STI Clinical Update:
Bacterial Infections

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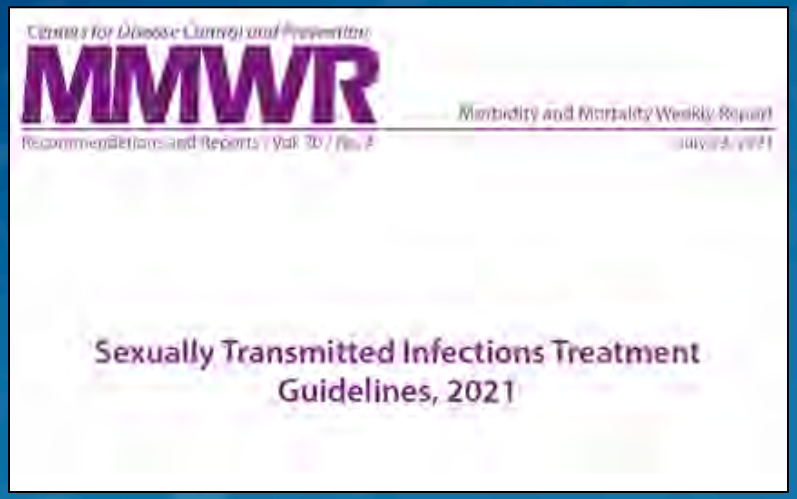

Hosted in Partnership with

OREGON HEALTH AUTHORITY

END HIV

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Disclaimer

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AETC AIDS Education & Training Center Program Mountain West

Disclosure

- No conflicts of interests or relationships to disclose

Learn more at:
www.cdc.gov/sti

The State of STIs in the United States in 2023.

Sexually transmitted infections (STIs) are very common but preventable

1.6 million cases of **CHLAMYDIA**; **9% decrease** since 2019

601,319 cases of **GONORRHEA**; **2% decrease** since 2019

209,253 cases of **SYPHILIS**; **61% increase** since 2019

3,882 cases of **SYPHILIS AMONG NEWBORNS**; **106% increase** since 2019

Anyone who has sex could get an STI, **but some groups are more affected:**

- young people aged 15-24
- gay & bisexual men
- pregnant women
- racial & ethnic minority groups

Untreated STIs can lead to **serious health problems:**

- **increased risk of transmitting or getting HIV**
- **long-term pelvic/ abdominal pain**
- **inability to get pregnant or pregnancy complications**

Prevent the spread of STIs with three simple steps:

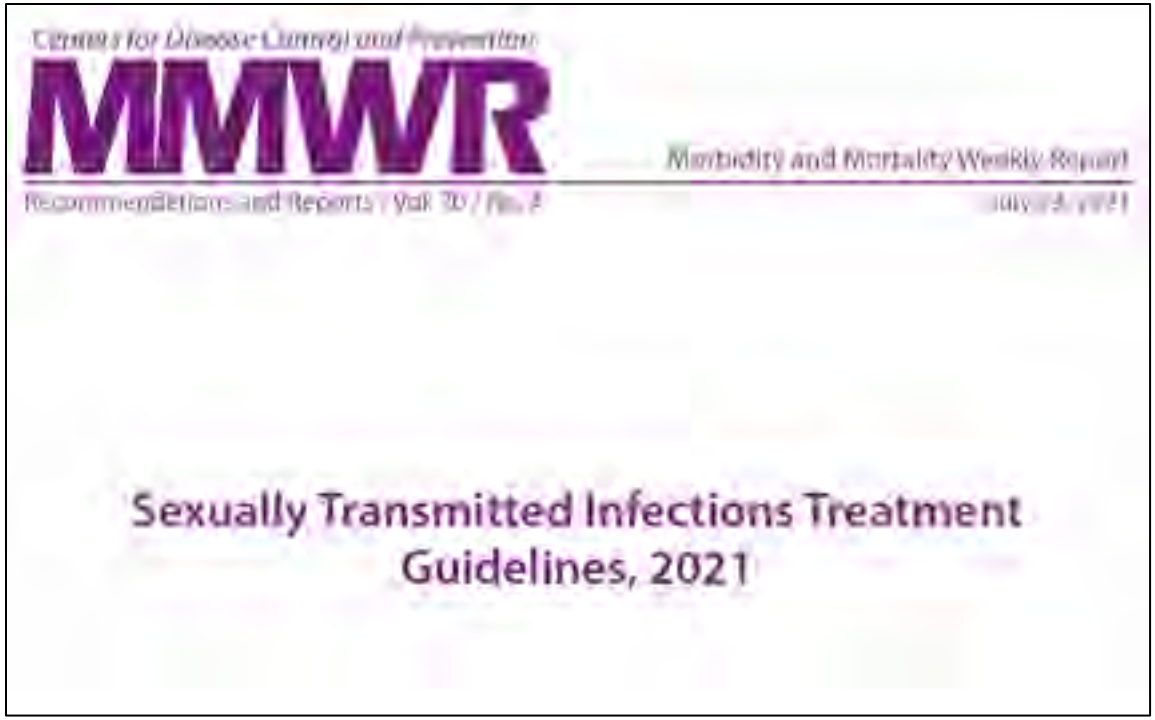
talk | test | treat

CDC

There are no shortcuts, and we have to meet people where they are. Some people face tremendous barriers to STI prevention and health services. So, the most important work is often outside the clinic, whether it be reaching out to communities with testing, interviewing patients to offer services to their partners, or delivering treatment directly to someone.

- Laura Bachmann, MD, MPH, Acting Director, CDC's Division of STD Prevention

2021 CDC STI Guidelines



Mobile app now available for Apple and Android devices
Search “STI Tx Guide”
https://www.cdc.gov/std/treatment-guidelines/provider-resources.htm#MobileApp

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

What's in a Name?

STD

- Sexually transmitted *disease*
- Refers to disease or illness
- Implies sickness

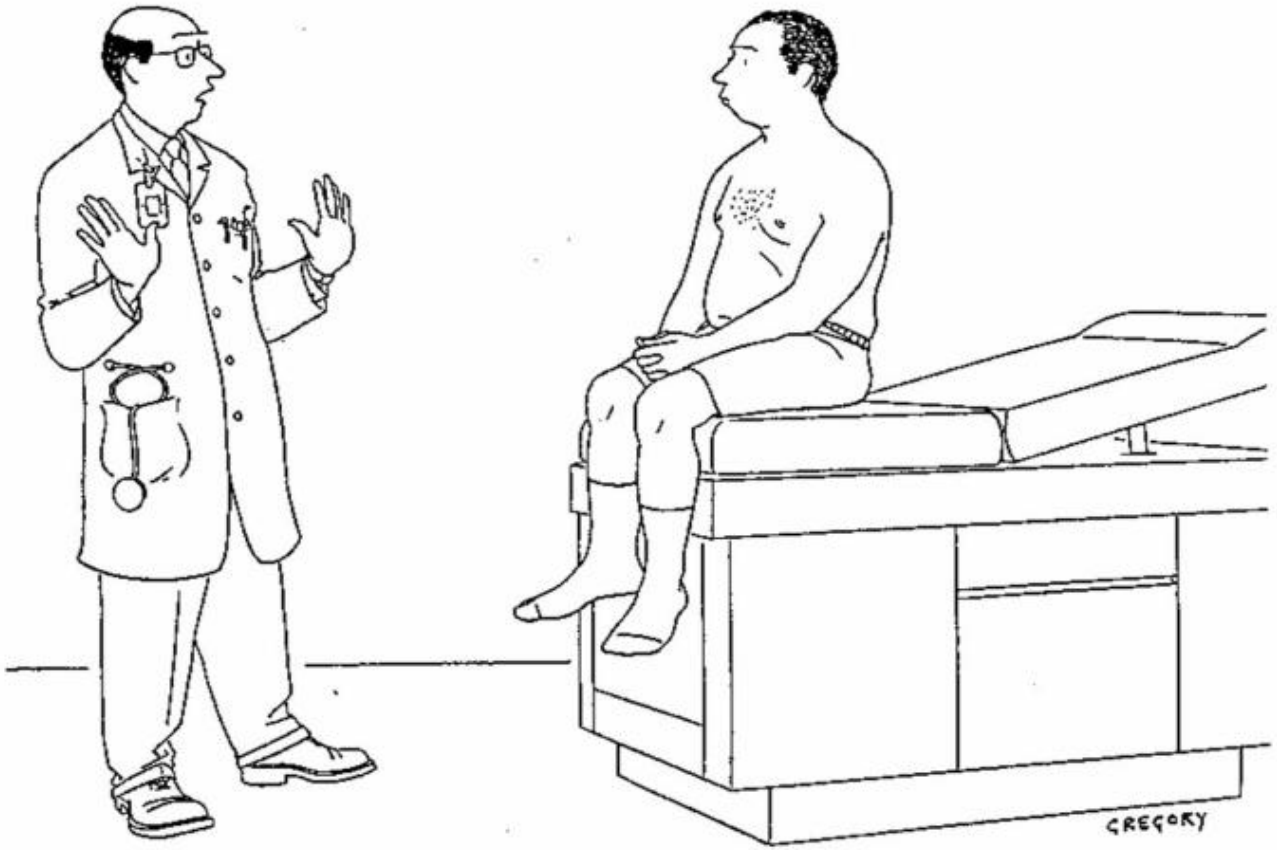
STI

- Sexually transmitted *infection*
- Refers to pathogen
- Often asymptomatic

S.H.E.
Safe • Healthy • Empowered
women's clinic

The ins and outs of screening: 2021 CDC recommendations

STI Screening: Requires Asking and Listening



"Whoa—way too much information."

Patient-Centered STI Care: Our Role

- A welcoming environment
- Routine sexual history and risk assessment
- Screen, appropriately
  - Appropriate anatomic sites with recommended tests
  - Alcohol, drug use, tobacco, depression, intimate partner violence
- Assure appropriate vaccination status (HPV, HBV/HAV, mpox)
- Prevention messages--condoms, HIV pre- and post-exposure prophylaxis (PrEP, PEP, Doxy PEP)
- Diagnosis and treatment
- Provide or refer (partner management/ services)
- Report cases in accordance with state and local statutory requirements; keep reports confidential

New Sexual History Taking Guide: New 5 P's

1. Partners

   Tell me about your partners…

2. Practices
3. Protection from STIs
4. Past history of STIs
5. Pregnancy intention (new)

   Previously "prevention"

Additional questions for identifying HIV and viral hepatitis risk:

- Have you or any of your partner(s) ever injected drugs?
- Is there anything about your sexual health that you have questions about?

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

STI Screening for Women (WSM and WSW)

Women under 25 years of age

- Chlamydia/gonorrhea
- HIV at least once
- Hep C at least once if ≥ 18 yo (unless prevalence of Hep C < 0.1%)

Women 25 years of age and older

- Chlamydia/gonorrhea if at risk
- HIV at least once
- Hep C at least once (unless prevalence of Hep C < 0.1%)

Pregnant women

- Chlamydia (<25 years of age, or older women if at risk, and retest during 3rd trimester)
- Gonorrhea (<25 years of age, or older women if at risk, and retest during 3rd trimester)
- HIV at 1st antenatal visit, and in 3rd trimester, if at risk
- Syphilis serology at 1st antenatal visit, in 3rd trimester, and at delivery, if at risk (WA DOH)
- HepB sAg
- Hep C (unless prevalence of Hep C < 0.1%) WITH EVERY PREGNANCY

Screening not recommended for M. genitalium or trichomonas

STI Screening in Men who Have Sex with Women (MSW)

- No routine screening in the community
  - Except HIV (**age 15-65 and if seeking STI testing**) and Hepatitis C if **age ≥18**

- CDC says consider screening for:
  - CT in “young men” in adolescent clinics, correctional facilities, and STI clinics or in populations with high burden of infection
  - Syphilis if increased risk (includes history of incarceration, age <29)
  - Hepatitis B if at increased risk (sexual or percutaneous exposure)

STI Screening for MSM

- HIV*
- Syphilis*
- Urethral GC and CT*
- Rectal GC and CT (if receptive anal sex)*
- Pharyngeal GC (if oral sex)*
- Hepatitis B (HBsAg, HBV core ab, HBV surface ab)
- Hepatitis C: (At least once if ≥ 18 yo, unless prevalence of infection < 0.1%)
- Anal cancer: new guidelines in people with HIV
- HSV-2 serology (consider)

***At least annually, more frequent (every 3-6 months) if multiple/anonymous partners, drug use, or partners with risk**

Routine screening not recommended for M. genitalium

Anal CA Screening Guidelines in PWH: https://clinicalinfo.hiv.gov/en/guidelines/hiv-clinical-guidelines-adult-and-adolescent-opportunistic-infections/human

A 45 yo woman mentions vaginal discharge and burning after having vaginal intercourse with a new male partner recently. What is the best sample to test for GC and CT?

