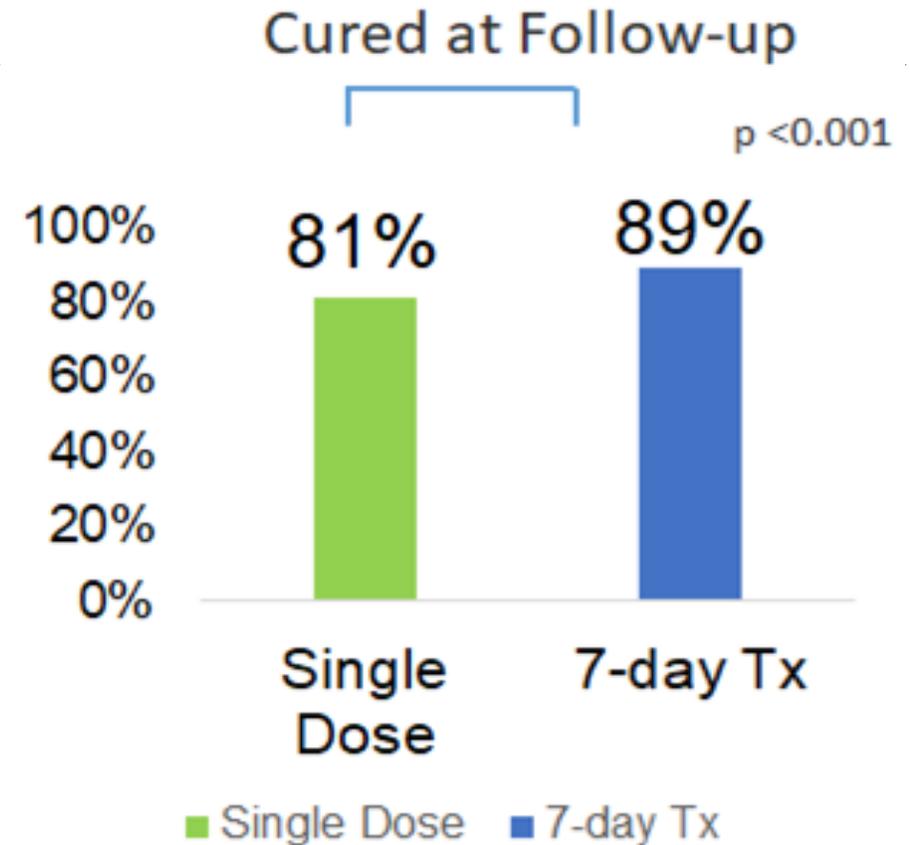
For pregnancy, allergy, or concern for non-adherence, 1 g PO azithromycin x 1 can be used

- No longer recommending dual therapy with azithromycin
- Test-of-cure at 7-14 days post-treatment for pharyngeal gonorrhea

Update to CDC's Treatment Guidelines for Gonococcal infection, 2020; MMWR

# Trichomonas Treatment: Single-Dose Metronidazole Is Not as Effective as 7 Days

- Single dose previously recommended for trich in HIV-negative women
- 7-day therapy (500 mg BID) recommended for patients with HIV (CDC TX GL 2015)
- RCT: N=623 women randomized 1:1 to single dose MTZ vs 7 day
- Culture TOC, 6-12 days post treatment



Kissinger, 2018 Lancet Infect Dis

# Trichomoniasis Treatment

---

RECOMMENDED REGIMEN: VAGINAL TRICHOMONAS (HIV+/HIV-)

**METRONIDAZOLE 500 MG ORALLY BID X 7D**

METRONIDAZOLE 2 G ORALLY SINGLE DOSE FOR MEN W/  
TRICHOMONAS OR MALE PARTNERS)\*

ALTERNATIVE REGIMEN:

TINIDAZOLE 2 GM ORALLY IN A SINGLE DOSE

---

ACOG 2020 TREATMENT GUIDELINES

Metronidazole 500 mg orally BID x 7 d

Retest for reinfection in 3 months

\*EPT may have a role in partner management for trichomoniasis

CDC 2021 STD Treatment Guidelines,  
ACOG Practice Bulletin 215. OB/GYN Vol 135. Jan 2020

