Disclosures

The following have no financial relationships with commercial interest organizations to disclose:
Grace Alfonsi MD

All off-label or experimental use of drugs/therapy or devices will be disclosed.
Learning Objectives

- Discuss national and local trends of STDs
- Describe typical and atypical clinical presentations of STDs and related dermatologic conditions.
- Discuss emerging issues related to STD clinical care
OUTLINE

• Epidemiology slides
• Extragenital Testing rational
• GC antibiotic resistance issues
• Complicated syphilis
• Role of Mycoplamsa in STI
• Trichomonas changes in treatment
• PREP

Pictures along the way
STD Clinical Consultation Network

CLINICIANS,
Got a Tough
STD Question?

GET FREE EXPERT STD CLINICAL CONSULTATION AT YOUR FINGERTIPS

STD CCN: www.stdccn.org
National STD Curriculum

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

National STD Curriculum available at:
https://www.std.uw.edu/
STD Treatment Guidelines Resources

**STD Treatment Guidelines Mobile App**

- Designed and Developed by CDC
- Fast Access to Conditions
- Available at: https://itunes.apple.com/us/app/std-tx-guide/id655206856?mt=8

**STD Clinical Toolbox Mobile App**

- Available at: https://appadvice.com/app/std-clinical-toolbox-for-iphone/1128491831

Wall charts, pocket guides, and the full MMWR article at:
https://www.cdc.gov/std/tg2015/
STD Epidemiology
2017 Surveillance Report Overview

THE U.S. IS EXPERIENCING STEEP, SUSTAINED INCREASES IN SEXUALLY TRANSMITTED DISEASES

Combined diagnoses of chlamydia, gonorrhea, and syphilis increased sharply over the past five years

- Total Cases:
  - 1.8 Million in 2013
  - 2.3 Million in 2017
  - 31% Increase

- Gonorrhea:
  - 333,004 in 2013
  - 555,608 in 2017
  - 67% Increase

- Syphilis:
  - 17,375 in 2013
  - 30,644 in 2017
  - 76% Increase

- Chlamydia:
  - 1.7 Million in 2017
  - In 2017 chlamydia was the most common condition reported to CDC

*Preliminary data
The state of STDs in Mississippi in 2018:

- **22,086** cases of Chlamydia (4% increase since 2017)
- **9,749** cases of Gonorrhea (5% increase since 2017)
- **1,401** cases of Syphilis (62% increase since 2017)

The nation experiences steep and sustained STD increases.
Chlamydia Rates by Year, United States and Mississippi, 2009-2018

<table>
<thead>
<tr>
<th>Year</th>
<th>Chlamydia Rate (U.S.)</th>
<th>Chlamydia Rate (MS)</th>
<th>Chlamydia Cases (MS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>405.3</td>
<td>796.5</td>
<td>23,512</td>
</tr>
<tr>
<td>2010</td>
<td>423.6</td>
<td>720.4</td>
<td>21,375</td>
</tr>
<tr>
<td>2011</td>
<td>453.4</td>
<td>710.8</td>
<td>21,172</td>
</tr>
<tr>
<td>2012</td>
<td>453.3</td>
<td>770.3</td>
<td>22,992</td>
</tr>
<tr>
<td>2013</td>
<td>443.5</td>
<td>580.2</td>
<td>17,355</td>
</tr>
<tr>
<td>2014</td>
<td>452.2</td>
<td>654.7</td>
<td>19,603</td>
</tr>
<tr>
<td>2015</td>
<td>478.8</td>
<td>580.5</td>
<td>17,371</td>
</tr>
<tr>
<td>2016</td>
<td>497.3</td>
<td>673.0</td>
<td>20,115</td>
</tr>
<tr>
<td>2017</td>
<td>528.8</td>
<td>707.6</td>
<td>21,149</td>
</tr>
<tr>
<td>2018</td>
<td></td>
<td>739.5</td>
<td>22,086</td>
</tr>
</tbody>
</table>
Chlamydia — Rates of Reported Cases by State, United States and Outlying Areas, 2017