A. First void urine
B. Endocervical swab
C. Vaginal swab
D. Patient self-collected vaginal swab

NAAT for GC/CT testing in women

- Sensitivity: vaginal > urine > cervical
- Women can self-collect vaginal swabs for NAAT
- Many women prefer vaginal swab to urine

N=1464 women	Clinician-obtained	Patient-obtained
Sensitivity for CT	97.2%	98.3%
Sensitivity for GC	96.2%	96.1%

Schachter J, STD 2005
Chernesky MA STD 2005

Extra-Genital screening: If you just check the pee, you'll miss GC and CT…

What is “Extragenital” Screening?

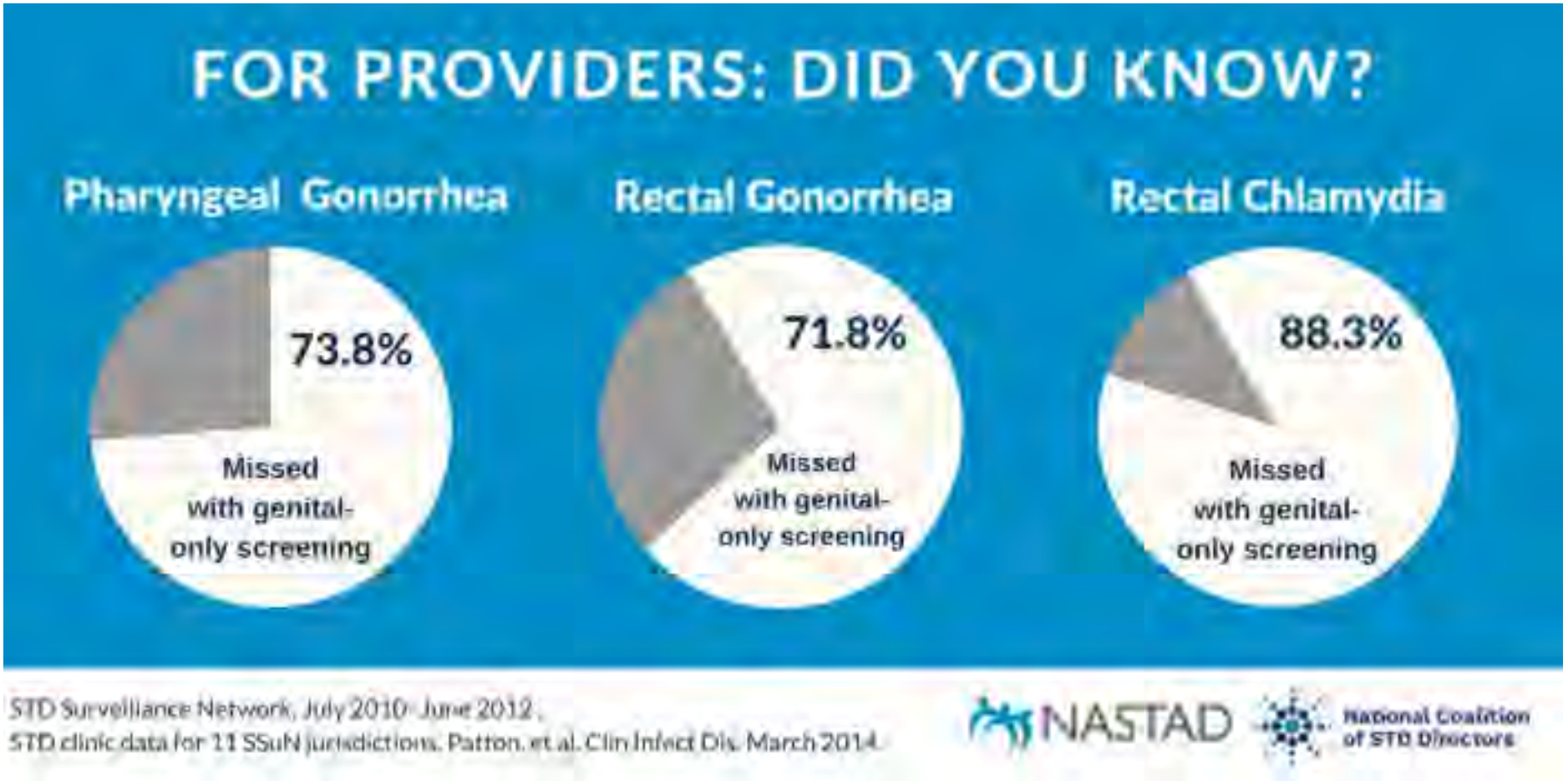
- Testing for STIs at any body site other than genitourinary (urethral/urine/vaginal/cervix)
- Usually refers to rectal and throat
- Typically for gonorrhea and/or chlamydia only
- Previously recommended routinely only for MSM, but now *permissive* for other individuals

Importance of Extragenital GC/CT Infections

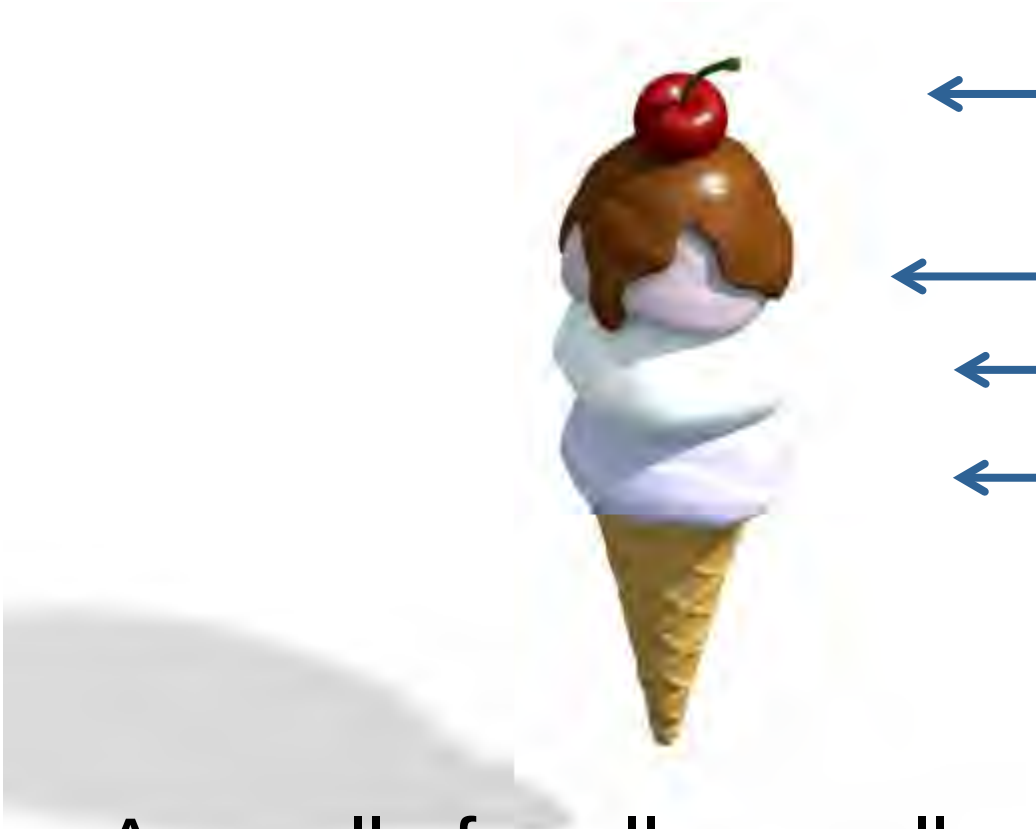
- Transmission
  - 30% of symptomatic gonococcal urethritis is attributable to oro-pharyngeal exposure[1]
- HIV Transmission
  - Can increase risk of acquisition[2-4]
- Treatment can differ
  - Pharyngeal GC[5]
    - Ceftriaxone > Cefixime
  - Rectal CT[6]
    - Doxy >>> Azithromycin
- Most extragenital infections asymptomatic!!

1. Barbee et al, *STI,* 2015; 2. Vaughan, *BMC Med Res Methodol,* 2015; 3. Kelly, *AIDS Res Hum Retroviruses,* 2015; 4. Jin, *JAIDS*, 1999; 5. Moran, *STD* 1995; 6. Kong, *JAC,* 2015

Checking Urine Alone Insufficient in MSM



Don’t forget the triple dip: *STI Screening for MSM*



Annually for all sexually active MSM

Every 3-6 months for MSM at higher risk

STDs predict future HIV Risk among MSM

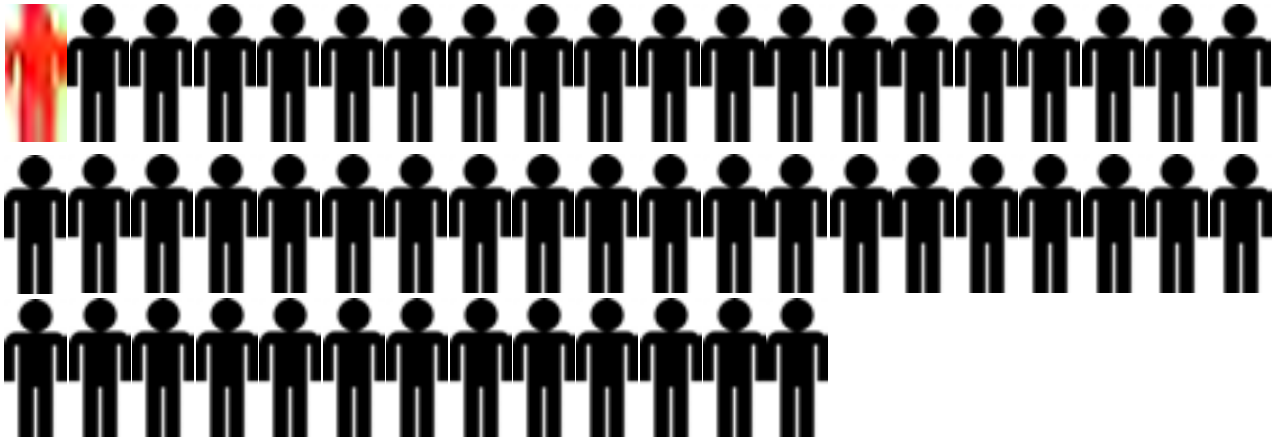
Rectal GC or CT

1 in 15 MSM were diagnosed with HIV within 1 year.*

Primary or Secondary Syphilis

1 in 18 MSM were diagnosed with HIV within 1 year.**

No rectal STD or syphilis infection



1 in 53 MSM were diagnosed with HIV within 1 year.*

**STD Clinic Patients, New York City. Pathela, CID 2013:57;*
***Matched STD/HIV Surveillance Data, New York City. Pathela, CID 2015:61*

What about extragenital screening for women?