# Syndromic Management

# Syndromic Management

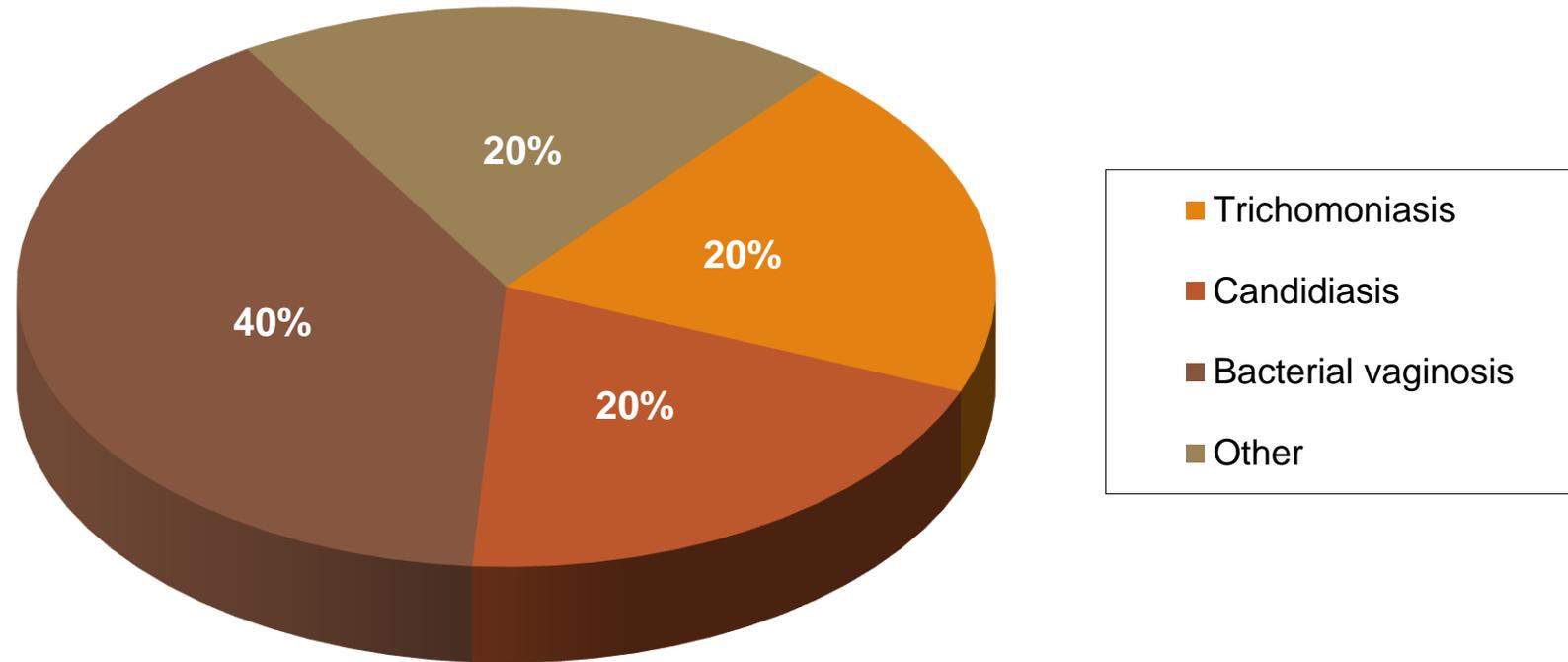
---

- Treatment based upon a “best guess” of diagnosis, using symptoms and a description of physical findings, but without the use of laboratory tests
- This approach works for:
  - Penile-urethral GC/CT, BV, candida vaginitis, +/- genital herpes; not good for cervical GC/CT)
  - Not very specific (ie, many false positives possible, resulting in overtreatment)

# Vaginal Discharge

# Vaginitis: Etiologies

---



“Other” includes atrophic, irritant/chemical, desquamative inflammatory vaginitis; erosive lichen planus

## Summary of Vaginitis Findings

	Itch/ Burning	Malodor	Frothy	Color
<b>Candida</b>	I: Yes B: Sometimes	No	No	White
<b>Trichomoniasis</b>	I: Yes B: No	Yes	Yes	Yellow Sometimes white
<b>Bacterial vaginosis</b>	No	Yes	Yes	White “homogenized milk”
<b>DIV</b>	Yes	No	No	Profuse white or green
<b>Physiologic</b>	No	No	No	White