Rate per 100,000 population
- 175 - 426 (n=11)
- 427 - 480 (n=12)
- 481 - 529 (n=10)
- 530 - 592 (n=11)
- 593 - 1337 (n=10)
Chlamydia rates highest among Women 15-24

CDC, STD Surveillance Report 2017
## Gonorrhea Rates by Year, United States and Mississippi, 2009-2018

### Incidence per 100,000 population

<table>
<thead>
<tr>
<th>Year</th>
<th>Gonorrhea Rate (U.S.)</th>
<th>Gonorrhea Rate (MS)</th>
<th>Gonorrhea Cases (MS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>98.1</td>
<td>244.1</td>
<td>7,207</td>
</tr>
<tr>
<td>2010</td>
<td>100.2</td>
<td>208.4</td>
<td>6,184</td>
</tr>
<tr>
<td>2011</td>
<td>103.3</td>
<td>194.9</td>
<td>5,806</td>
</tr>
<tr>
<td>2012</td>
<td>106.7</td>
<td>229.8</td>
<td>6,860</td>
</tr>
<tr>
<td>2013</td>
<td>105.3</td>
<td>170.2</td>
<td>5,090</td>
</tr>
<tr>
<td>2014</td>
<td>109.8</td>
<td>188.0</td>
<td>5,629</td>
</tr>
<tr>
<td>2015</td>
<td>123.9</td>
<td>193.0</td>
<td>5,775</td>
</tr>
<tr>
<td>2016</td>
<td>145.8</td>
<td>239.5</td>
<td>7,157</td>
</tr>
<tr>
<td>2017</td>
<td>171.9</td>
<td>310.2</td>
<td>9,258</td>
</tr>
<tr>
<td>2018</td>
<td></td>
<td>326.4</td>
<td>9,749</td>
</tr>
</tbody>
</table>
Gonorrhea — Rates of Reported Cases by State, United States and Outlying Areas, 2017
Highest Gonorrhea rates in Men Overall

CDC, STD Surveillance Report 2017,
### Primary and Secondary Syphilis Rates by Year, United States and Mississippi, 2009-2018

<table>
<thead>
<tr>
<th>Year</th>
<th>P&amp;S Syphilis Rate (U.S.)</th>
<th>P&amp;S Syphilis Rate (MS)</th>
<th>P&amp;S Syphilis Cases (MS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>4.6</td>
<td>7.9</td>
<td>234</td>
</tr>
<tr>
<td>2010</td>
<td>4.5</td>
<td>7.6</td>
<td>226</td>
</tr>
<tr>
<td>2011</td>
<td>4.5</td>
<td>6.4</td>
<td>192</td>
</tr>
<tr>
<td>2012</td>
<td>5.0</td>
<td>5.2</td>
<td>155</td>
</tr>
<tr>
<td>2013</td>
<td>5.5</td>
<td>2.6</td>
<td>78</td>
</tr>
<tr>
<td>2014</td>
<td>6.3</td>
<td>6.4</td>
<td>192</td>
</tr>
<tr>
<td>2015</td>
<td>7.5</td>
<td>7.3</td>
<td>219</td>
</tr>
<tr>
<td>2016</td>
<td>8.7</td>
<td>10.9</td>
<td>328</td>
</tr>
<tr>
<td>2017</td>
<td>9.5</td>
<td>10.4</td>
<td>310</td>
</tr>
<tr>
<td>2018</td>
<td></td>
<td>15.5</td>
<td>464</td>
</tr>
</tbody>
</table>

**Incidence per 100,000 population**

- **P&S Syphilis Rate (U.S.):** 4.6, 4.5, 5.0, 5.5, 6.3, 7.5, 8.7, 9.5
- **P&S Syphilis Rate (MS):** 7.9, 7.6, 6.4, 5.2, 2.6, 6.4, 7.3, 10.9, 10.4, 15.5

**January-August 2019**

- **Incidence:** 387
Primary and Secondary Syphilis — Rates of Reported Cases by State, United States and Outlying Areas, 2017

[Map showing rates per 100,000 population for each state and territories, with a color scale for rate ranges. The rates vary from 0.0 to 40.2, with specific ranges indicated for different numbers of states.]