- Not routinely recommended by CDC STD Guidelines
  - ***BUT MORE PERMISSIVE LANGUAGE IN THE 2021 GUIDELINES***
  - ***Rectal CT and pharyngeal/rectal GC "can be considered in females based on reported sexual behaviors and exposure, though shared clinical decision…"***
- Meta-analysis of 14 studies of rectal testing[1]
  - Overall 6.0% rectal CT positivity
  - When urogenital CT detected→ 68.1% also rectal positive
  - 2.2% isolated rectal CT
  - Rectal CT not associated with reported anal intercourse
- Can increase rates of chlamydia case-finding
- Should be treated if found

1: Chandra, Sexually Transmitted Infections, 2018

TESTYOURSELF Visual Guides for Self-Collection

Now available in 22 languages!

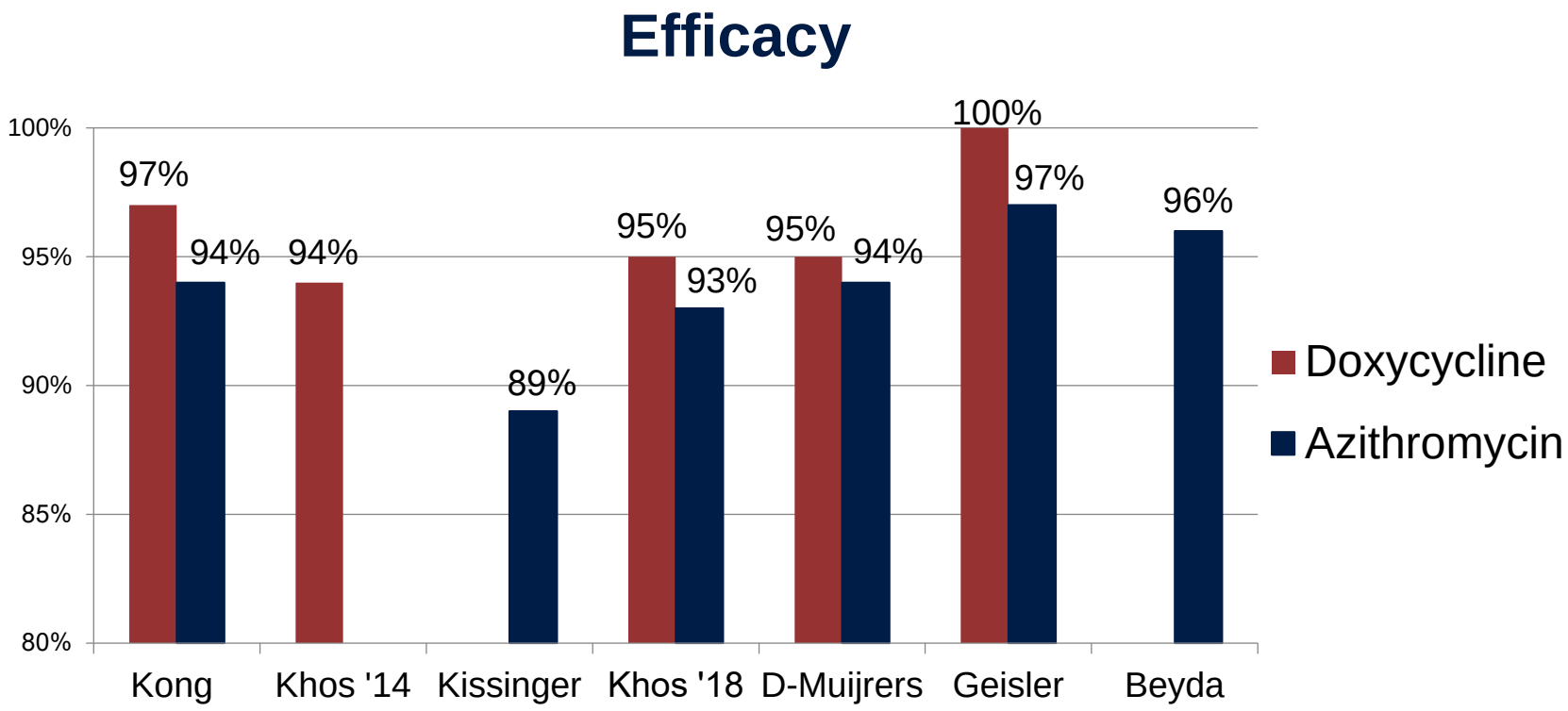
Visit https://www.uwptc.org/visual-guides for free posters for your clinic

Chlamydia: What is the Treatment of Choice?

Routine screening of a 24 yo man who has sex with men returns with rectal chlamydia. What is the best treatment for this?

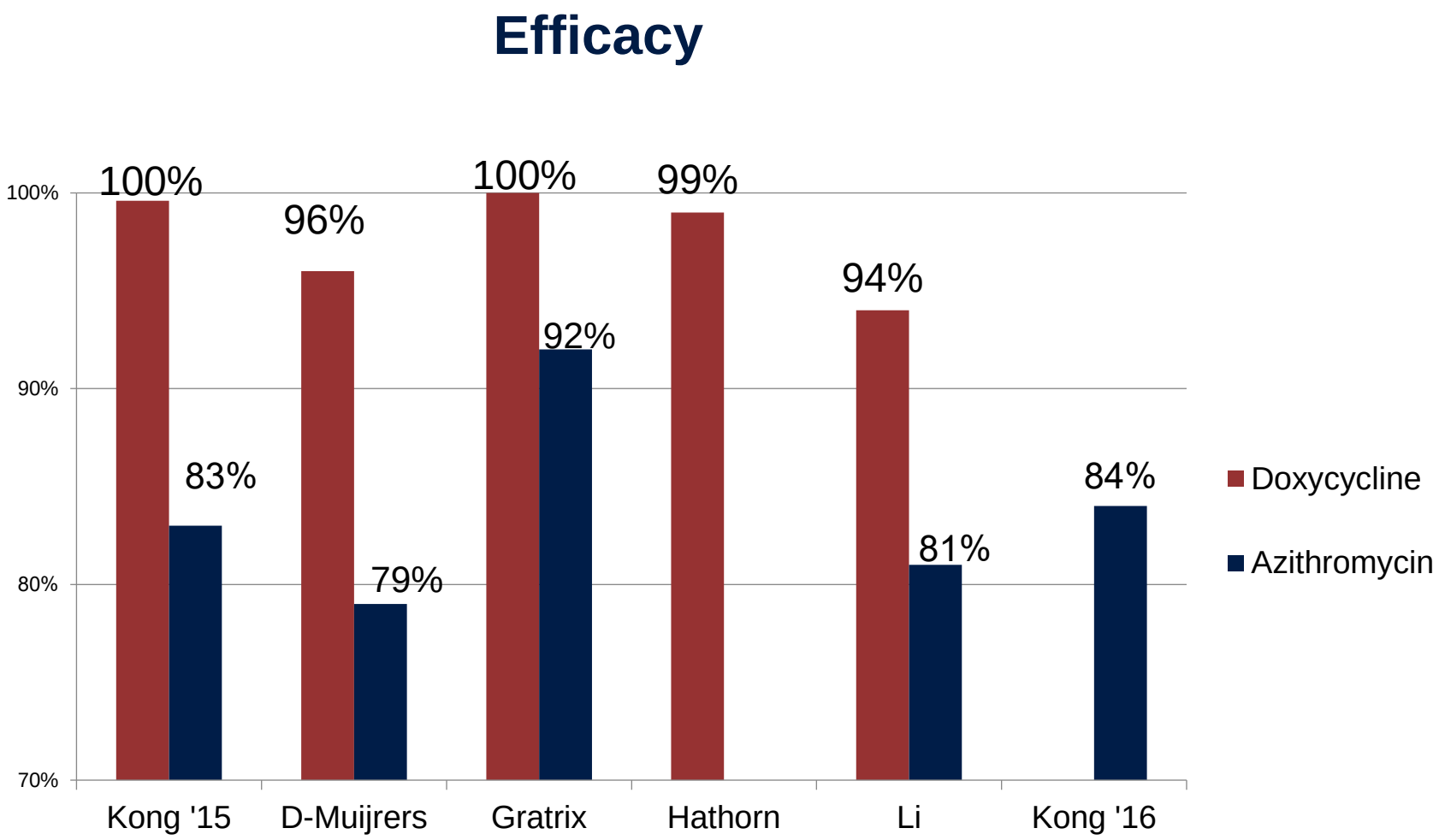
1. Azithromycin 1 gm orally once
2. Doxycycline 100 mg twice daily for 7 days
3. Either is fine

Doxycycline vs Azithromycin for Urogenital Chlamydia



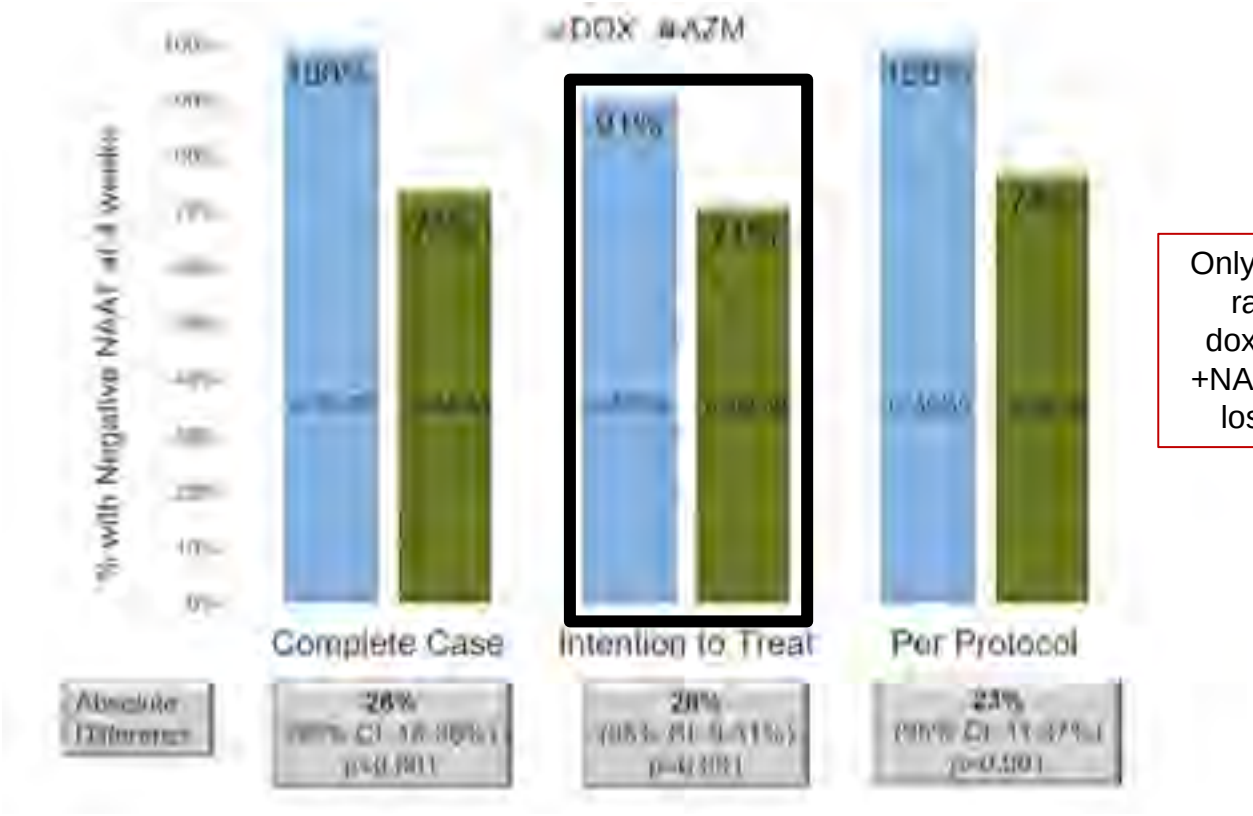
Slide credit: Dr. Will Geisler

Doxycycline vs Azithromycin for Rectal Chlamydia



Slide credit: Dr. Will Geisler

First RCT of Doxycycline vs Azithromycin for Rectal CT: Microbiologic cure at 4 weeks



Only one participant randomized to doxycycline had a +NAAT, other seven lost to follow-up

Dombrowski J et al, CID 2021

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.