# So, How Do We Make the Right Diagnosis?

---

History

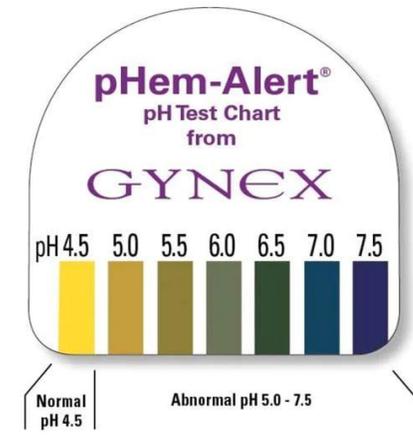
Physical Exam

***Wet mount microscopy, pH and/or point of care tests***

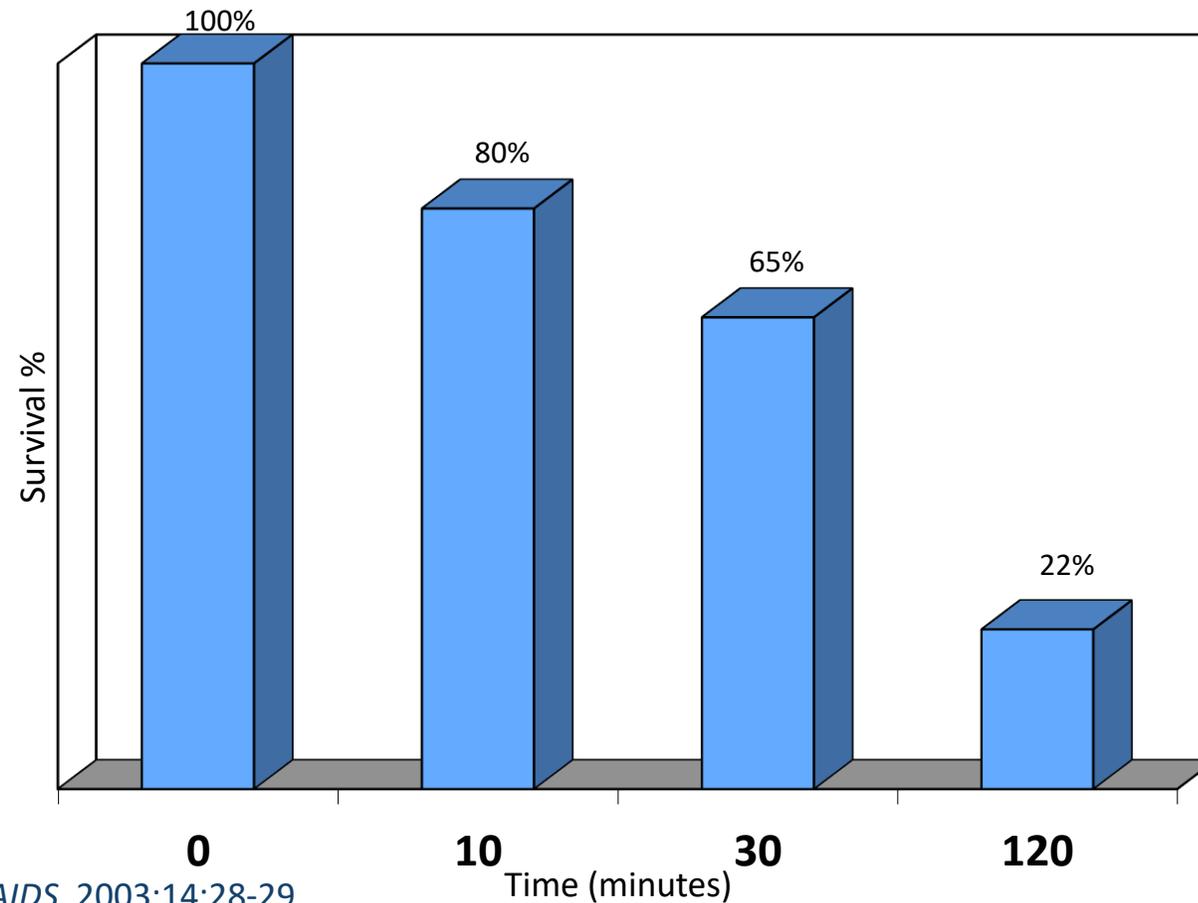
- ***If pH 4.5 or less, BV and trich are unlikely***

STD work-up (nucleic acid amplification tests)

Occasionally vaginal culture (if resistant organism suspected)



# 'Decreasing Shelf-Life' of Wet Mounts for Trichomonas



Kingston MA, et al. *Int J STD AIDS*. 2003;14:28-29.

## Point-of-Care Testing for Trichomonas

	Turnaround Time	Sensitivity	Specificity
Wet mount	5 min	44%-68%	100%
Rapid Ag: OSOM	10 min	83%-92%	99%-100%
Rapid PCR: Visby	30 min	99%	97%
Rapid nucleic acid amplification (eg, GeneXpert, AmpliVue)	40-45 min	95%-100%	97%-99%

Morris SR. *Lancet Infect Dis.* 2021;21(5):668-676. Gaydos CA. *Expert Rev Mol Diagn.* 2017;17:303–306. Schwebke JR. *J Clin Microbiol.*

2018;56:e01091-17. Gaydos CA. *Sex Transm Infect.* 2017; 93(Suppl 4):S31–S35.

99.2% (95.5-99.9) and specificity of 96.9% (95.8-97.7)

# Lab-Based Tests: Culture vs NAATs

	FDA-cleared for men?	Sensitivity	Specificity
Culture	N/A	Women: 75%-96% Men: 50%-80%	100%
Hologic Aptima	No	88%-100%	98%-100%
BD Probe Tec TV	No	98%-100%	98%-100%
BD Affirm VP III	No	91%-100%	93%-96%
<b>Roche Cobas TV/MG</b>	<b>Yes</b>	Women: 96%-100% Men: 77%-100%	97%-99% 98%-100%
<b>BD Max CT/GC/TV</b>	<b>Yes</b>	Women: 90-100% Men: 81-100%	98%-100% 99%-100%

(For assays only cleared for women, ok to use for penile infections if lab validates samples (urine, urethral or meatal swabs))

Nye MB, et al. *Am J Obstet Gynecol.* 2009;200(2):188.e1-7. Coleman JS, et al. *J Clin Microbiol.* 2018;56(9):e00342-18. Van Der Pol B. *J Clin Microbiol.* 2014;52(3):885-889. Marlowe EM, et al. *Eur J Microbiol Immunol.* 2019;9(2):42-45. FDA: [https://www.accessdata.fda.gov/cdrh\\_docs/reviews/K182692.pdf](https://www.accessdata.fda.gov/cdrh_docs/reviews/K182692.pdf). FDA: [https://www.accessdata.fda.gov/cdrh\\_docs/pdf19/K190433.pdf](https://www.accessdata.fda.gov/cdrh_docs/pdf19/K190433.pdf).

## Vaginal Discharge: What About GC/CT?

---

- CDC guidelines do not recommend empiric treatment for GC/CT in patients with vaginal discharge
- For patients with new vaginal discharge who need evaluation, testing for GC/CT is recommended prior to treatment
  - Exception is patients with known sexual contact to GC/CT

# Urethral Discharge

# Case

---

35 yo cis male who has sex with women presents with dysuria and clear penile discharge x 2 days

- Empirically treated with ceftriaxone 500 mg IM and doxycycline x 7 days
- Urine GC and CT are negative
- He calls you 6 days later to say he's not better
- He presents to urgent care and no discharge is present, but urine dip is positive for LE and negative for nitrite

# Persistent Urethritis

---

You confirm the patient took their doxy and that their partner was treated.

