UWTASP

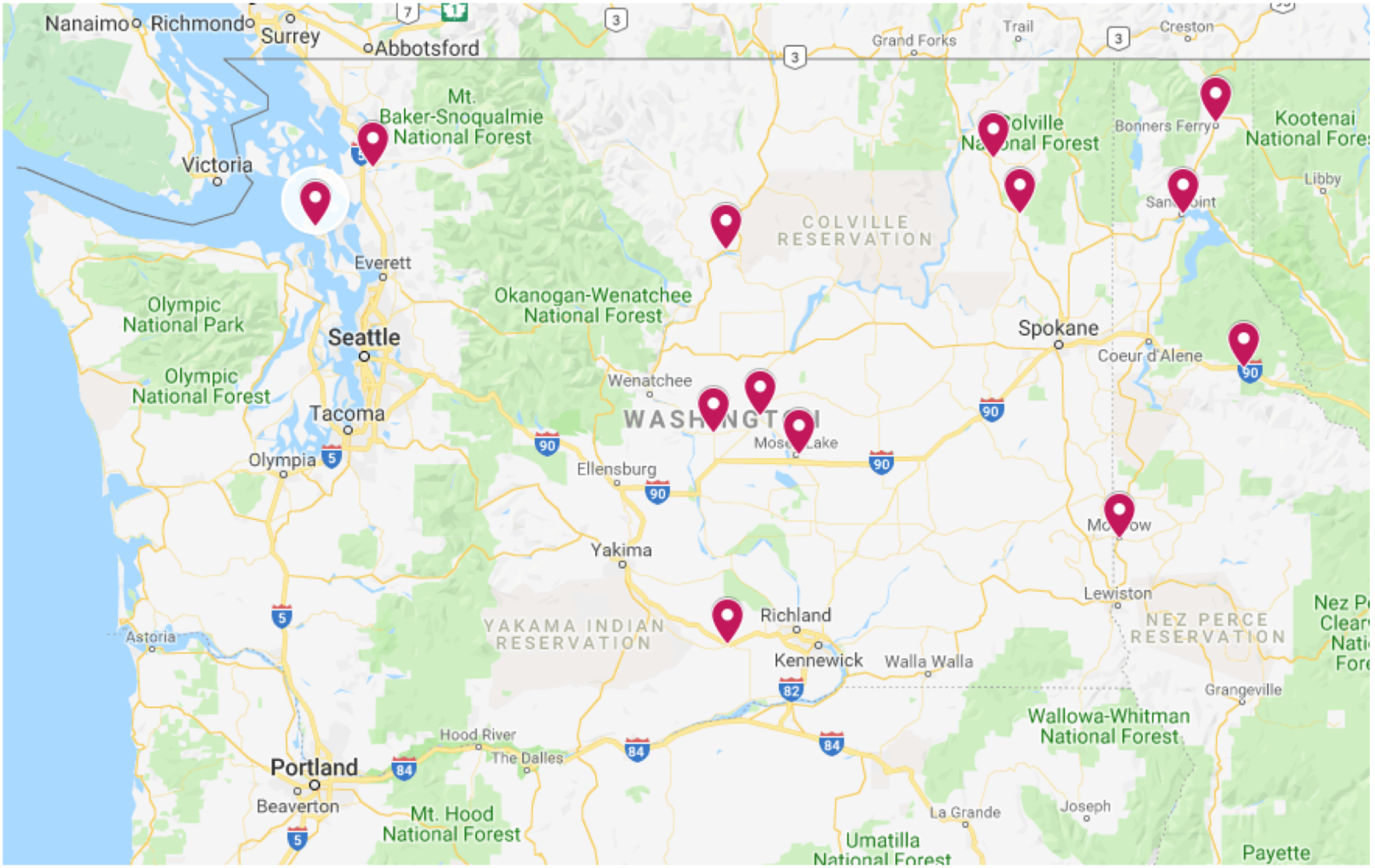
tele-antimicrobial stewardship program

April 23rd, 2019

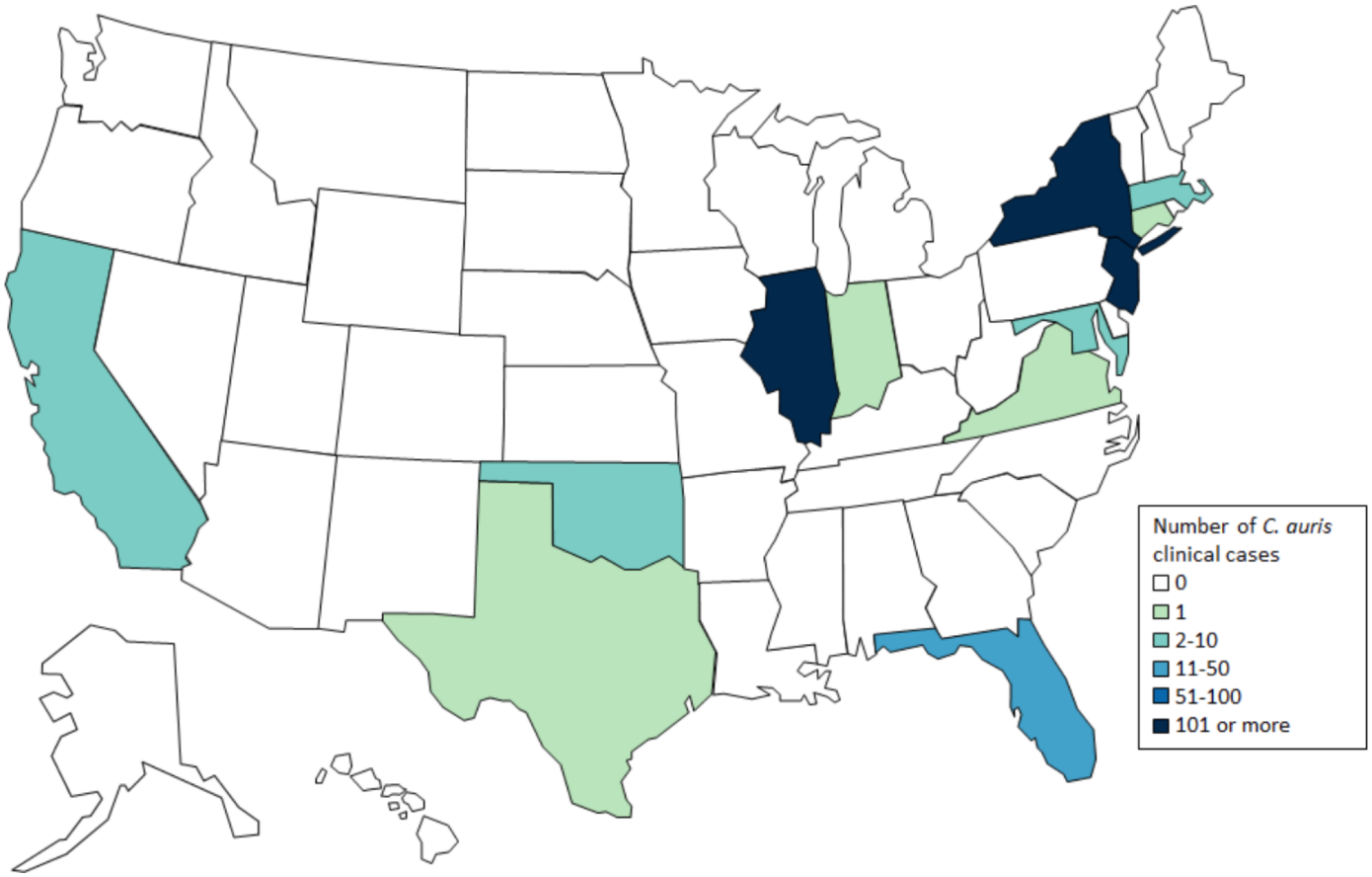
Announcements

- TASP Conference
- Noon session
- Outbreaks update

TASP NOON SESSION



U.S. Map: Clinical cases of *Candida auris* reported by U.S. states, as of February 28, 2019



Source: CDC

UWTASP

tele-antimicrobial stewardship program

January 23rd, 2019

Agenda