U.S. Territories
- GU 7.8
- PR 12.0
- VI 0.0

[Rate per 100,000 population categories: 0.0 - 3.8 (n=13), 3.9 - 5.8 (n=9), 5.9 - 7.8 (n=11), 7.9 - 10.4 (n=11), 10.5 - 40.2 (n=10).]
Increasing Syphilis cases, Primarily among Men who have Sex with Men
Increasing P &S Syphilis rate = increasing CS cases among reproductive aged women
Early Latent Syphilis Rates by Year, 2009-2018

<table>
<thead>
<tr>
<th>Year</th>
<th>ELS Rate (U.S.)</th>
<th>ELS Rate (MS)</th>
<th>ELS Cases (MS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>4.3</td>
<td>10.4</td>
<td>307</td>
</tr>
<tr>
<td>2010</td>
<td>4.4</td>
<td>12.9</td>
<td>384</td>
</tr>
<tr>
<td>2011</td>
<td>4.2</td>
<td>10.4</td>
<td>309</td>
</tr>
<tr>
<td>2012</td>
<td>4.6</td>
<td>8.7</td>
<td>259</td>
</tr>
<tr>
<td>2013</td>
<td>5.4</td>
<td>6.2</td>
<td>185</td>
</tr>
<tr>
<td>2014</td>
<td>6.1</td>
<td>11.3</td>
<td>339</td>
</tr>
<tr>
<td>2015</td>
<td>7.6</td>
<td>13.5</td>
<td>405</td>
</tr>
<tr>
<td>2016</td>
<td>9.0</td>
<td>16.5</td>
<td>494</td>
</tr>
<tr>
<td>2017</td>
<td>10.5</td>
<td>18.6</td>
<td>555</td>
</tr>
<tr>
<td>2018</td>
<td>10.5</td>
<td>31.4</td>
<td>937</td>
</tr>
</tbody>
</table>

Incidence per 100,000 population

January-August 2019: 736
Early Syphilis among Men by Sexual Behavior, 2014-2018

<table>
<thead>
<tr>
<th></th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSM Only</td>
<td>54%</td>
<td>54%</td>
<td>52%</td>
<td>50%</td>
<td>43%</td>
</tr>
<tr>
<td>MSMW</td>
<td>26%</td>
<td>25%</td>
<td>22%</td>
<td>21%</td>
<td>19%</td>
</tr>
<tr>
<td>MSW Only</td>
<td>20%</td>
<td>21%</td>
<td>26%</td>
<td>30%</td>
<td>38%</td>
</tr>
</tbody>
</table>

PREVENTION TRAINING CENTER
Increased Drug Use Among Heterosexuals with Primary & Secondary Syphilis

Basics of Affirming Care

Gender neutral language.
  • Avoid Ma’am or Sir.

Establish patients legal & affirming name
  • What name will I find your appointment under?
  • What name would you like me to use?

Establish patients pronouns
  • What pronouns would you like me to use?

Communicate with other staff
Transgender, adj.  
(pronounced /trans-gender/)

Cisgender, adj.  
(pronounced /sis-gender/)

Understanding Gender

SEX ASSIGNED AT BIRTH

<table>
<thead>
<tr>
<th>Male</th>
<th>Female</th>
<th>Intersex</th>
</tr>
</thead>
</table>

GENDER IDENTITY

<table>
<thead>
<tr>
<th>Man</th>
<th>Woman</th>
<th>Non-Binary</th>
</tr>
</thead>
</table>

The sex that someone is labeled at birth, usually based on the appearance of their genitals.

A person's deep-seated, felt sense of gender, or how a person feels on the inside regardless of what their body looks like.
A person’s sexual, emotional, physical, and psychological attraction to other people.