You test for *Mycoplasma genitalium* and trichomonas.

*M gen* NAAT is positive

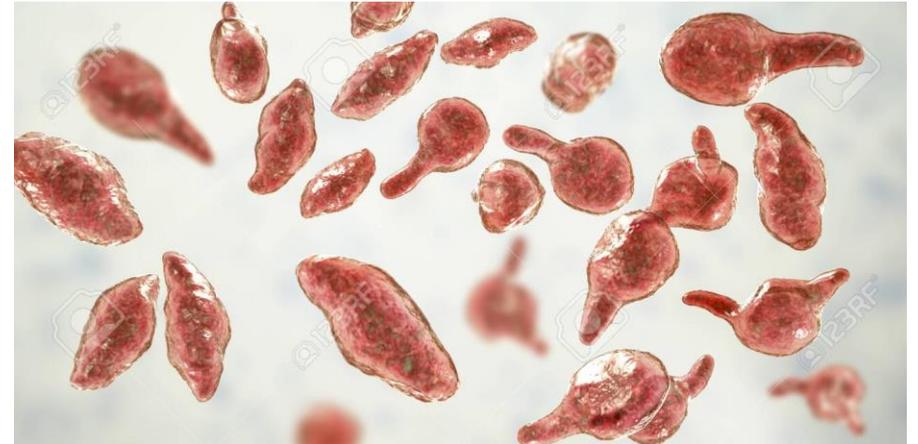
NOW WHAT?

1. Treat with azithromycin 1 g PO x1
2. Treat with metronidazole 2 g PO x1
3. Treat with moxifloxacin 400 mg PO daily x 7 days
4. Treat with moxifloxacin 400 mg PO daily x 10 days

# *Mycoplasma genitalium*

---

- AKA: MG, M gen, M gent
- Intracellular bacteria, slow growing, very difficult to culture (months)
- Can cause:
  - Cervicitis, PID, infertility
  - Urethritis (and persistent urethritis)
  - Prostatitis
  - Epididymitis
  - Proctitis? → Jury still out



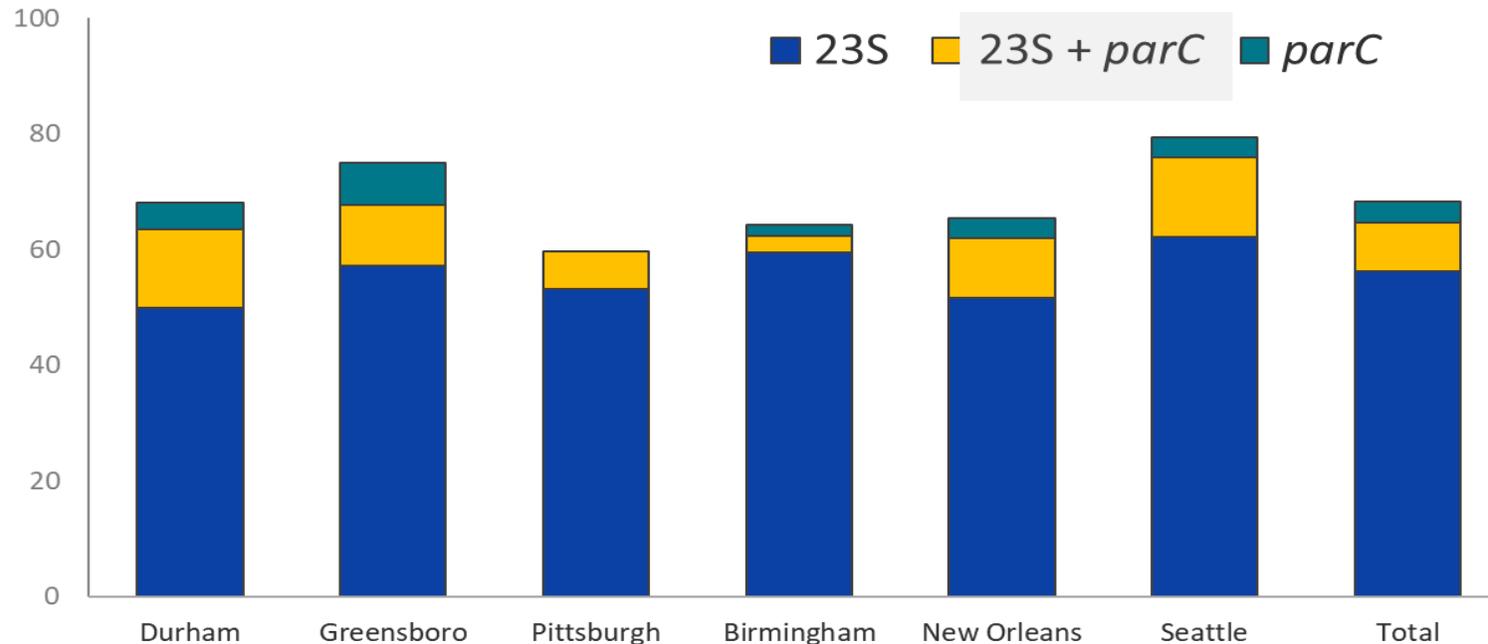
WATCH  
LIST



DRUG-RESISTANT  
**MYCOPLASMA GENITALIUM**

<https://www.cdc.gov/drugresistance/pdf/threats-report/2019-ar-threats-report-508.pdf>

# Over 50%-60% of *M genitalium* Infections Have Resistance Mutations to Macrolides (Azithro)



National Institutes of Health  
[HHSN2722013000121, HHSN272000010,  
DIMD16-0039]

Bachmann LH, Kirkcaldy RD, et al. CID 2020  
Slide credit: L Bachmann

# ***Mycoplasma genitalium*: Testing**

---

Who to test?