- Didactic: *Sexually Transmitted Infections*
- Case Discussions

UWTASP

tele-antimicrobial stewardship program

Gonorrhea, Chlamydia, Syphilis and Partner Treatment

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UW Medicine

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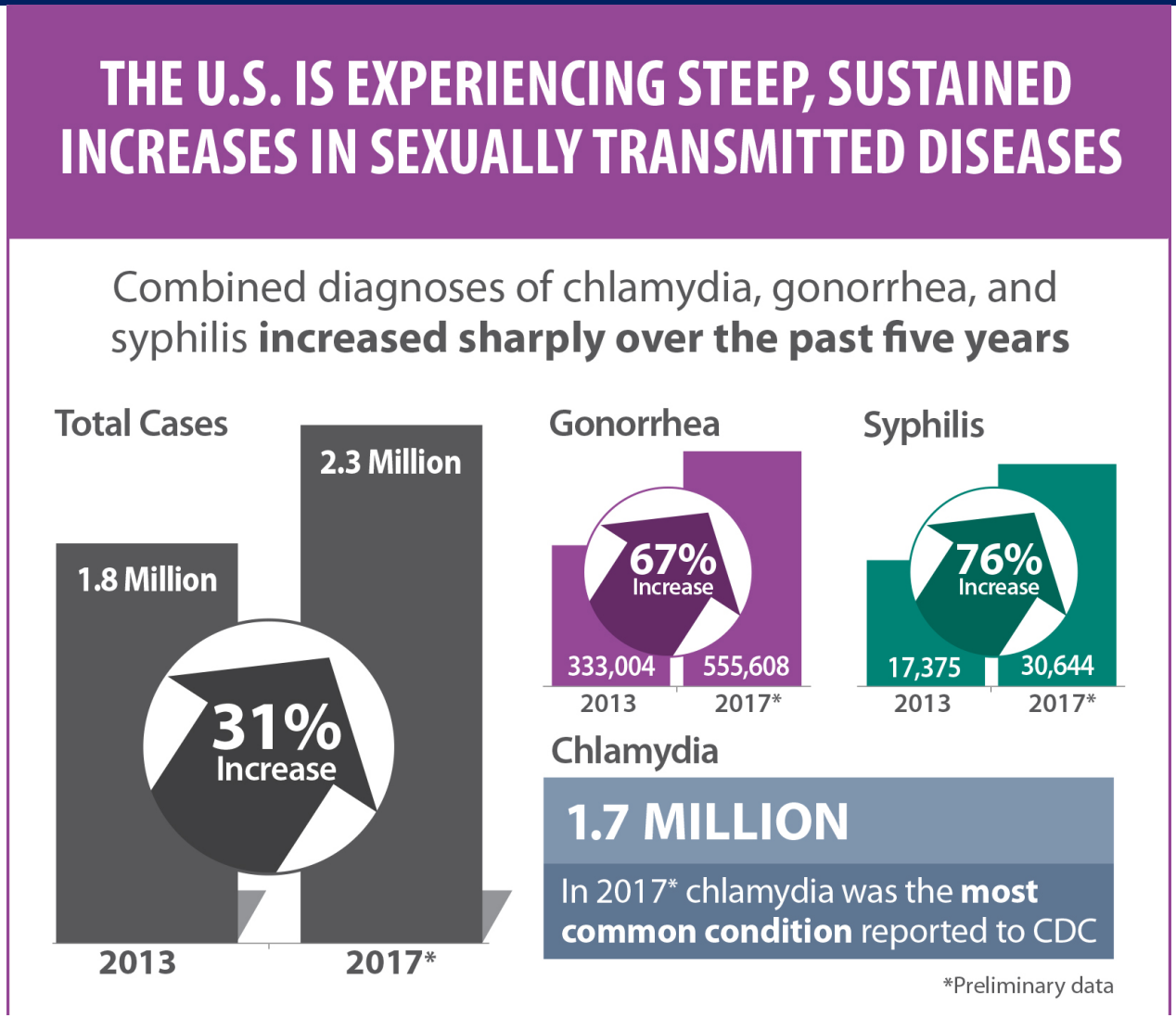
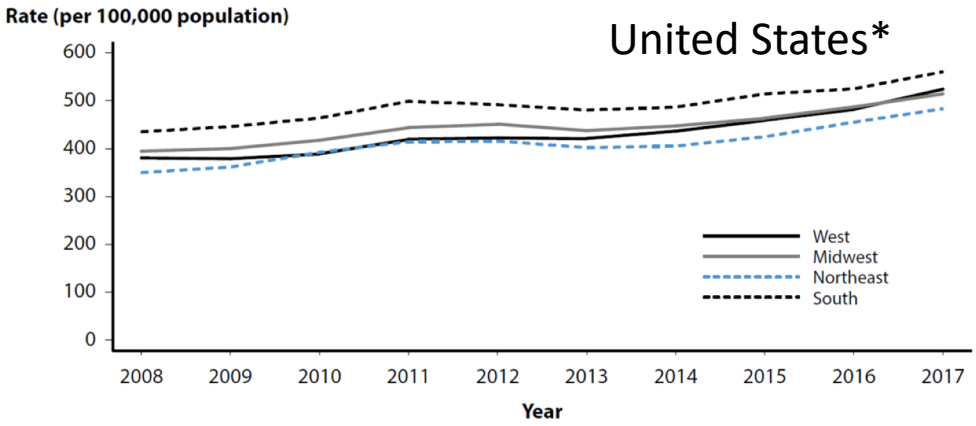
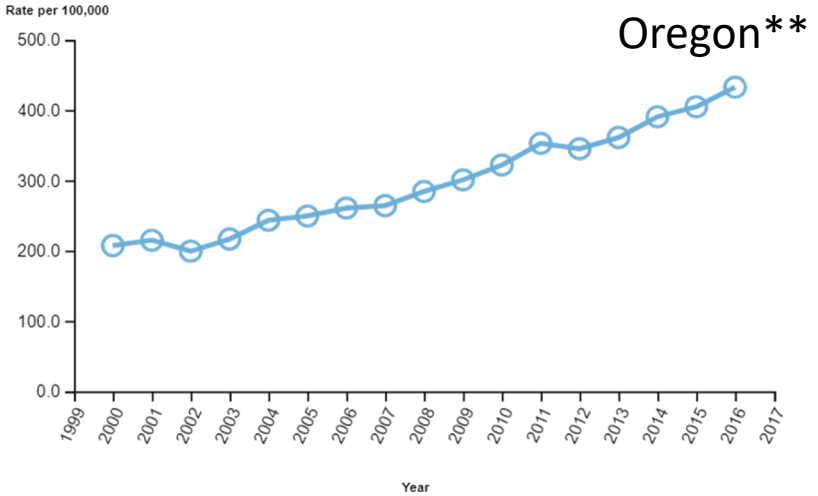
The state of STDs in the US