**Sexual Orientation**

- Heterosexual
- Lesbian
- Gay
- Bisexual
- Queer
- Pansexual
- Asexual
Gonorrhea and Chlamydia
Gonorrhea
GC/CT Diagnostics

• Urethral swab Gram Stain in men
  • GC
    ▪ Polymorphonuclear leukocytes with intracellular Gram negative diplococci (GNID)
    ▪ Specificity >99% Sensitivity >95%
  • Nongonococcal urethritis (possible CT)
    ▪ 2 or more WBC/hpf without GNID

• Urinalysis and microscopic exam in men
  • Unspecified urethritis (possible GC or CT)
    ▪ First void urine +leukocyte esterase or >10 WBC/HPF on spun urine

• GC and CT culture
  • Endocervix/urethra/rectum/pharynx

• Nucleic acid amplification test (NAAT)
Extragenital Chlamydia and Gonorrhea Among Community Venue—Attending Men Who Have Sex with Men — Five Cities, United States, 2017

**MMWR** MSM* & STDs: TEST MORE THAN GENITALS

**STDs IN THE THROAT AND RECTUM**
- MSM at **HIGH RISK**
- Often **NO SYMPTOMS**
- Detect by **SCREENING**
- Increases HIV risk

**OF MSM SCREENED FOR CHLAMYDIA & GONORRHEA**: 1 IN 8 HAD AN STD IN THROAT OR RECTUM

**SCREEN SEXUALLY ACTIVE MSM FOR STDs!**
- At least **1X/YEAR**
- Higher risk? **EVERY 3-6 MONTHS**
- If indicated, **TEST THROAT & RECTUM**

1/3 NOT SCREENED IN LAST 12 MONTHS

Data from National HIV Behavioral Surveillance (NHBS) as published in Johnson Jones et. al. MMWR 2019.

* * Men who have sex with men
** MSM recruited from social venues in 5 cities provided data and self-collected swabs

www.cdc.gov
Rationale for Extragenital Testing

- Rectal and oral sites serve as reservoirs of GC/CT and further spread to partners
- Men with rectal GC/CT have 2-5 times higher risk of HIV infection
- GC in throat might acquire antibiotic resistance from different bacteria present in throat
- Resistant GC can get transmitted to partners

Urethral Screening Alone, Misses Most Infections among MSM

SAN FRANCISCO, 2008-2009 (n=3398)

Chlamydia
- Identified: 23%
- Missed: 77%

Gonorrhea
- Identified: 5%
- Missed: 95%

Marcus et al, STD Oct 2011; 38: 922-4
Extragenital GC and CT NAAT*

- Rectum,
- Pharynx
- Commonly asymptomatic

*Nucleic Acid Amplification Test

Extragenital Testing in Women
Should you do it?

- Prevalence of extragenital GC/CT varies in women
- Translocation of GC/CT from vagina to rectal tissue
- Is it cost effective?
- Does it matter if treatment is the same?
- Rectal CT – Azith vs. Doxy?
Self Collected = Provider Collected Swabs

- Patient (self-collected) specimen collections for the detection of Chlamydia trachomatis (CT) and Neisseria gonorrhea (GC) from both pharyngeal and rectal sites have been assessed.

- Patients can collect rectal and pharyngeal swabs themselves that are comparable to those taken by clinicians.
Rectal Swab Collection Instructions

Step 1
Open Unisex APTIMA Collection kit and remove tube. Tube may be placed in holding rack. Remove the swab with the **PINK** shaft. **USE PINK SHAFT SWAB ONLY**

Step 2
Using the **PINK** shaft swab, insert swab 1 inch into the anus and gently turn, making contact with rectal wall, for 5-10 seconds.

Step 3
Remove the cap from the test tube. Place the swab in the test tube. Do not puncture the foil cap. Break swab shaft at the score mark.

Step 4
Put cap back tightly on test tube to prevent any leaking. Try not to splash liquid out of the tube.

Step 5
Discard wrapper and wash your hands.