- CDC: People with symptoms or signs that might be caused by MG who fail initial treatment
  - **Persistent urethritis**
  - Cervicitis, consider for PID
    - (In SF, everyone with urethritis is tested on initial presentation)
  - Contacts to patients with confirmed MG
  - DO NOT screen asymptomatic individuals

# *M genitalium* Treatment

- **Sequential treatment for suspected/documentated *M genitalium***

Start with doxycycline to reduce bacterial load

Change in 2021 STI Treatment Guidelines

Doxycycline 100 mg  
BID x 7 days



Moxifloxacin 400 mg  
QD x 7 days

If local macrolide resistance is low or known macrolide sensitive

Doxycycline 100 mg  
BID x 7 days



Azithromycin 2.5 gm  
over 4 days

(Azithromycin – 1 g x 1 day then 500 mg x 3 day)

MG can be difficult to treat – if someone does not get better, they should be retested (wait 21 days for a test of cure)

# *Mycoplasma genitalium* (MG) Treatment Failure Registry

**Purpose:** Collect clinical information on cases of MG that fail antimicrobial therapy

**Rationale:** Surveillance of possible moxifloxacin resistant MG, inform treatment options

Any provider can report a case (no coordination with health department)

No identifying patient information collected

CDC staff will follow up with providers via phone/email for additional demographics

Questions can be emailed to [mgenregistry@cdc.gov](mailto:mgenregistry@cdc.gov)

**PLEASE REPORT!**



Centers for Disease  
Control and Prevention

## **Mycoplasma genitalium Treatment Failure Registry**

The purpose of this form is to collect clinical information on cases of *Mycoplasma genitalium* that fail antimicrobial therapy. All reported information will be maintained in the strictest confidence.

Identifying patient information (e.g., patient name, date of birth, medical record number, social security number) should not be included on the form.

Any questions about the *M. genitalium* case registry can be directed to the CDC DSTDP Clinical Team ([mgenregistry@cdc.gov](mailto:mgenregistry@cdc.gov)).

<https://redcap.link/mgenregistry>

[Returning?](#)

AAA



**JUCM**  
THE JOURNAL OF URGENT CARE MEDICINE®

How should providers manage  
rectal symptoms if an STI is  
suspected?

# Rectal Symptoms: r/o Proctitis

---

- Test for GT/CT, HSV-PCR (plus HIV and syphilis)
  - Ceftriaxone 500 mg IM plus doxycycline 100 mg orally twice a day x 7 days
  - If the patient is pregnant or doxycycline is not available, then azithromycin 1 g orally in a single dose can be used

What if the client has a sore throat and suspects exposure to GC/CT through oral sex?

# Sore Throat and Suspicion of GC/CT Through Oral Sex

---

- Symptomatic pharyngitis is more likely to be caused by non-sexually transmitted bacteria, upper respiratory viruses (including COVID)
- Empiric treatment not recommended, unless patient known exposure to GC/CT

# Genital or Anal Ulcers

---

35-year-old bisexual male presents to your clinic with genital ulcers.

The ulcers are a little bit painful. They are not pruritic. There are several of them.

The patient's physical exam reveals the following findings . . .



## **What is the most likely diagnosis?**

---

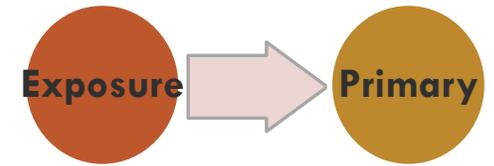
- A. Genital herpes
- B. Primary syphilis
- C. Secondary syphilis
- D. Chancroid
- E. Pityriasis rosea

## What is the most likely diagnosis?

---

- A. Genital herpes
- B. Primary syphilis
- C. Secondary syphilis
- D. Chancroid
- E. Pityriasis rosea

# Primary Syphilis



 *STD Atlas, 1997*



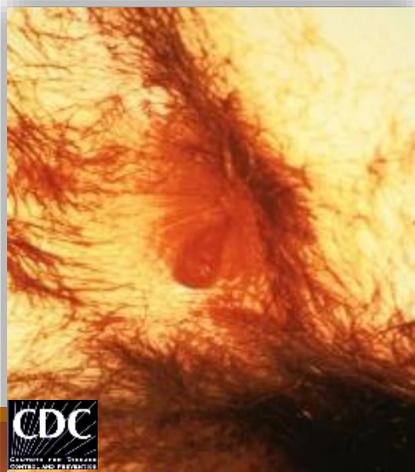
Dr. Joseph Engelman, San Francisco City Clinic



*Courtesy: SF City Clinic*

# Primary Syphilis

---



# Primary Syphilis: Extragenital Chancres

---



---

After examining the patient's genital ulcers, the provider suspects genital herpes.

The patient is prescribed acyclovir.

His ulcers resolve entirely; he feels well.

He returns a few weeks later, this time with a diffuse but subtle non-pruritic rash.