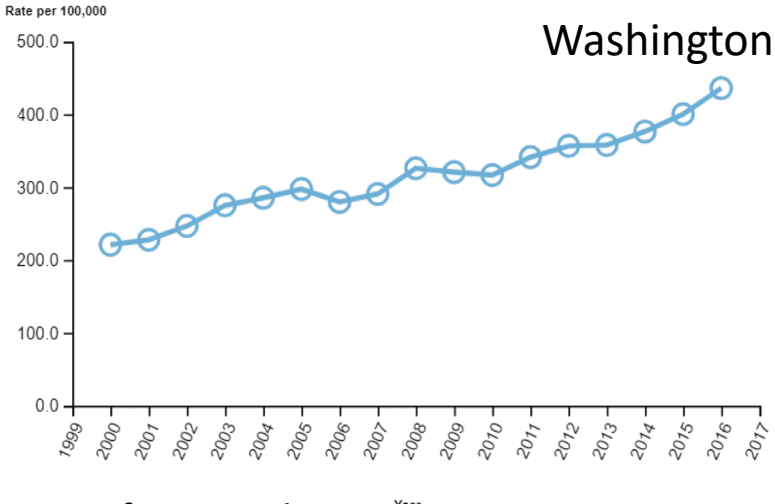


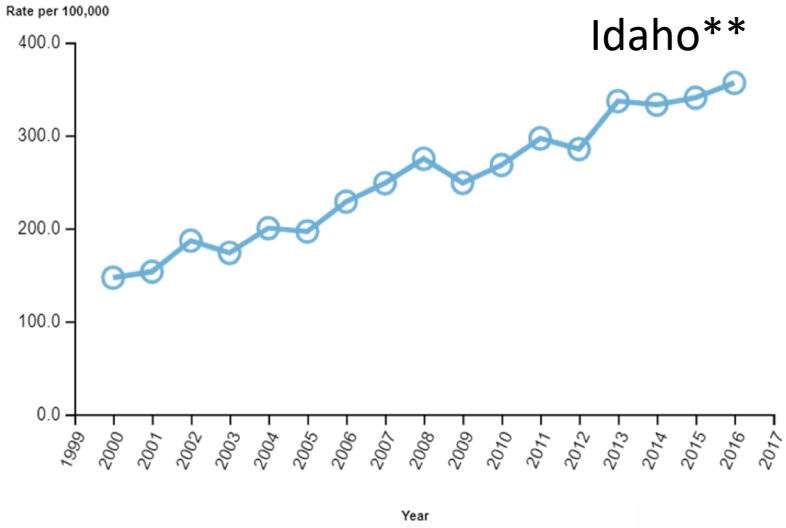
https://www.cdc.gov/media/releases/2018

Chlamydia-Rates of reported cases









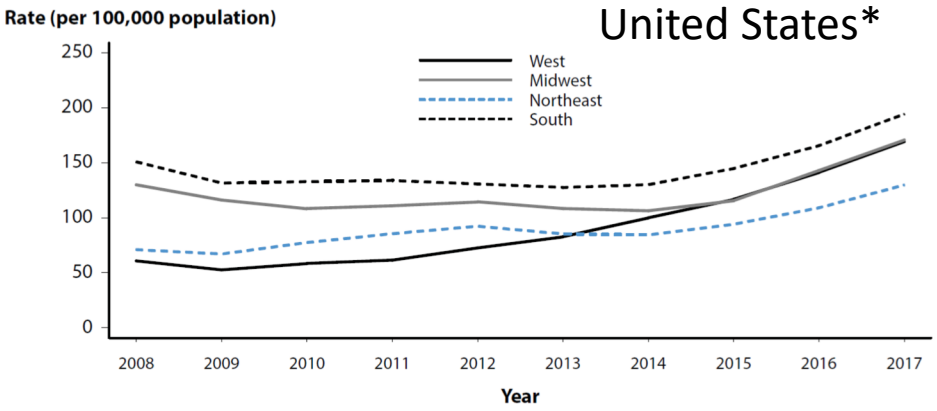
*Rates of Reported Cases by Region, US, 2008–2017