Chlamydia Treatment: Pregnancy

Recommended regimen (pregnant*):

- Azithromycin 1 g orally in a single dose

Alternative regimens (pregnant*):

- Amoxicillin 500 mg orally three times a day for 7 days

*** Test of cure at 3-4 weeks only in pregnancy**

But Azithromycin, How We Love Thee…

- Advantages
  - Can be dispensed in clinic, directly-observed therapy
  - Single dose
    - Better for adherence issues
    - More discreet, better for adolescents, confidentiality
    - Better tolerated, fewer adverse effects
  - Safe in pregnancy and breastfeeding

*NOTE: CDC STD Treatment Guidelines are guidance not prescriptive. Clinicians may use judgment with clinical decision making.

Sure feels like there are a lot of changes for me in the 2021 CDC STI Guidelines!

Chlamydia

Just you wait…

Gonorrhea

Gonorrhea:
Fewer Meds…More to Think About

You get a call from the lab telling you that the 38 year old woman you tested for STIs yesterday has a positive gonorrhea NAAT from the vaginal swab. Before deciding on treatment, what do you need to know?

1. Site of infection
2. Patient's weight
3. Drug allergy history
4. Chlamydia test result
5. All of the above

New Gonorrhea Treatment Guidelines

for uncomplicated infections

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

*For persons weighing ≥ 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 for GC 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

New **Alternative** Gonorrhea Treatment

for uncomplicated infections of the cervix, urethra, and rectum **if ceftriaxone is not available**:

Cefixime **800** mg PO x 1

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

Cephalosporin allergy: Gentamicin 240 mg IM + azithromycin 2 g PO

No reliable alternative treatments are available for **pharyngeal** gonorrhea

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

Any downside to the alternative/allergy regimen?

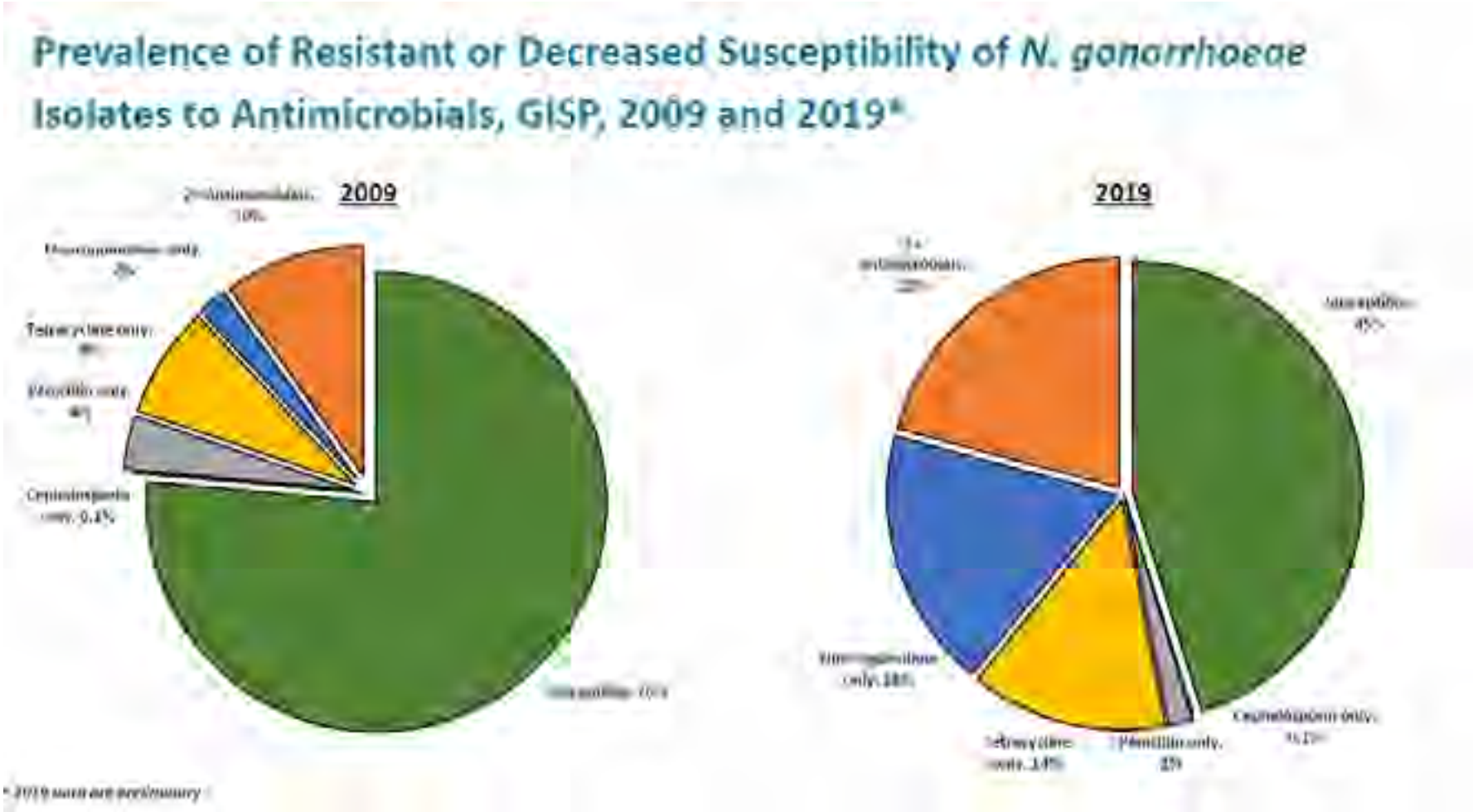
- Nausea was common
  - 27% for gentamicin + azithro
  - 37% for gemifloxacin + azithro
- Also vomiting
  - 3% and 7% in each group vomited <1 hr after administration

Rationale for GC Treatment Changes

- Growing GC resistance
- Antibiotic stewardship
- Pharmacokinetics/pharmacodynamics
- Decreasing efficacy of azithromycin against CT

- And low ceftriaxone resistance in the US…for now

More than half of GC isolates are resistant to at least one antibiotic



Slide courtesy Sancta St. Cyr
National STD Prevention Conference 2020

Expedited Partner Therapy/ Patient Delivered Partner Therapy

A 19 yo man is diagnosed with rectal GC and CT on routine screening. He report sex with 3 men in the past 60 days. What should you do for these partners?

1. Offer cefixime plus azithromycin as patient-delivered partner therapy (PDPT)
2. Offer cefixime plus doxycycline as PDPT
3. Do not offer PDPT

Expedited Partner Therapy (EPT) or Patient-delivered partner therapy (PDPT)

- No states in US prohibit EPT (either allowable or potentially allowable by law/statute in all 50 states)
- Appropriate for partners of patients with GC/CT whose treatment cannot be ensured or is unlikely
  - Not appropriate for syphilis, maybe trichomonas
- Partners in the past 60 days
  - Or if no sex for >60 days, attempt to treat most recent partner(s)
- Previously only recommended for WSM and MSW, due to concerns about missing HIV and syphilis in MSM
  - Now "shared decision making" for EPT for MSM
- Providing patients with packaged oral medications is preferred approach
  - Partners (especially adolescents) may not fill prescriptions

Expedited Partner Therapy (EPT): Big Changes in 2021

- Partners should be highly encouraged to present for testing and treatment
- BUT if partners will not or cannot:

EPT for exposure to GC and CT:
cefixime 800 mg PO x 1 AND doxycycline 100 mg PO x 7 days*

EPT for exposure to GC alone:
cefixime 800 mg PO x 1

EPT for exposure to CT alone:
doxycycline 100 mg PO x 7 days*

*Azithromycin 1 g can be considered but decreased efficacy for rectal CT

Expedited Partner Therapy: What to Include

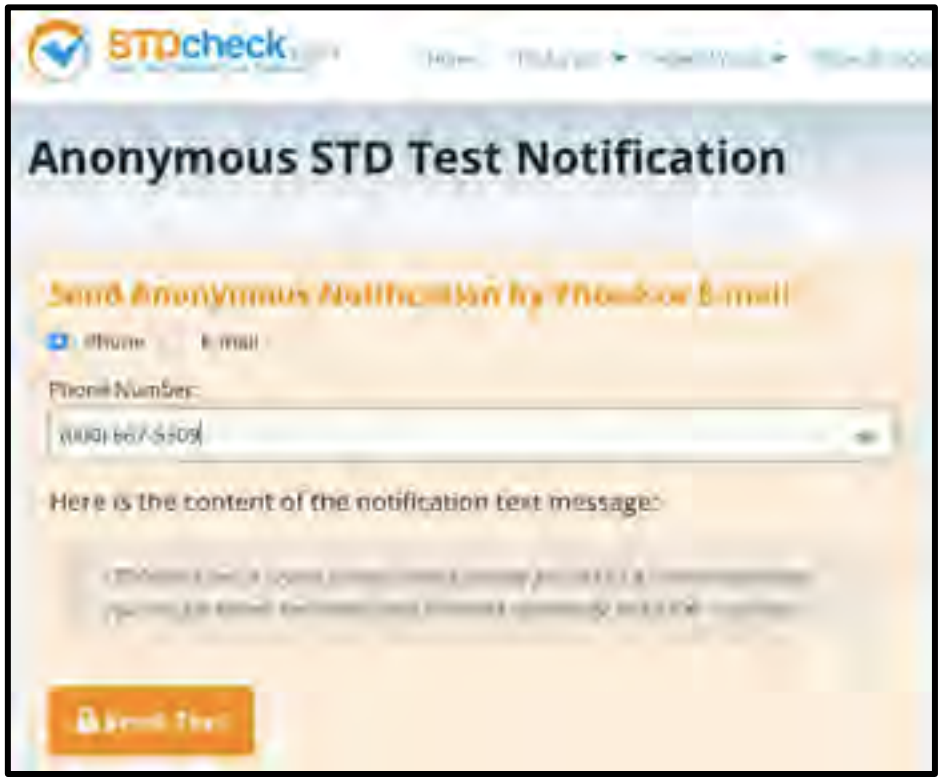
Information provided with EPT

- Information about medications, allergies & STI
- Advice about complications and when and where to seek care (e.g. PID)

- With new recommendation would also counsel about doxy: pregnancy, GI symptoms, photosensitivity

- Best resource for fact sheets I have found from Oregon Health Authority: https://www.oregon.gov/oha/ph/DISEASESCONDITIONS/HIVSTDVIRALHEPATITIS/SEXUALLYTRANSMITTEDDISEASE/Pages/partnertherapy.aspx

How to find anonymous partners met on the internet? Send an email love letter…



https://www.stdcheck.com/anonymous-notification.php

PORTLAND

nationally we're...

#1 for coffee

#1 for fitness

#5 for syphilis

Health

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-SyphAware.org

LANE COUNTY

known for...

organic offerings,

craft beer...

and now, syphilis!