The appearance of the rash is as shown:



DMHC

## What is the most likely diagnosis?

---

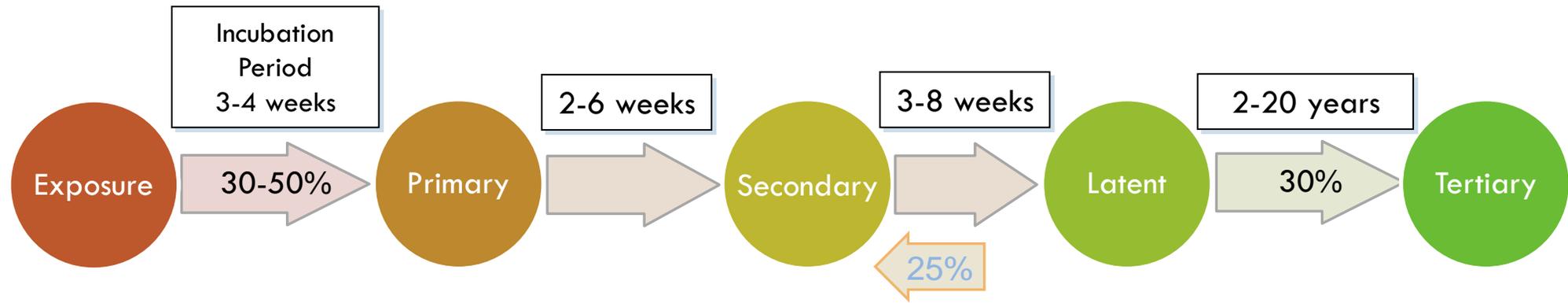
- A. Secondary syphilis
- B. Tinea versicolor
- C. Coxsackie virus (hand-foot-mouth disease)
- D. Atopic dermatitis
- E. Contact dermatitis

## What is the most likely diagnosis?

---

- A. Secondary syphilis
- B. Tinea versicolor
- C. Coxsackie virus (hand-foot-mouth disease)
- D. Atopic dermatitis
- E. Contact dermatitis

# Natural History of Syphilis: Secondary Syphilis



## Secondary signs

- Rash (75-90%),
  - Involving palms/soles (60%)
- Generalized lymphadenopathy (70-90%)
- Constitutional symptoms (50-80%)
- Mucous patches (5-30%)
- Condyloma lata (5-25%)
- Patchy alopecia (10-15%)
- Symptoms of neurosyphilis (1-2%)