**Rates of Reported Cases by State, 2000-2016, all age and race/ethnic groups, both sexes

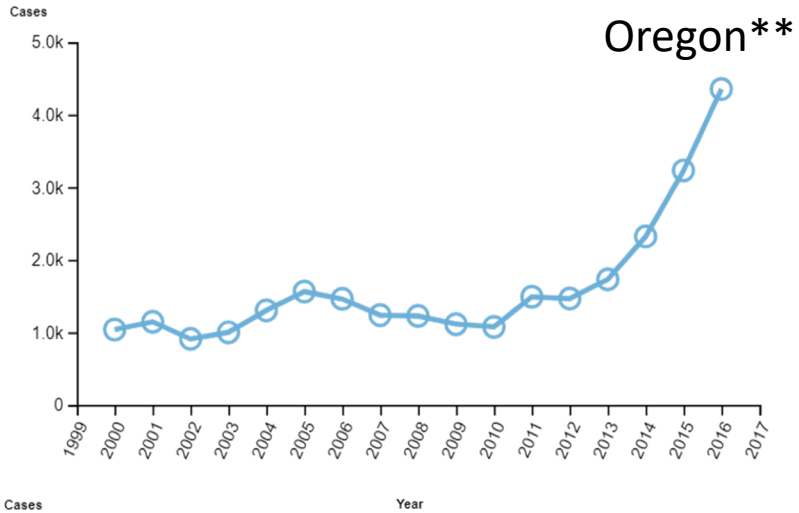
https://www.cdc.gov/std/stats17

Gonorrhea - Rates of reported cases

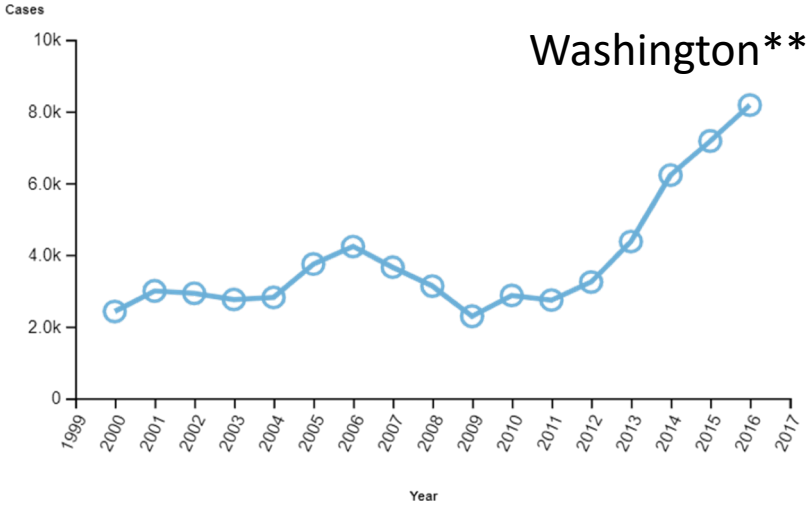
United States*



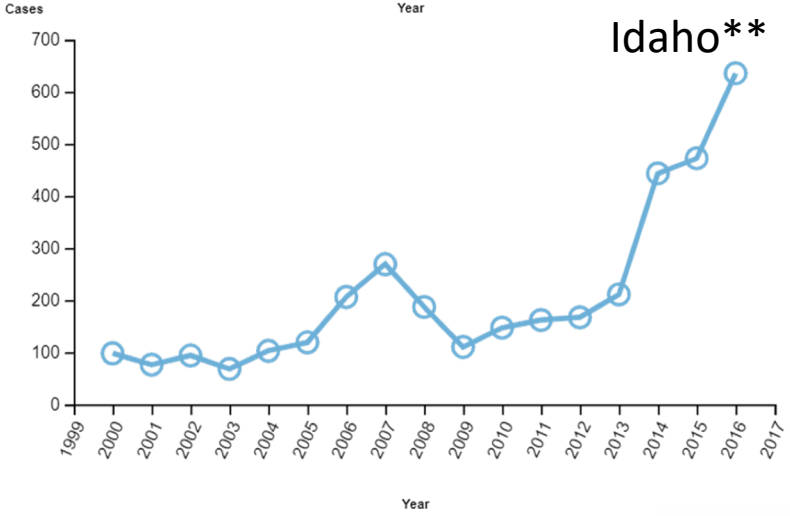
Oregon**



Washington**



Idaho**



*Rates of Reported Cases by Region, US, 2008–2017

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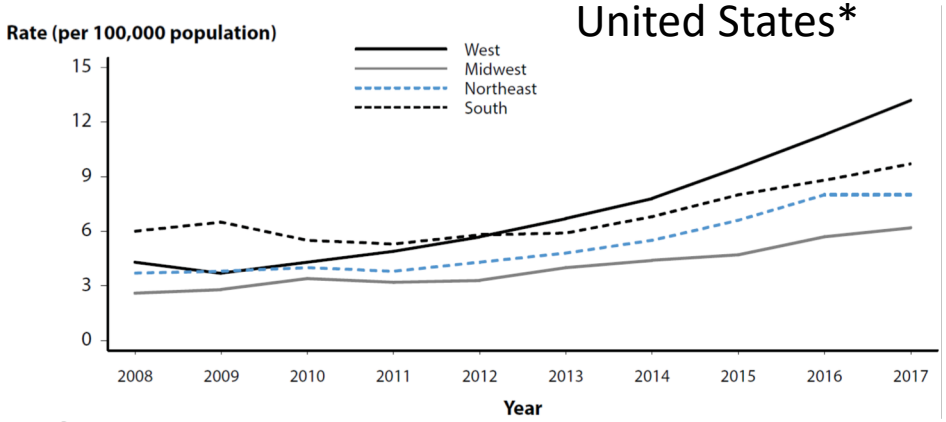
https://www.cdc.gov/std/stats17

Syphilis - Rates of reported cases

United States*



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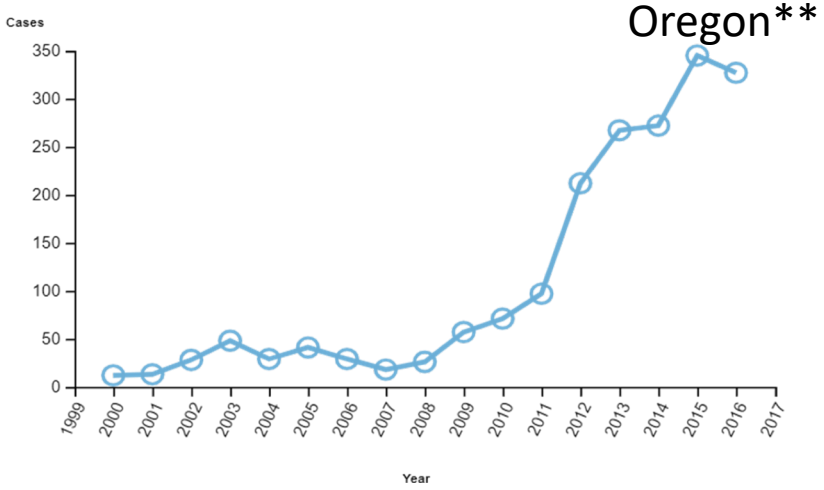
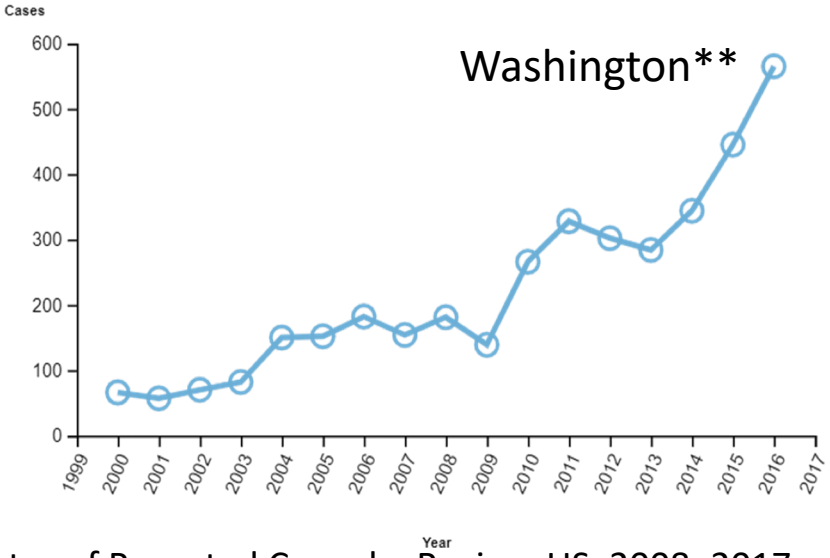
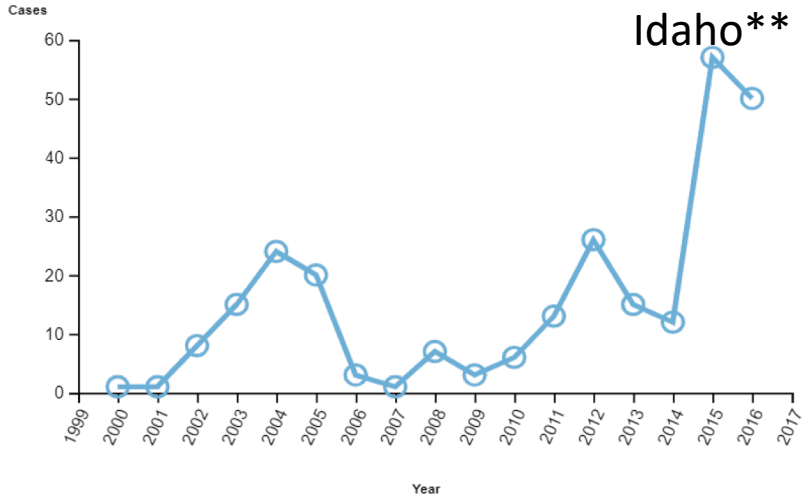