Health

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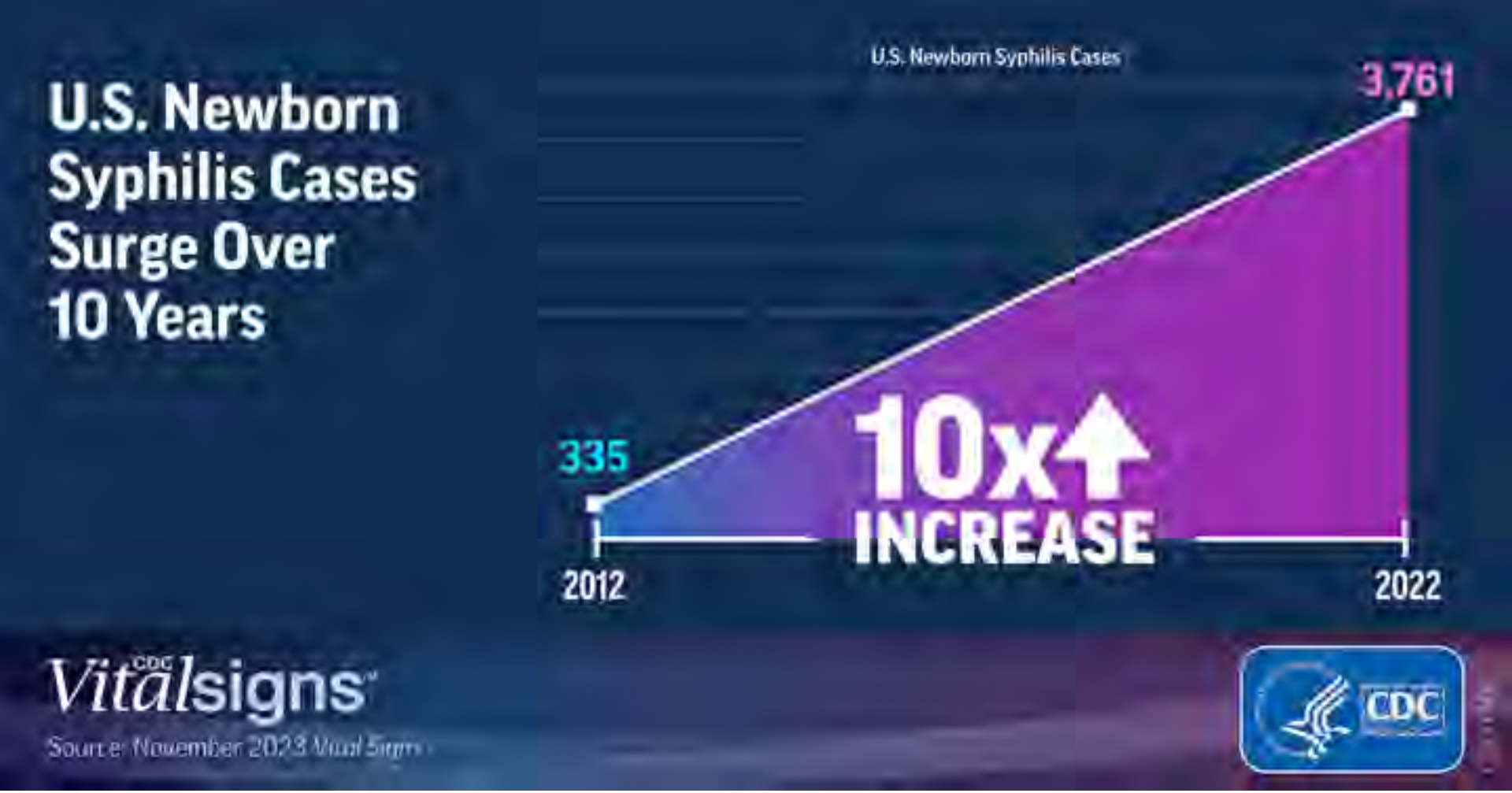
Syphilis:
Congenital Syphilis on the Rise



OHA February 2025:

Congenital Syphilis Crisis in OR

“In 2014, Oregon recorded two cases of CS.
In 2024, that number surged to 45 — a staggering 2,150% increase.”

Syphilis in Pregnancy

- Associated with multiple adverse outcomes:
  - 21% increased risk of fetal loss and stillbirth
  - 6% increased risk for preterm delivery
  - 9% increased risk of neonatal death
  - Fetal growth restriction/low birth weight
  - Fetal Hepatosplenomegaly
  - Hydrops fetalis
  - Congenital syphilis syndromes after delivery

Gomez 2013, Modoro 2021

Syphilis in Pregnancy: Risk Factors

- Multiple sex partners
- Sex in conjunction with drug use or transactional sex
- Late entry to prenatal care or no prenatal care
- Methamphetamine or heroin use
- Incarceration
- Unstable housing or homelessness

40% = no risk factors!
So risk-based screening not enough…

CDC 2021

Which of the following is correct regarding screening for syphilis in pregnancy based on ACOG recommendations?

A. Deciding to screen depends on individual state screening regulations

B. All pregnant patients should be screened at their first prenatal visit, in the early third trimester, and at delivery

C. Only high-risk pregnant patients should be screened

D. Screening for syphilis in pregnancy is too stressful and should only be done if the patient requests it

ACOG: Universal Screening in Pregnancy!

- Screen at <u>first presentation</u> to prenatal care
- Screen in <u>early third trimester</u> (24-28 weeks)
  - Bundle with glucose tolerance testing
  - Can detect seroconversion during pregnancy or re-infection
  - Allows enough time to arrange for treatment if reactive
- Screen <u>at delivery</u>
- Screen in the event of a fetal demise > 20 weeks

- OHA agrees!

https://www.oregon.gov/oha/PH/DISEASESCONDITIONS/HIVSTDVIRALHEPATITIS/SEXUALLYTRANSMITTEDDISEASE/Documents/OHA_Screening_Recommendations.pdf

Additional Screening Recommendations

- **Every visit is a prenatal visit!** Screen pregnant patients with no/limited/unknown prenatal care when they present to:
  - Emergency departments or urgent care clinics
  - Carceral settings
  - Substance use disorder treatment or drug user health programs
  - OB triage

- Screen for infections that may co-occur with syphilis, including HIV, hepatitis B and hepatitis C

Syphilis Treatment Update 2025: Benzathine PCN shortage; No Procaine PCN

- Very limited benzathine (*Bicillin L-A*)
  - Only 1 manufacturer – unclear timeline for return of supply
- Now what?
  - Doxycycline:
    - 100 mg BID x 14 days for early syphilis
    - 100 mg BID x 28 days for latent syphilis
  - Preserve penicillin for those whom penicillin is the only option (pregnant women, babies with congenital syphilis, true allergies to doxycycline)
  - Do not use for strep!

A New Tool in our Prevention Toolbox

A 24 year old MSM on HIV PrEP comes in to be treated for rectal chlamydia found on routine screening. He had secondary syphilis earlier in the year. How would you counsel him to prevent STIs?

1. Always use condoms
2. Get the Hep B and HPV vaccines
3. Have fewer partners and less sex
4. Offer Doxy PEP
5. Just get HIV/STI testing and treatment more often

Are your patients asking you about Doxy PEP?

The New York Times

A New Way to Prevent S.T.I.s: A Pill After Sex

What is Doxy PEP?
And does it work?

- Doxycycline 200 mg taken within 72 hours after condomless sex
  - Maximum 200 mg every 24 hours

- In three large randomized controlled trials, Doxy PEP **reduced syphilis and chlamydia infections by >70% and gonococcal infections by approximately 50%**

- Studied primarily in people with penises with ≥1 bacterial STI in the past year

- What concerns might you have?

Luetkemeyer et al, NEJM 2023

Doxy PEP – How to Take

= sex without a condom, including oral sex

Two 100mg pills of doxycycline ideally <u>within 24 hours</u> but no later than 72 hours after condomless sex

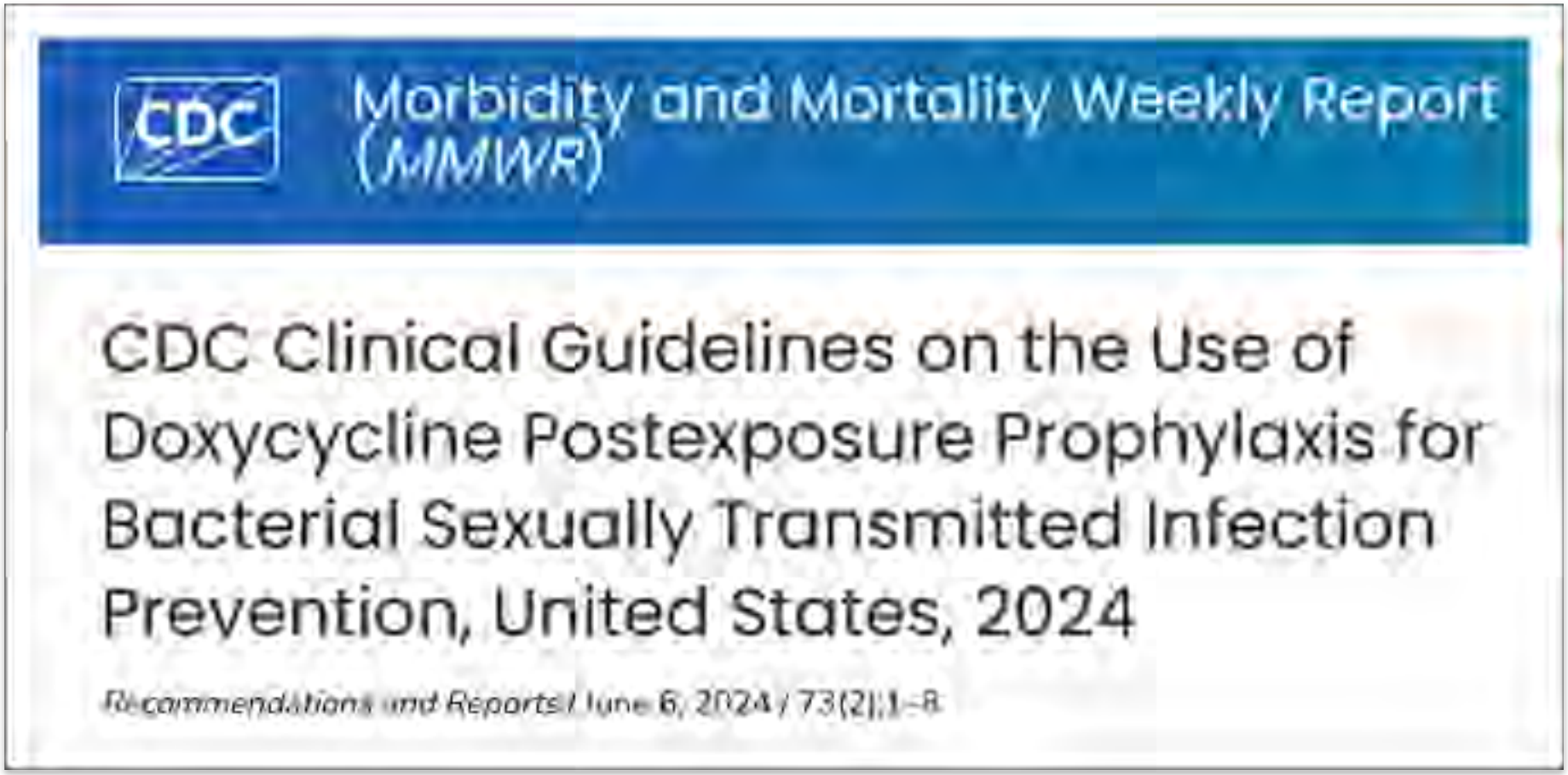
Example: Sex on Thursday; take dose of doxy by Sunday

Example 2: Daily (or more) sex Sat Tues; take daily dose of doxy and last dose within 24 hours *but not later than 72 hours* after last sex