# Secondary Syphilis: Rash

---



# Secondary Syphilis: Mucous Patches

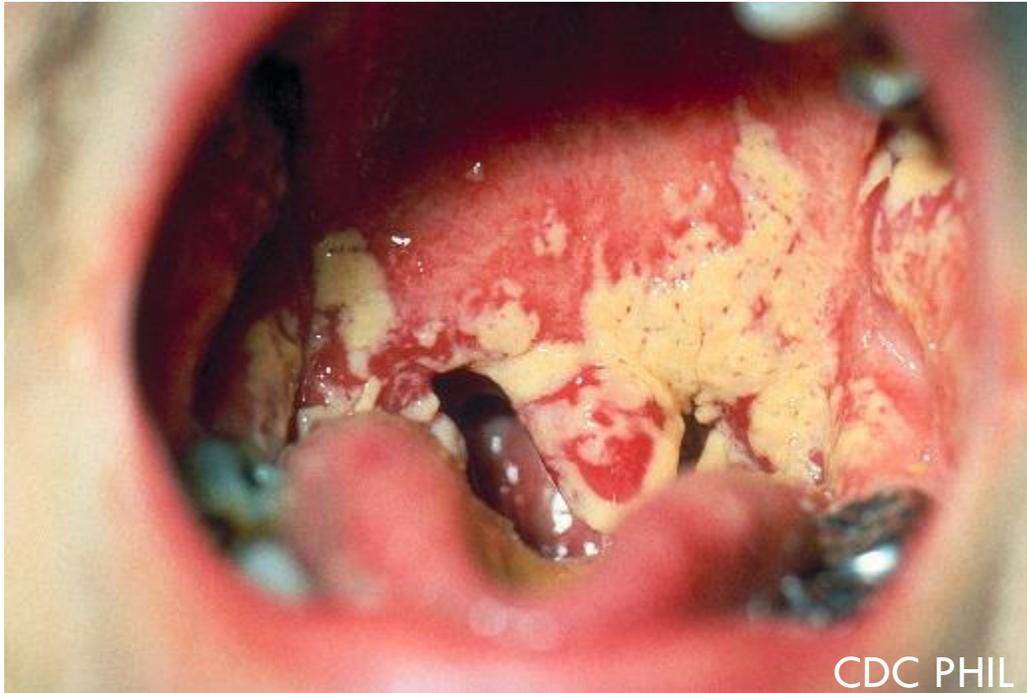
---



Courtesy: Gregory Melcher, UC Davis  
Susan Philip, SF DPH & UCSF

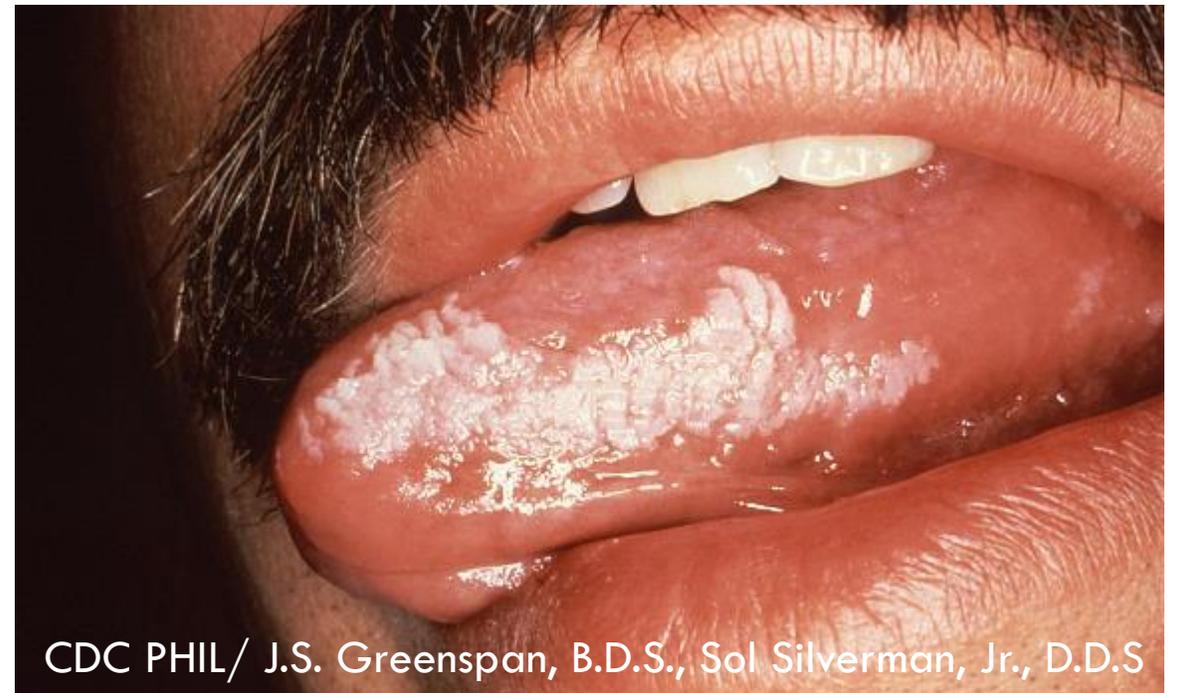
# Mucus Patches: Differential Diagnosis

---



CDC PHIL

Oropharyngeal candidiasis / Thrush



CDC PHIL/ J.S. Greenspan, B.D.S., Sol Silverman, Jr., D.D.S

Oral hairy leukoplakia

# Secondary Syphilis: Patchy Alopecia

---

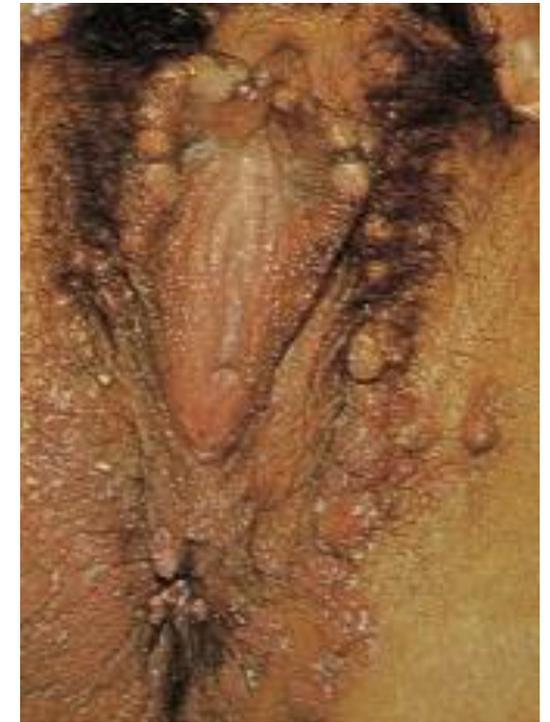


# Secondary Syphilis: Condyloma lata

---



Courtesy: Gregory Melcher, UC Davis  
Susan Philip, SF DPH & UCSF



Forbes CD, Jackson WF. *Color Atlas and Text of Clinical Medicine*, 3rd ed. London: Mosby; 2003

# Can be difficult to distinguish MPX, genital herpes and primary syphilis

---



Genital HSV-2



MPX



Primary syphilis

---

# Syphilis Treatment

---

# Primary, Secondary, and Early Latent Syphilis

**Benzathine penicillin G\* 2.4  
million units IM in a single dose**

**\* Bicillin L-A is the trade name. DO NOT use Bicillin C-R!**

Alternatives (non-pregnant penicillin-allergic adults):