Washington**



Idaho**



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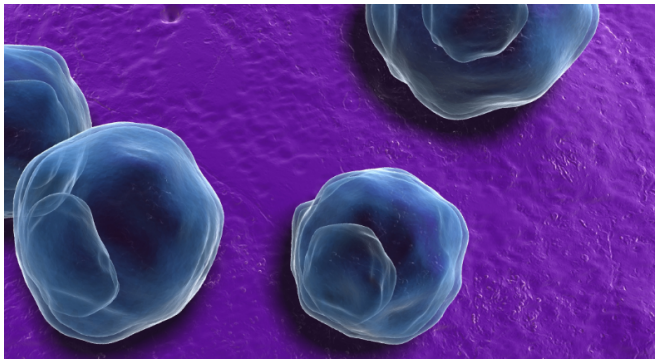
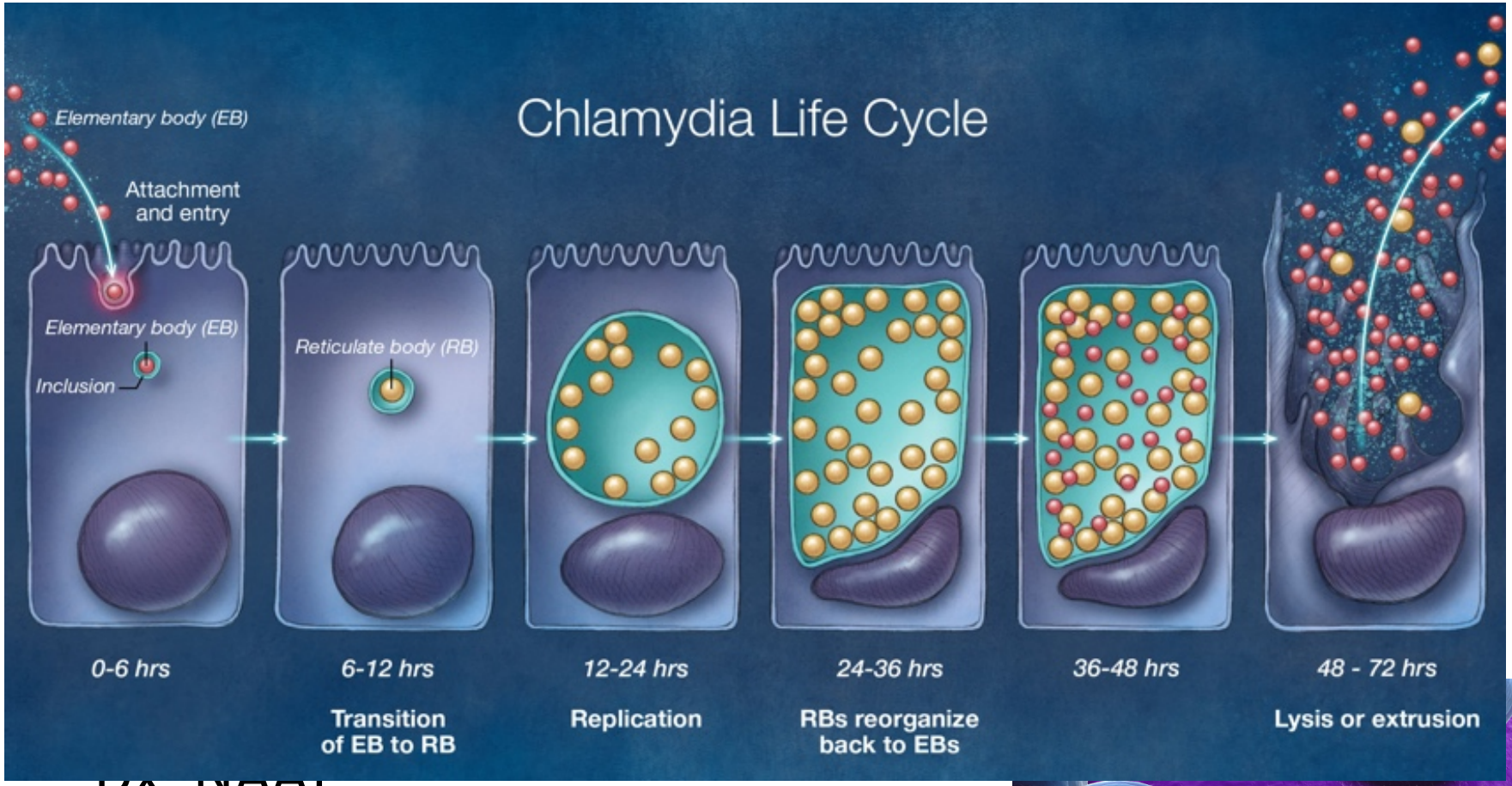
Chlamydial infections

Chlamydia trachomatis

- Obligate intracellular bacterial pathogen
- RF: <25y/o, prior *C. trachomatis* infection, report of a new sex partner or ≥1 sex partner in the prior 3 mo., inconsistent condom use
- The majority of affected persons are asymptomatic
  - Women: cervicitis, dysuria-pyuria syndrome, PID, perinephritis, complications during pregnancy, conjunctivitis, pharyngitis, LGV
  - Men: urethritis, epididymitis, prostatitis, proctitis, conjunctivitis, pharyngitis, LGV, RA
- Dx: NAAT