***No more than* 200 mg every 24 hours**

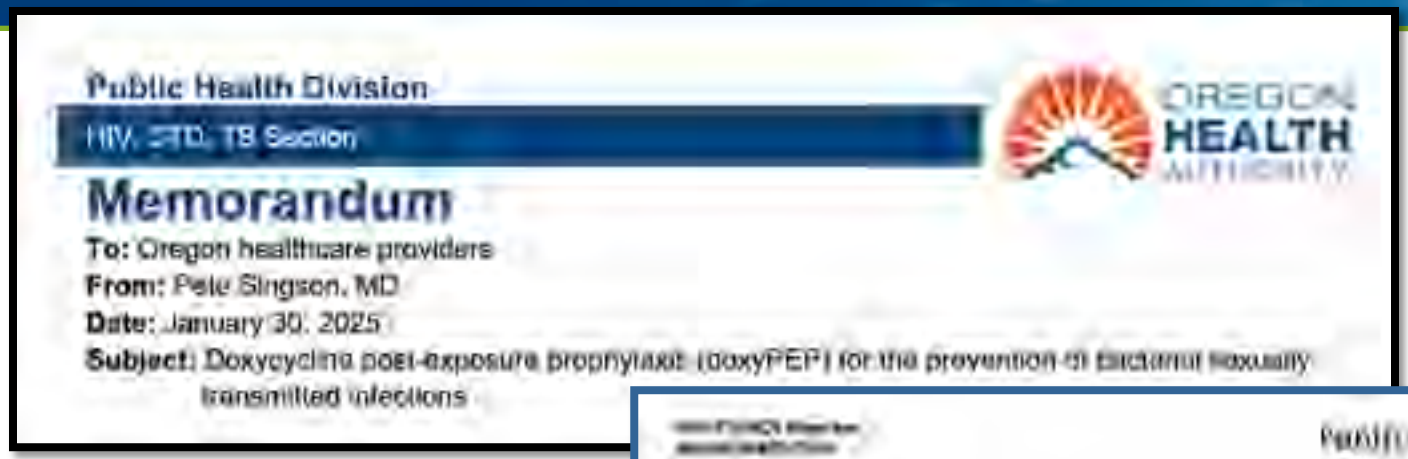
San Francisco City Clinic: https://media.api.sf.gov/documents/doxypep__dosing_.1.pdf

CDC Doxy PEP Guildelines Released June 4, 2024



https://www.cdc.gov/mmwr/volumes/73/rr/rr7302a1.htm

Doxy PEP Local Guidelines


Public Health Division

HIV, STD, TB Section

OREGON HEALTH AUTHORITY

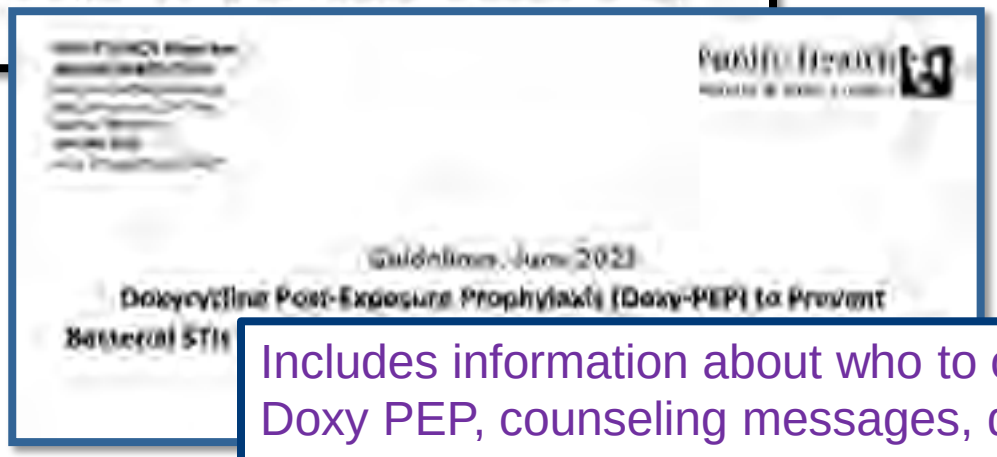
Memorandum

To: Oregon healthcare providers

From: Pete Singson, MD

Date: January 30, 2025

Subject: Doxycycline post-exposure prophylaxis (doxyPEP) for the prevention of bacterial sexually transmitted infections


Guidelines, June 2023

Doxycycline Post-Exposure Prophylaxis (Doxy-PEP) to Prevent Bacterial STIs

Includes information about who to offer Doxy PEP, counseling messages, dosing and prescribing recs, billing codes, lab monitoring. Also a fantastic fact sheet for patients!

https://cdn.kingcounty.gov/-/media/depts/health/communicable-diseases/documents/hivstd/DoxyPEP-Guidelines.ashx

https://cdn.kingcounty.gov/-/media/depts/health/communicable-diseases/documents/hivstd/DoxyPEP-facts.ashx?la=en&hash=47631D55F34D12F6896792E2B0E975EF

https://www.oregon.gov/oha/PH/DISEASESCONDITIONS/HIVSTDVIRALHEPATITIS/SEXUALLYTRANSMITTEDDISEASE/Documents/doxyPEP_Dear_Colleague_Singson_30Jan25.pdf

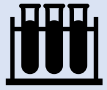
DoxyPEP: What we are still learning

- STI resistance, and will it make DoxyPEP less effective? Especially GC and syphilis
- Effect on M. genitalium
- Impact on bystander bacteria like Staph aureus, commensal Neisseria, and the gut microbiome
- Adherence, sexual behavior…

Monitoring on DoxyPEP

Laboratory

- No serious lab abnormalities in Doxy PEP
- Package insert: LFTs, renal function & CBC checked “periodically” when taking doxycycline for a prolonged period
- Take home:
  - No baseline labs needed
  - Consider checking annually



STIs

- Screen for STIs every 3 months at all anatomic sites of exposure
  - *Can we screen less frequently? May depend on patient factors*
- If diagnosed with an STI on Doxy PEP, treat according to the CDC STI treatment guidelines

Additional Counseling Messages

- Side effects: photosensitivity, esophagitis, nausea, vomiting, and diarrhea
- Potential for antimicrobial resistance and changes in the microbiome
- Take doxycycline on a full stomach with a full glass of liquid and avoid lying down for 1 hour to prevent esophagitis.
- Separate doxycycline by at least 2 hours from dairy products, antacids, and supplements that contain calcium, iron, magnesium, or sodium bicarbonate

PERSISTENT URETHRITIS: FEEL THE BURN

A Case of Persistent Urethritis

An 56 yo man diagnosed with urethritis and treated with ceftriaxone and doxycycline x 7 days is still complaining of ongoing dysuria. CT/GC testing comes back negative.

What questions do you have for him?

What could be causing this?

Differential Diagnosis of Urethritis

Gonococcal Urethritis

- Neisseria gonorrhoeae

Non-Gonococcal Urethritis (NGU)

- Chlamydia trachomatis (15-40%)
- Ureaplasma urealyticum
- Mycoplasma genitalium (15-40%)
- Trichomonas vaginalis
- Herpes simplex virus
- Adenovirus
- Other enteric bacteria
- Neisseria meningitidis

Mycoplasma genitalium

- Slow growing bacteria, but does not gram stain
- Causes urethritis & cervicitis, PID less clear
- **No recommendations for routine screening**
- **2021 STD guidelines reserve testing for persistent/recurrent urethritis that fails treatment, consider for persistent cervicitis/PID**
- 2019 FDA approved Mgen NAAT (*Aptima*)
- Macrolide (i.e. azithro) & doxy resistance, some quinolone
  - Macrolide resistance tests may be available to guide therapy soon
- Ureaplasma and other mycoplasma species of unclear significance
  - Testing/treatment not recommended
  - Extragenital testing not recommended
  - Do NOT routinely screen in pregnancy!

https://www.hologic.com/hologic-products/diagnostic-solutions/aptima-mycoplasma-genitalium-assay

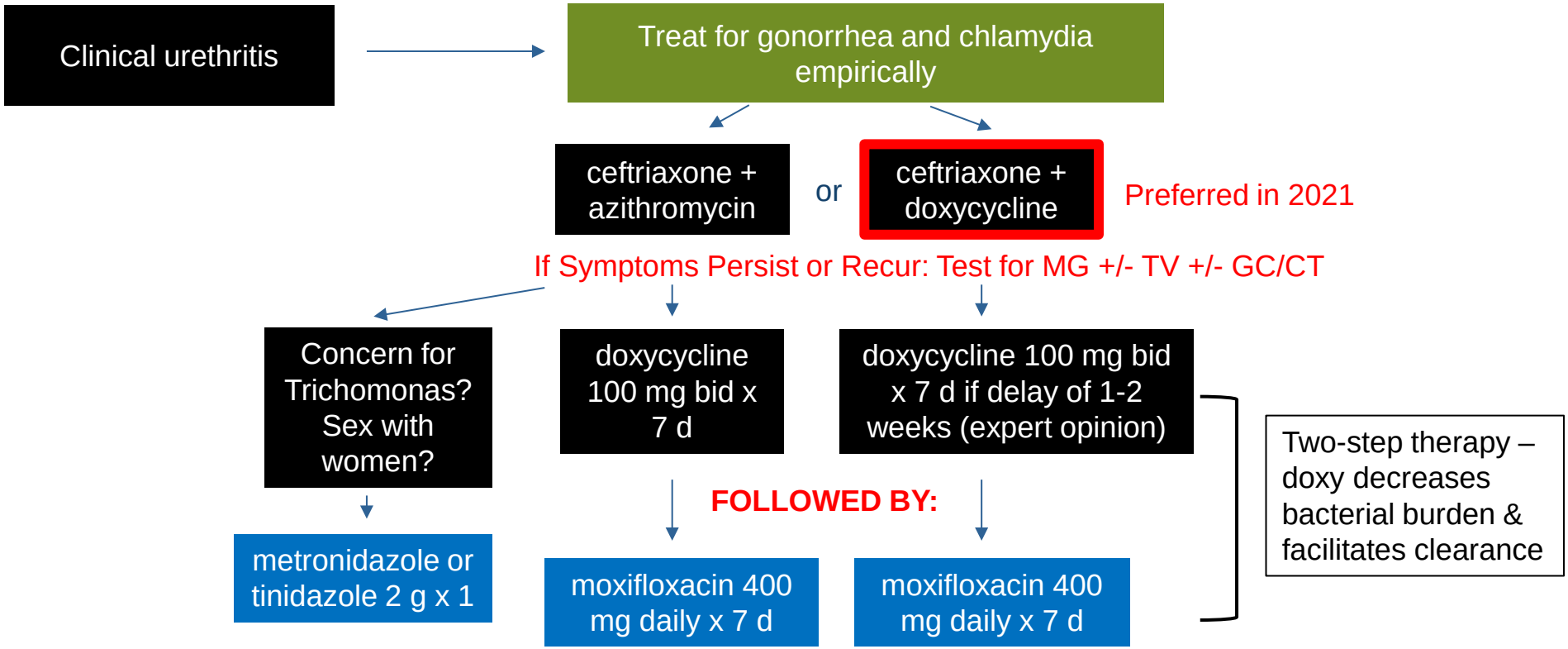
Prevalence of Key Pathogens among Men with Symptomatic Urethritis

Study Site (n)	*Gonorrhea*	*Chlamydia*	*M. genitalium*	*Trichomonas*
Birmingham, AL (n=235)	33%	23%	30%	7%
Durham, NC (n=93)	42%	32%	25%	8%
Greensboro, NC (n=152)	43%	29%	39%	10%
New Orleans, LA (n=103)	37%	25%	29%	2%
Pittsburgh, PA (n=174)	26%	27%	28%	12%
Seattle, WA (n=157)	35%	25%	29%	2%
Overall	**35%**	**25%**	**29%**	**7%**

More than 1 in 4 men with urethritis have *M. genitalium*

Bachmann LH, CID 2020

2021 Urethritis Treatment: Initial and Persistent/Recurrent



- **MG macrolide resistance testing may change some of these guidelines, but not yet currently available in US.**
- **If macrolide sensitive, after doxycycline course, give azithromycin 1 g, then 500 mg daily x 3**

Who Needs a Test of Cure and Who Needs Retesting?