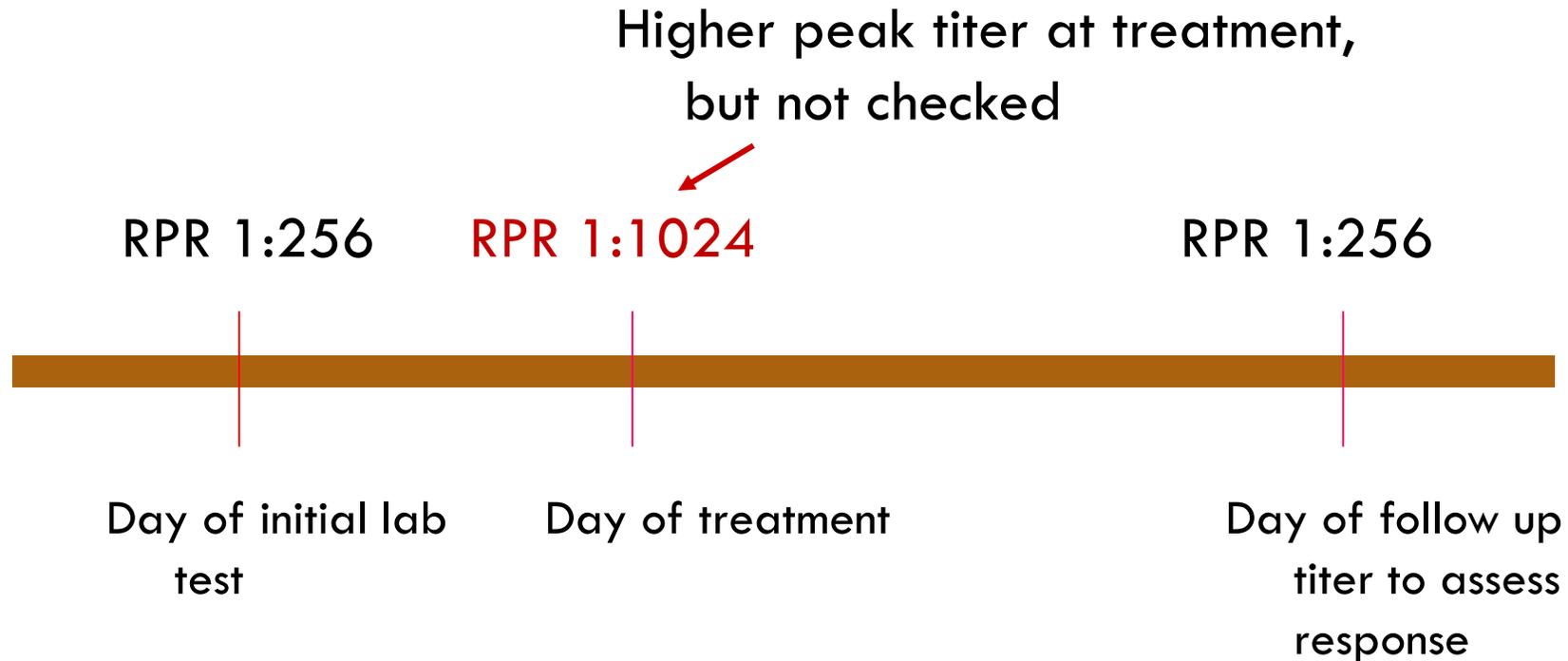
Doxycycline 100 mg po bid x 2 weeks

Tetracycline 500 mg po qid x 2 weeks

Ceftriaxone 1 g IV or IM qd x 10-14 d

# Importance of Day of Treatment Titer

---



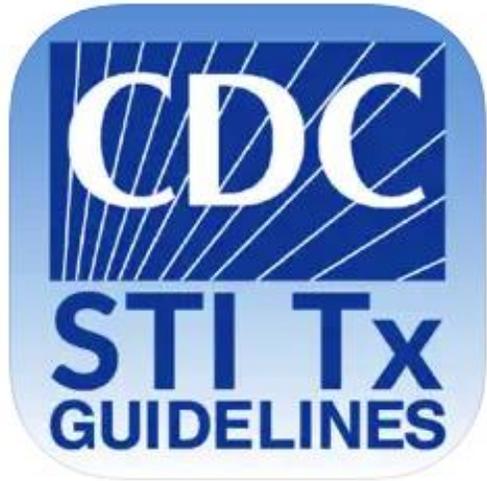
Establishes baseline to compare response post treatment

Frequently forgotten and without baseline makes assessment of titer response difficult

# Resources

---

# Get the free CDC Treatment Guidelines App



**STI Tx Guide** 12+  
Centers For Disease Control and Prevention  
Designed for iPhone  
★★★★★ 4.3 • 25 Ratings  
Free

App Store (Apple)



Google Play (Android)

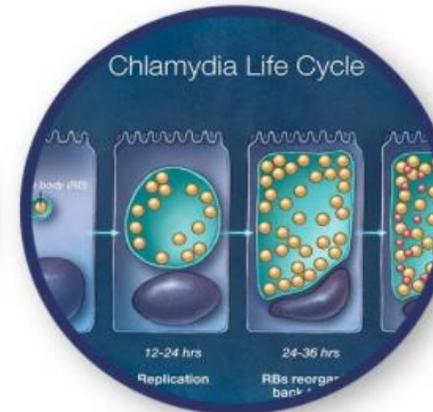
Love STIs and want free CME?  
<https://www.std.uw.edu/>

# National STD Curriculum

THE MOST RECENT CDC STD  
TREATMENT GUIDELINES INTEGRATED  
INTO A FREE, UP-TO-DATE,  
EDUCATIONAL WEBSITE. **FREE CE.**



SELF  
STUDY



QUICK  
REFERENCE



QUIZ  
QUESTION

**EXPLORE THE CURRICULUM**



National Network of  
STD Clinical Prevention  
Training Centers

# CLINICIANS, Got a Tough STD Question?

GET FREE EXPERT STD CLINICAL  
CONSULTATION AT YOUR FINGERTIPS



Ask your question



National STD experts review



Response within 1-5 business  
days, depending on urgency

**GO** ▶

[STDCCN.org](http://STDCCN.org)

**JUCM**  
THE JOURNAL OF URGENT CARE MEDICINE

# Acknowledgements

---

- Patty Cason, NP
- Amanda Thornton, MD
- The Doxy PEP Study Team



# Keep in Touch

---



Ina.park@ucsf.edu



@InaParkMD



www.inapark.net



@InaParkMD

# Questions

---

**Thank you!**

---

**visby** medical™