Chlamydia trachomatis



Dx: NAAT

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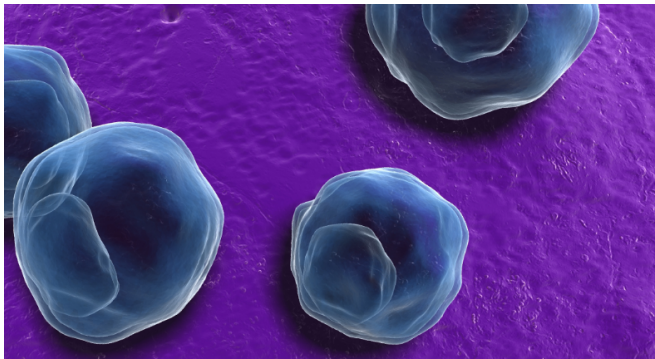


Chlamydia – Treatment

Uncomplicated genital chlamydial infection

- Recommended regimens
  - Azithromycin 1 g PO, single dose, directly observed, **OR**
  - Doxycycline 100 mg PO BID x 7 d

    - Geisler et al NEJM 2015: Azithro **non-inferior** compared to doxy
    - Both regimens highly effective: 100% cure with doxy, 97% with azithro

- Alternative regimens
  - Ofloxacin 300 mg PO BID x 7 d
  - Levofloxacin 500 mg PO Qday x 7 d
  - Erythromycin 500 mg PO QID x 7 d

CDC and Prevention. MMWR. 2015.64(3).

How to treat chlamydial infections during pregnancy?

- Recommended regimens
  - Azithromycin 1 g orally in a single dose
  - Doxycycline is contraindicated!

- Alternative regimens
  - Amoxicillin 500 mg PO TID x 7d
  - Erythromycin 500 mg PO QID x 7 d

CDC and Prevention. MMWR. 2015.64(3).

Oropharyngeal and rectal infections

- Oropharyngeal chlamydia
  - CDC STD guidelines: same as urogenital
  - Among 172 patients with oropharyngeal chlamydia:
    - 10% tx failure with azithromycin vs. 2% tx failure with doxycycline
- Rectal chlamydia
  - Doxycycline > Azithromycin for rectal infection
  - Systematic review
    - 8 observational rectal infection studies, mostly in men
    - 82.9% efficacy for azithro, 99.6% for doxy
  - Available evidence is limited, BUT other regions recommending doxy>azithro for rectal infection (Europe, Australia)

Geisler et al NEJM 2015
Kong et al, CID 2015
Manavi K, Int J STD AIDS, 2016, 27 (14)

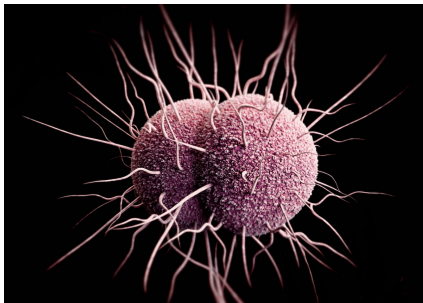
Management considerations

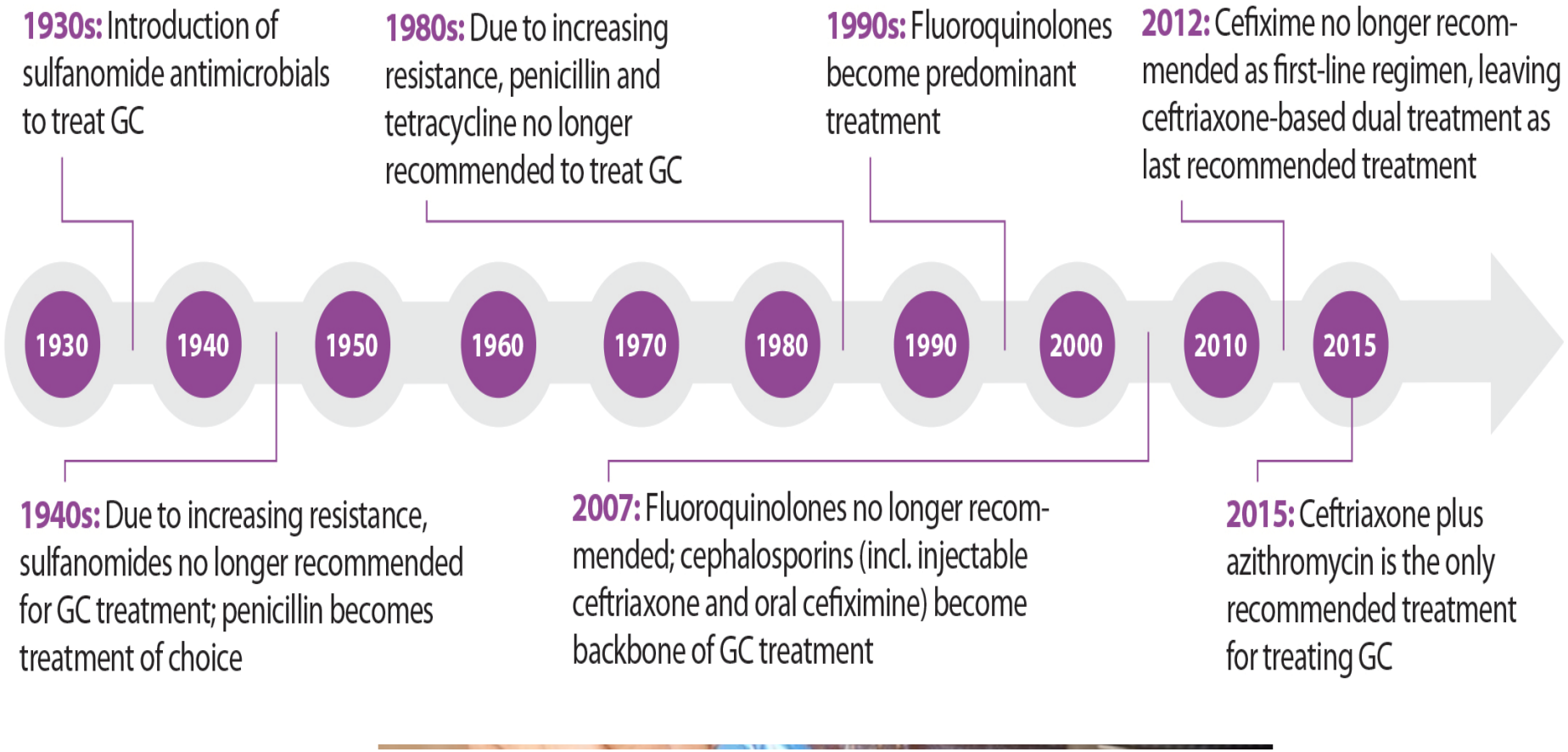
- Counseling: No sex for 7 days after treatment of patient and partners
- Treat partners
    - If exposed within last 60 days, or if >60 days, most recent partner
- Test for GC, HIV and syphilis
- Report infection to Public Health Authority
- Re-testing: 3 months after treatment
- Test of cure:
    - Pregnant women
    - Patients with persistent symptoms
    - Patients who were treated with suboptimal antibiotic
    - May get false positive if repeat NAAT at <3 weeks after completion of therapy