Test of Cure vs Retesting

RETEST FOR REINFECTION	Time period	Who
GC/CT/LGV (all sites)	3 m (anytime from 1-12 m ok)	All patients
Trichomonas	3 m (anytime from 1-12 m ok)	Patients w/vaginal infection

TEST OF CURE	Time period	Who
GC (pharynx)	2 weeks	All patients
CT* (cervix)	4 weeks	Pregnant patients only

*Test of cure for GC in pregnancy not mentioned in the guidelines but experts recommend TOC in this setting

A few rapid fire updates!

- PID: Metronidazole no longer considered optional
- Trichomonas: 7 days of metronidazole, regardless of HIV, no longer need to avoid alcohol
- Gonorrhea prevention: Meningitis B vaccine?

National STD Curriculum
http://std.uw.edu

Syphilis management? Resistant gonorrhea? STD treatment?

GOT A TOUGH STD QUESTION?

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- We are just a click away! www.STDCCN.org

Any *Burning* Questions?

Thank you!!

Hillary Liss
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206-744-1035

EXTRA SLIDES

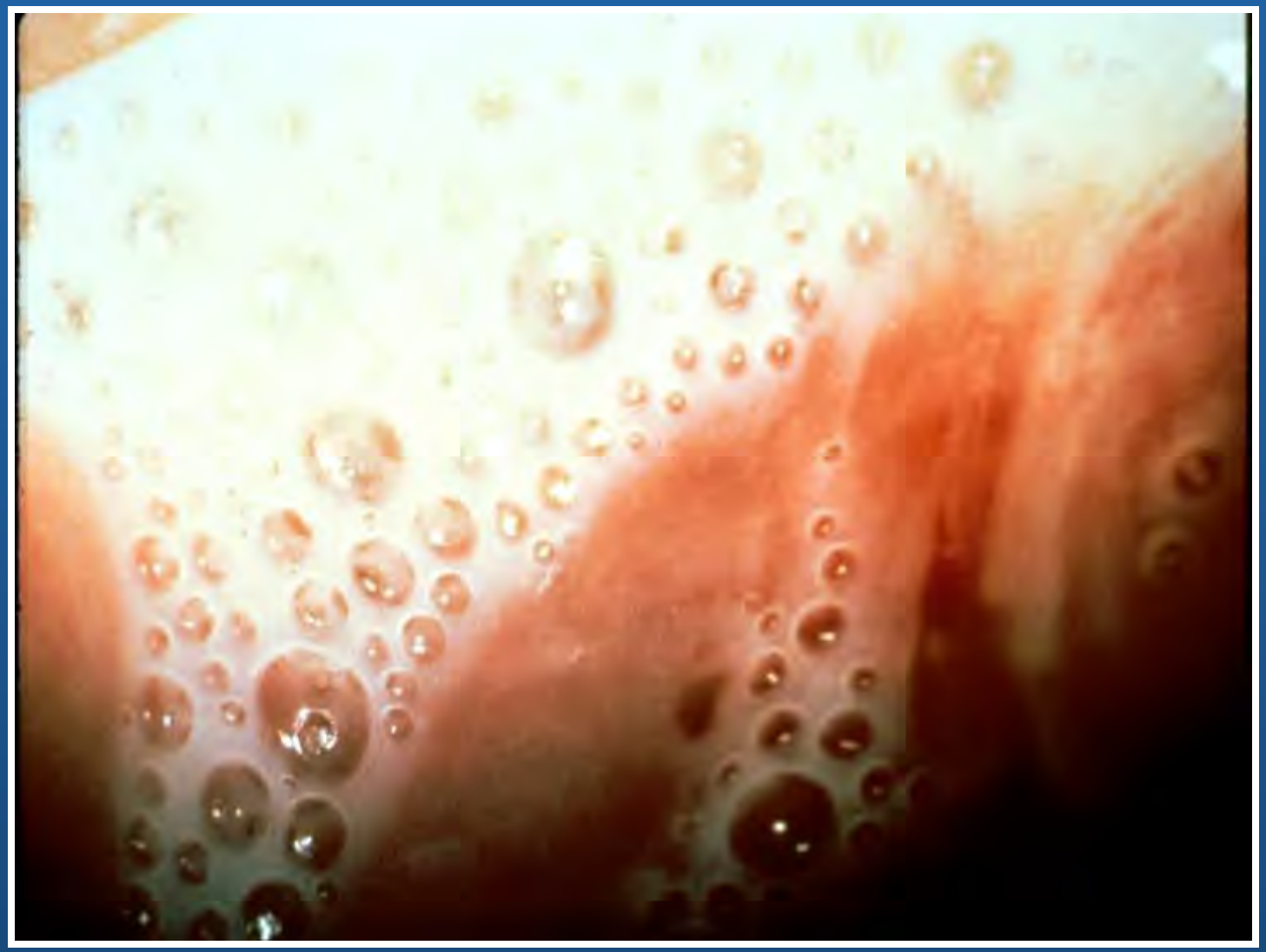
TRICHOMONAS

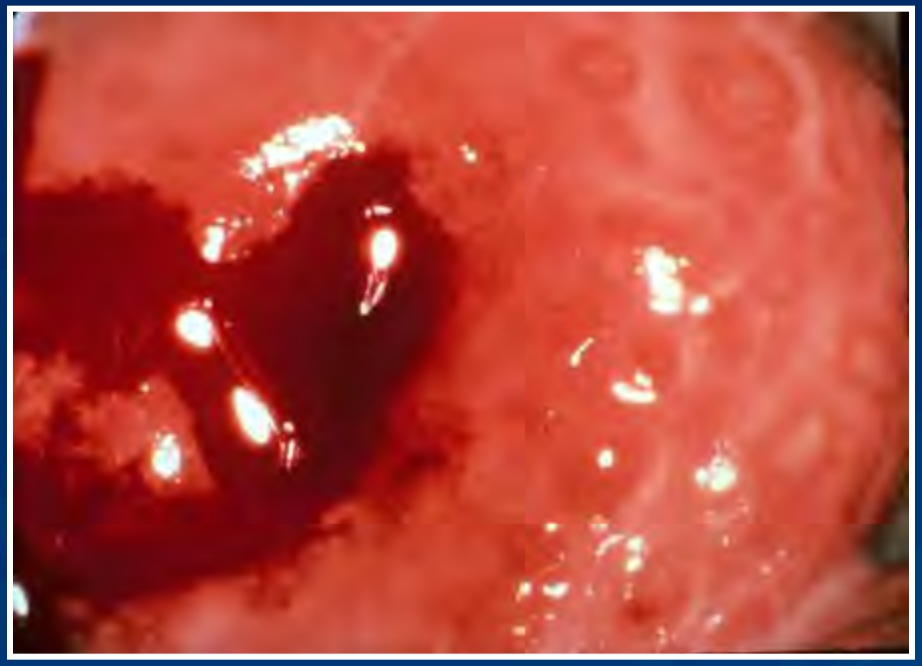
Courtesy of John Alderete, Ph.D.

A 56 year old woman tells you she has had some yellow-green vaginal discharge with a strong odor, and she would like it to go away. She denies sexual activity of any kind for over 5 years. Urine NAAT is positive for trichomonas. How should you treat her?

1. Metronidazole 2 gm orally once
2. Metronidazole 500 mg orally twice daily for 7 days
3. It depends whether she has HIV or not
4. No treatment needed

Typical frothy, yellowish vaginal discharge of trichomoniasis

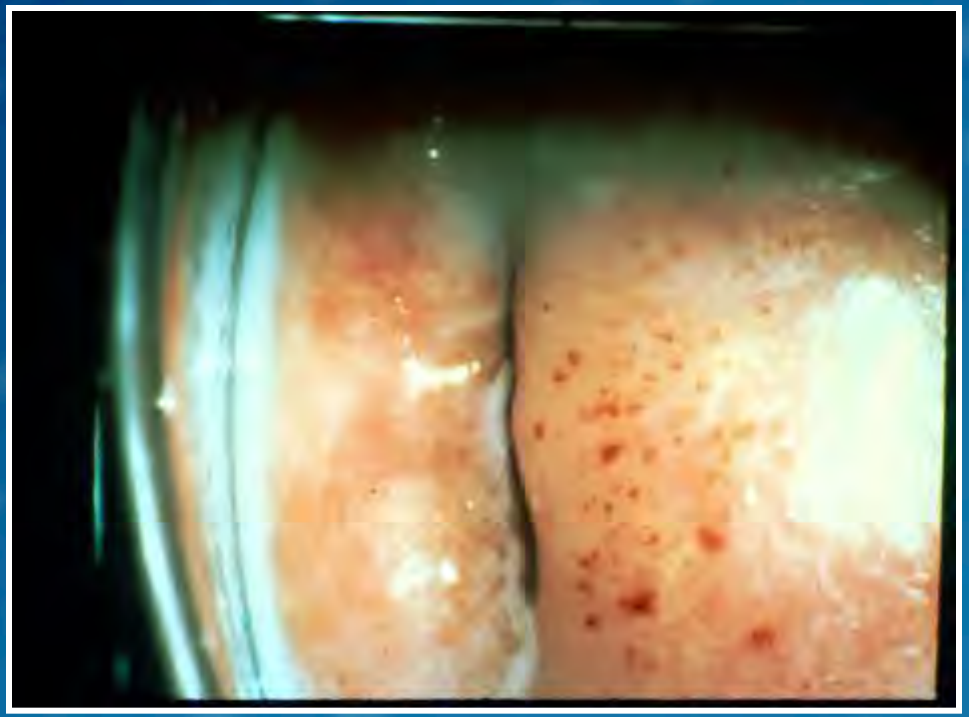




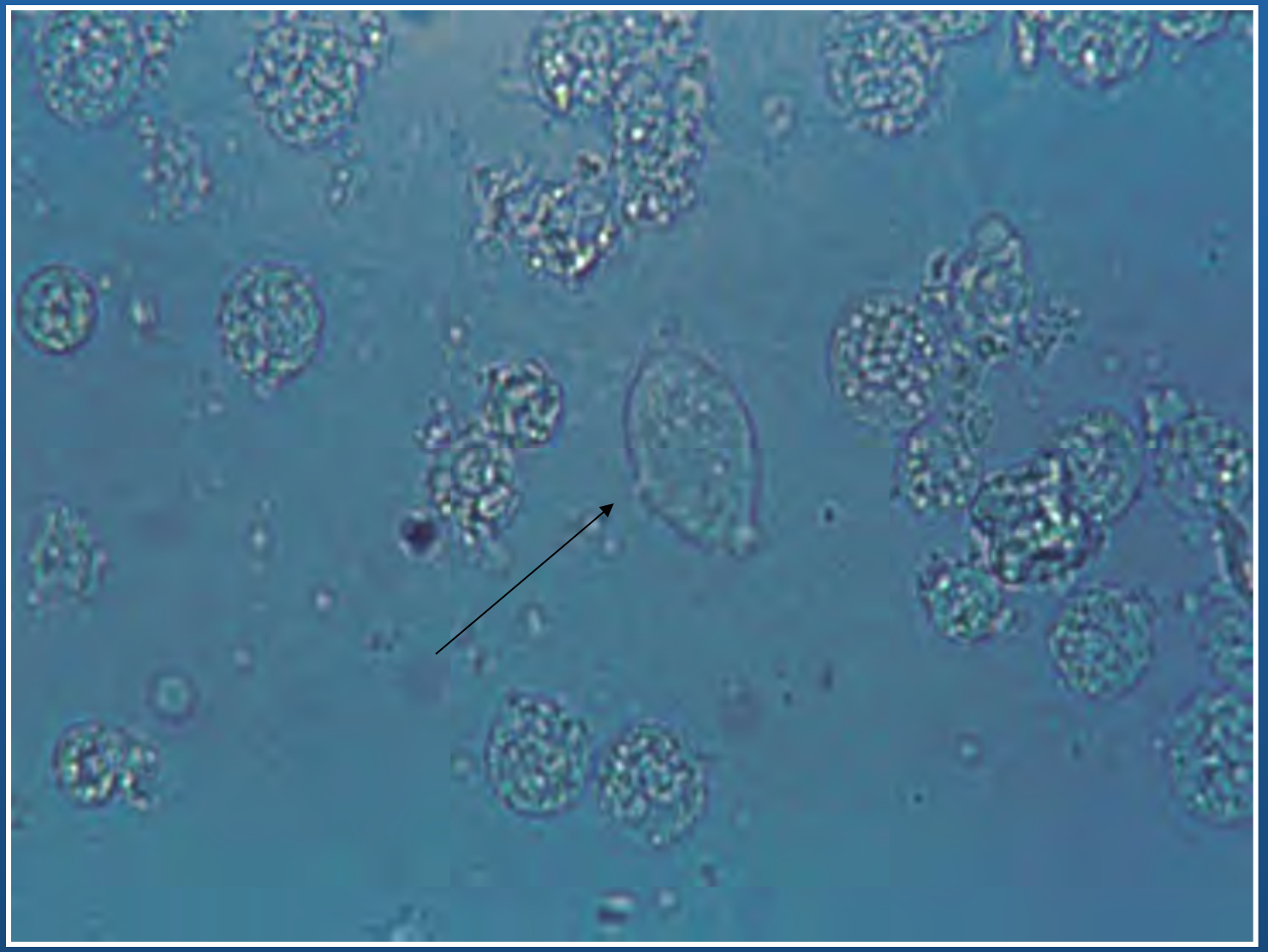
Cervicitis due to *Trichomonas vaginalis*