Gonococcal Infections

Neisseria gonorrhoeae

- Gram-negative coccus, strictly human pathogen
- RF: new sexual partner, multiple sexual partners, history of previous gonorrhea
- Clinical manifestations
  - Women: asymptomatic, cervicitis, urethritis, PID, perinephritis, bartholinitis, complications during pregnancy, conjunctivitis
  - Men: asymptomatic, urethritis, epididymitis, prostatitis, proctitis, conjunctivitis, pharyngitis, disseminated GD
- Dx: NAAT, culture





https://www.cdc.gov/nchhstp/newsroom/2016/data-on-antibiotic-resistant-gonorrhea.html

Gonorrhea Treatment

PREFERRED TREATMENT
Uncomplicated Gonococcal Infection of Cervix, Urethra, or Rectum

Ceftriaxone
250 mg IM x 1

+

Azithromycin
1 g PO x 1

ALTERNATIVE TREATMENT
Uncomplicated Gonococcal Infection of Cervix, Urethra, or Rectum

Cefixime
400 mg PO x 1

+

Azithromycin
1 g PO x 1

*Doxycycline is not an optimal alternative to azithromycin given concerns about GC resistance to doxy.

CDC and Prevention. MMWR. 2015.64(3).

Gonorrhea Treatment

Uncomplicated Gonococcal Infection of the Pharynx

Ceftriaxone
250 mg IM x 1

+

Azithromycin
1 g PO x 1

- No alternatives listed in CDC treatment guidelines
- Test of cure for any other regimen after 14 days

CDC and Prevention. MMWR. 2015.64(3).

Why Dual Therapy?

- To treat concomitant chlamydial infections
- To prevent development of resistance (theoretical, based on experience with other organisms like TB)
- Possible clinical synergy with two drugs

Sathia et al Int J STD & AIDS 2007
Barbee et al CID 2013

Gonorrhea treatment

Recommended treatment if CEPHALOSPORIN ALLERGY
UROGENITAL INFECTIONS

Gentamicin
240 mg IM x 1

OR

Gemifloxacin
320 mg PO x 1

+

Azithromycin
2 g PO x 1

- Perform TOC (culture >3 days and NAAT >14 days) if used for tx of pharyngeal infections

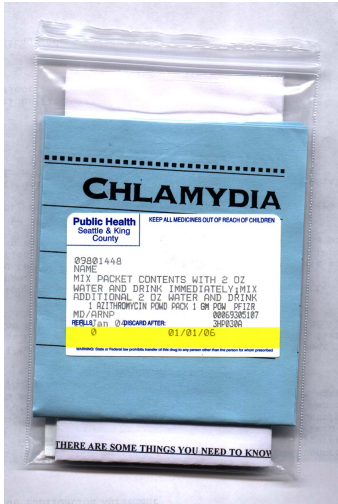
CDC and Prevention. MMWR. 2015.64(3).

Management considerations

- Counseling: No sex for 7 days after treatment of patient and partners
- Treat partners
    - If exposed within last 60 days, or if >60 days, most recent partner
- Test for CT, HIV and syphilis
- Report infection to Public Health Authority
- Re-testing: 3 months after treatment
- Test of cure:
    - Pharyngeal GC treated with alternative regimen should return for test of cure
- If persistent symptoms: culture and abx susceptibility testing

Chlamydia and Gonorrhea: Management of sex partners

- Partner assessment and treatment is first-line option
- Expedited partner therapy (EPT)
  - *"EPT is the clinical practice of treating the sex partners of patients diagnosed with chlamydia or gonorrhea by providing prescriptions or medications to the patient to take to his/her partner without the health care provider first examining the partner"*
- Legal status: EPT is permissible in ID, OR, WA
- Information provided with EPT
  - Information about medications, allergies & STD
  - Advice about complications and need for care
  - Where to seek care



https://www-cdc-gov./std/ept/

Expedited Partner Therapy

- Ideally: partner should be treated with ceftriaxone 250mg IM + azithromycin 1g PO
- BUT if partners will not/cannot:

Treatment for CT alone:
azithromycin 1g PO x 1

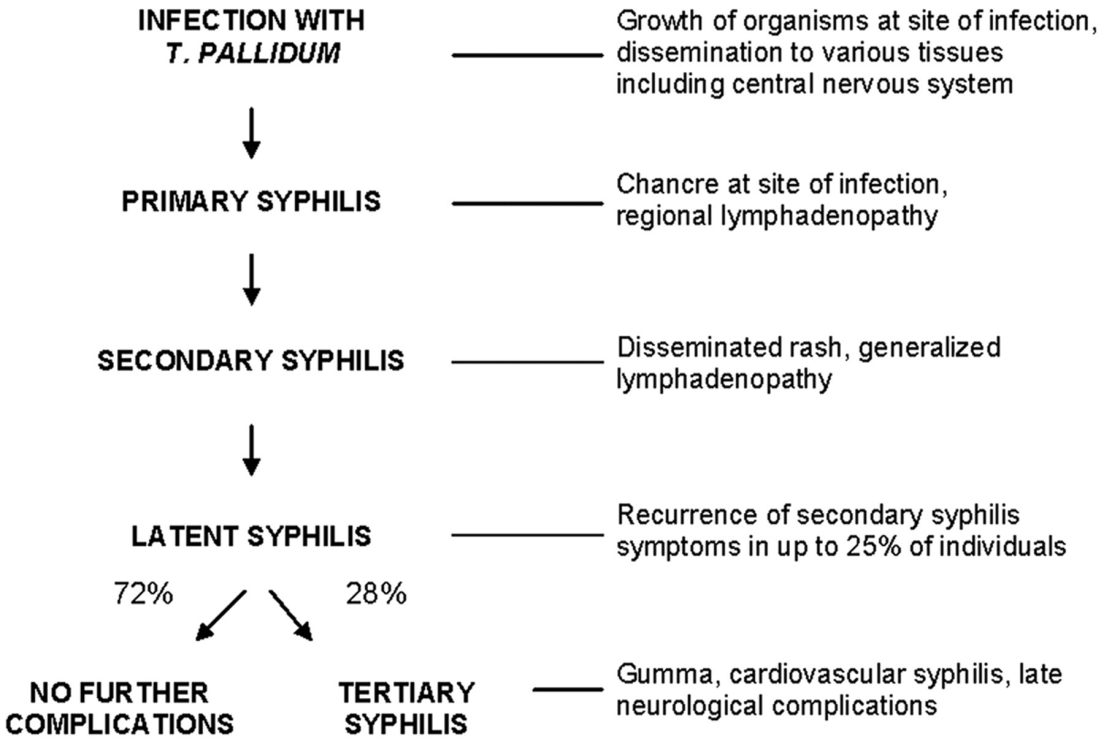
Treatment for GC and CT:
cefixime 400mg PO x 1 **AND** azithromycin 1g PO x 1

-Safe and effective at reducing reinfection for GC>CT
-ONLY for GC/CT, not syphilis
-NOT generally recommended for MSM: 5% of MSM with bacterial STI will be diagnosed with HIV


Syphilis

Syphilis

- Caused by the *Treponema pallidum* bacterium
- Sexual and vertical transmission
- Dx: Serologic tests, direct methods



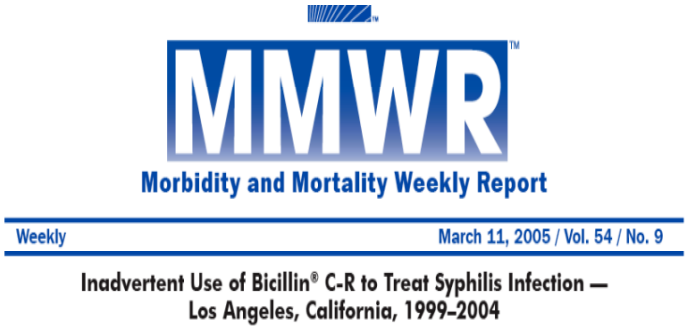
LaFond & Lukehart, Biological Basis for Syphilis. 2006

Early Syphilis Treatment

Primary, secondary, or early latent (<1 year)

- Recommended regimen:
  - Penicillin G benzathine 2.4 million units IM x 1

- Alternative regimens
  - Doxycycline 100 mg PO, BID, x 14 days
  - Ceftriaxone 1 to 2 g daily IM or IV x 10-14 days
  - Tetracycline 500 mg PO, QID, x 14 days



CDC and Prevention. MMWR. 2015.64(3).

Late Syphilis Treatment

Late latent (>1 year), latent syphilis of unknown duration, tertiary syphilis with normal CSF exam

- Recommended regimen:
  - Penicillin G benzathine 2.4 million units IM once weekly x 3 weeks

- Alternative regimens
  - Doxycycline 100 mg PO, BID, x 28 days
  - Tetracycline 500 mg PO, QID, x 28 days
  - ?Ceftriaxone

CDC and Prevention. MMWR. 2015.64(3).

Neurosyphilis and ocular syphilis

- Recommended regimen:
  - Aqueous crystalline PNC G 18–24 million units per day, administered as 3–4 million units IV every 4 hours or continuous infusion, for 10–14 days
  - Penicillin G procaine 2.4 million units IM daily **plus** probenecid 500 mg PO, QID, both x 10 to 14 d

- Alternative regimen:
  - *Ceftriaxone 2 gm IV daily x 10-14 days*

➢If possible, patients allergic to penicillin should be desensitized and treated with IV penicillin

CDC and Prevention. MMWR. 2015.64(3).

Special considerations

- Pregnancy: parenteral **penicillin G** is the only therapy with documented efficacy for syphilis during pregnancy.
  - No alternatives to PCN; must desensitize

- Jarisch-Herxheimer reaction
  - Acute febrile reaction, headache, myalgia, fever, within the first 24 hours after the initiation of any therapy for syphilis
  - Management with antipyretics

CDC and Prevention. MMWR. 2015.64(3).

Management considerations

- Clinical and serologic monitoring after treatment
  - Nontreponemal test antibody (quantitative) titers are used to follow treatment response.
  - A fourfold decline in the nontreponemal titer, equivalent to a change of two dilutions (eg, from 1:16 to 1:4 or from 1:32 to 1:8), is considered to be an acceptable response.
  - Serologic testing in HIV+: 3, 6, 9, 12, and 24 months after therapy
  - Serologic testing in HIV-:
    - Retest at 6 & 12 months for primary and secondary stages
    - Retest at 6, 12 and 24 months for latent disease
- Test for CT, GC, and HIV
- Report infection to Public Health Authority

Management of sex partners

Partners Needing Evaluation

- Primary, secondary, early latent syphilis - 3 months plus the duration of symptoms

Partner Testing and Treatment

- Contacts– sex in 90 days preceding onset of case's symptoms
  - Test and treat with 1st dose Benzathine PCN without waiting for test results
- Contacts - >90 days since last sex
  - Test – Treatment based on results and staging
  - Treat if testing not available or follow-up uncertain
- Late latent syphilis
  - Test partners

- EPT: not recommended for syphilis (only GC/CT)

https://www-cdc-gov/std/ept/

Resources

- STD Treatment guidelines

https://www.cdc.gov/std/tg2015/tg-2015-print.pdf

Mobile App: https://itunes.apple.com/us/app/std-tx-guide/id655206856?mt=8

- STD EPT

https://www-cdc-gov./std/ept/

- National STD Curriculum

https://www.std.uw.edu/

- Washington DOH – STD Prevention

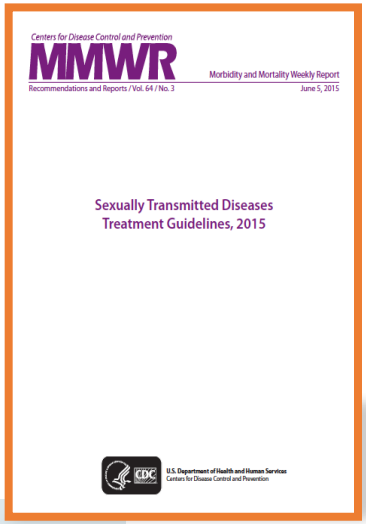
https://www.doh.wa.gov/YouandYourFamily/Illnessand Disease/SexuallyTransmittedDisease

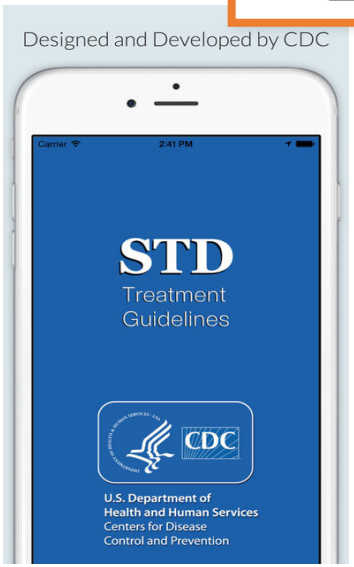
- Oregon DOH – STD Prevention

https://www.oregon.gov/oha/PH/DiseasesConditions/ HIVSTDViralHepatitis/SexuallyTransmittedDisease/Pages/index.aspx

- Idaho DOH – STD Prevention

https://healthandwelfare.idaho.gov/Health/HIV,STD, HepatitisSection/STDPrevention/ExpeditedPartnerTherapy/ tabid/3171/Default.aspx





Thank you!

April is…