Strawberry cervix

“Colpitis macularis”



Saline microscopy of *Trichomonas vaginalis* with PMNs



Trichomoniasis: The “Neglected STI”

- Under appreciated—most common nonviral STD in US
  - (4-8 million new cases/yr estimated)
- Not reportable in U.S.
- Wider age distribution of 20-45 y
- Very high rates in women (9-32%) & men (2-9%) who are incarcerated
  - 17% in WA DOC pilot screening program at women’s intake (2016)
- 70-85% asymptomatic, may persist for years
- Can lead to pre-term delivery, low birth weight, PID
- Worldwide implications - multiple studies show 2-3 fold higher acquisition of HIV

Muzny C, CID 2015; Soper D, AJOG 2004; NHANES, Sutton, CID 2007.

T. vaginalis screening/diagnostic testing

Screening for *T. vaginalis* is recommended for

- Women with HIV (entry to care, then annually)
- Women in correctional settings
- Consider for other high prevalence settings
- Screening for men is not recommended
  - Rare in MSM
- Extragenital *T. vaginalis* is rare
  - Rectal and oral testing is not recommended!!

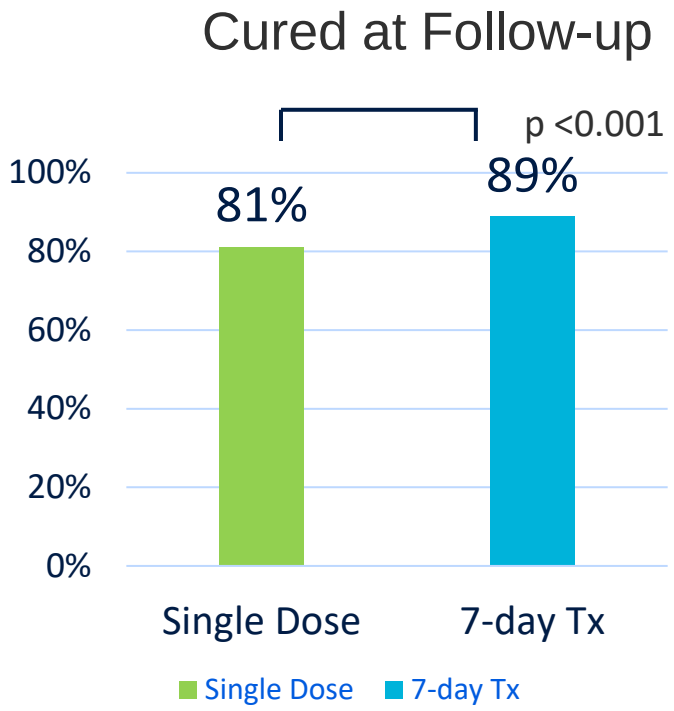
Diagnostic testing: Patients with vaginal discharge

Multiple FDA-cleared NAAT and rapid tests

- Urine, urethral, endocervical (including liquid cytology), vaginal
- Not all tests are approved for men

Treatment Consideration: Single dose metronidazole is not as effective as 7 days

- Single dose (2 gm) previously recommended for trich in women without HIV, 7-day therapy (500 mg BID) recommended with HIV
- N=623 women randomized 1:1 to single dose MTZ vs 7 day
- Test of Cure: culture 6-12 days post treatment



Kissinger, 2018 Lancet Infect Dis

Trichomoniasis Treatment 2021

Change in 2021 STI Treatment Guidelines

Vaginal trichomonas (HIV+/HIV-/pregnant)

Metronidazole 500 mg PO BID x 7d

Penile/urethral trichomonas or male partners

Metronidazole 2 g PO single dose

Alternative regimen

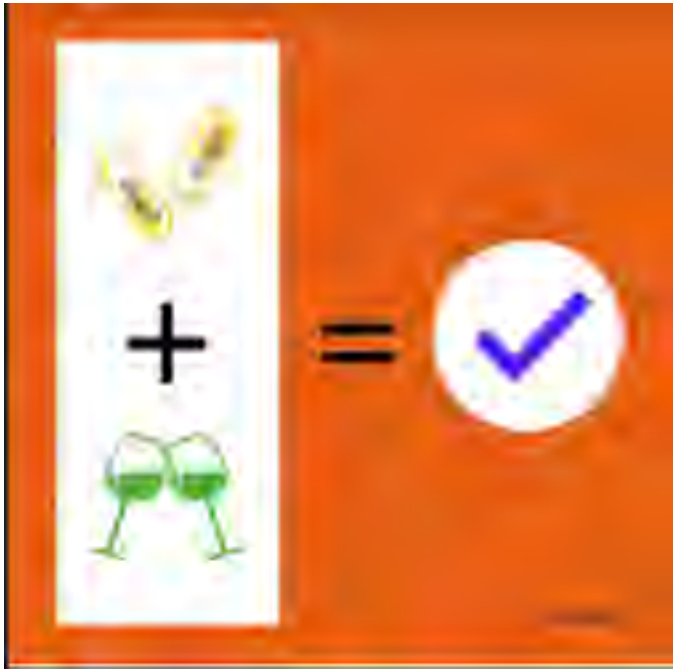
Tinidazole 2 g PO single dose

CDC 2015 STD Treatment Guidelines,
ACOG Practice Bulletin 215. OB/GYN Vol 135. Jan 2020

Metronidazole and Alcohol

- Metronidazole does not actually inhibit acetaldehyde dehydrogenase (as occurs with disulfiram)
- Evidence review: no in vitro or clinical studies, no animal models, and no adverse event reporting
- Refraining from ETOH is unnecessary during treatment

Change in 2021 STI Treatment Guidelines



2021 CDC STI Treatment Guidelines
Fjeld H, Raknes G. Tidsskr Nor Laegeforen. 2014;134(17):1661–3

Lymphogranuloma venereum (LGV)

- Testing for proctocolitis:
  - Test with CT NAAT→ should be positive
  - Additional molecular testing (PCR based genotyping) can be used to differentiate LGV vs. non LGV strains but not commercially available nor timely

- Clinical syndrome of severe proctocolitis:
  - Presumptive treatment (doxy 100 mg bid x 21 d)
  - If painful perianal ulcers or mucosal ulcers (anoscopy) → HSV swab and presumptive therapy for herpes
  - *Emerging data about using doxy x 7 days or azithro weekly x 3, but no change in recs*

Pelvic Inflammatory Disease

A Case of Pain Down Under

A 21 yo woman presents with:

- Dysuria, mild lower abdominal pain especially with vaginal intercourse, fatigue, low-grade fever x 3 days
- Vaginal spotting
- 6 partners in the past 6 months; most recent new partner 2 weeks ago, has LNG-IUD in place x 3 years
- Exam: spontaneous bleeding from endocervical canal, and mild tenderness when cervix is moved. Urine dipstick is positive for leukocyte esterase. Many WBCs on wet prep.

Acute PID

Empiric treatment for acute PID in sexually active young women and other women at risk for STIs if experiencing:

- pelvic/lower abdominal pain
- no other cause can be identified
- if one or more of three minimum criteria present on pelvic exam:
    - cervical motion tenderness
    - uterine tenderness
    - adnexal tenderness

The absence of mucopurulent cervical discharge and WBCs on wet prep of vaginal fluid makes PID very unlikely

PID Outpatient Treatment: Should Metronidazole be used routinely?

- Randomized Controlled Trial (N=233 women)
- Ceftriaxone 250 mg IM **plus** Doxycycline 100 mg PO BID x 14 days **plus**
  - Metronidazole 500 mg BID x 14 day **OR**
  - Placebo BID X 14 day
- Primary outcome: Clinical improvement 3 days
- Additional outcomes: Anerobic organisms in endometrium at 30 days, fever, CMT reduction

Wiesenfeld et al. CID 2021

Metronidazole No Longer Considered Optional in PID

- Clinical improvement at 3 days similar between two arms
- But metronidazole
  - Reduced anaerobes in endometrium (8% vs 21%, $p<0.05$)
  - Reduced M. genitalium (cervical) (4% vs 14%, $p<0.05$)
  - Reduced CMT/pelvic tenderness (9% vs 20%, $p<0.05$)

- **Conclusion: Metronidazole should be routinely added for PID RX**

Wisenfeld et al. CID 2021

She declines hospitalization or a shot for probable PID. What could you consider using?

1. Levofloxacin 500 mg PO daily x 2 weeks
2. Moxifloxacin 400 mg PO daily x 2 weeks
3. Metronidazole 500 mg PO BID x 2 weeks
4. Azithromycin “Z-pack” x 5 days

2021 CDC STD Treatment Guidelines
PID: Alternative Outpatient Regimens

Azithromycin 500 mg IV daily x 1-2 days, followed by 250 mg PO x 12-14 days

With

Metronidazole 500 mg BID x 12-14 days

Moxifloxacin 400 mg daily x 14 days alone

OR

Levofloxacin 500 mg daily x 14 days

With

Metronidazole 500 mg BID x 14 days

Does the IUD need to come out?

1. Yes
2. No
3. I have no idea
4. Are we done yet?

PID and IUDs

- PID risk increased 6x within the first 21 days of placement, but after 21 days, the risk returns to baseline
- If active PID, cervicitis or documented GC/CT, do not insert IUD
- Rates of PID among new IUD users were ≤1% regardless if positive for GC or CT at insertion
- If no clinical evidence of GC/CT, women can have IUD inserted and STD screen on the same day
- **If PID diagnosed and IUD already in place→ can leave IUD**
  - **Reassess in 48-72 hr and if no improvement→ consider removal**

Carr S, et al J Adolesc Health. 2013;52:S22-8. Curtis KM, et al. U.S. Medical eligibility criteria for contraceptive use, 2016. MMWR Recomm Rep. 2016;65:1-103. Birgisson NE, et al. J Womens Health (Larchmt). 2015;24:354-9. Turok DK, et al. Am J Obstet Gynecol. 2016;215:599.e1-599.e6. National STD Curriculum, accessed February 9, 2018.