Adapted from San Francisco City Clinic http://www.sfcityclinic.org/providers/RectalSwab_ENG.pdf
Pharyngeal Swab Collection Instructions

Step 1
Open Unisex APTIMA Collection kit and remove tube. Tube may be placed in holding rack. Remove the swab with the PINK shaft. USE PINK SHAFT SWAB ONLY

Step 2
Instruct patient to open mouth widely. A tongue depressor may be used to gently move the tongue down as needed. Swab the throat using the PINK shaft swab, making good contact with key areas of the throat as shown below.

Step 3
Remove the cap from the test tube. Place the swab in the test tube. Do not puncture the foil cap. Break swab shaft at the score mark.

Step 4
Put cap back tightly on test tube to prevent any leaking. Try not to splash liquid out of the tube.

Step 5
Discard wrapper and wash your hands.

Adapted from San Francisco City Clinic http://www.sfcityclinic.org/providers/PharyngealSwab_ENG.pdf
FDA Clears Extragenital Tests for Chlamydia and Gonorrhea

MAY 23, 2019 | MICHAELA FLEMING

The US Food and Drug Administration (FDA) has approved marketing for 2 tests that can detect bacteria that cause chlamydia and gonorrhea through diagnostic testing of extragenital specimen. The 2 tests, Aptima Combo 2 Assay and Xpert CT/NG are the first devices cleared for testing for these sexually transmitted infections (STIs) via the throat and rectum.

The US Centers for Disease Control and Prevention (CDC) estimates that the rate of STIs are on the rise with an estimated 1.7 million cases of chlamydia and more than 500,000 cases of gonorrhea documented in 2017 in the United States. Both STIs can be contracted through vaginal, anal, or oral intercourse. The infections are typically easily treated, but, if left untreated, can result in serious complications including infertility.

Both the Aptima Combo 2 Assay and Xpert CT/NG were previously cleared by the FDA for testing urine, vaginal, and endocervical samples.

The tests were reviewed through the premarket notification 510(k) pathway, which is a submission made to the FDA demonstrating that the device is safe and effective and "substantially equivalent" to a legally marketed device.
# Emerging Treatment Concerns with GC and CT

## Gonorrhea
- **Antibiotic Resistance**
  - Monitor treatment response
  - What if symptoms persist?

## Chlamydia
- **Azithromycin vs. doxycycline**
  - Which is better?
  - What about rectal infection?
Gonorrhea Historical Treatment Challenges

1930s: Introduction of sulfanomide antimicrobials to treat GC

1940s: Due to increasing resistance, penicillin and tetracycline no longer recommended to treat GC

1950s: Due to increasing resistance, sulfonamides no longer recommended for GC treatment; penicillin becomes treatment of choice

1960s: Fluoroquinolones become predominant treatment

1970s: Fluoroquinolones no longer recommended; cephalosporins (incl. injectable ceftriaxone and oral cefixime) become backbone of GC treatment

1980s: Due to increasing resistance, penicillin and tetracycline no longer recommended to treat GC

1990s: Fluoroquinolones become predominant treatment

2000s: Ceftriaxone no longer recommended as first-line regimen, leaving ceftriaxone-based dual treatment as last recommended treatment

2010s: Ceftriaxone plus azithromycin is the only recommended treatment for treating GC

2015s: Ceftriaxone plus azithromycin is the only recommended treatment for treating GC
Increasing markers of GC resistance to azithromycin

*Neisseria gonorrhoeae* — Percentage of Isolates with Elevated Azithromycin Minimum Inhibitory Concentrations (MICs) (≥2.0 µg/ml), Elevated Ceftriaxone MICs (≥0.125 µg/ml), and Elevated Cefixime MICs (≥0.25 µg/ml), Gonococcal Isolate Surveillance Project (GISP), 2008–2017
Marker for GC resistance to azithromycin higher among MSM

*Neisseria gonorrhoeae* — Percentage of Urethral Isolates with Elevated Azithromycin Minimum Inhibitory Concentrations (MICs) (≥2.0 µg/ml) and Elevated Ceftriaxone MICs (≥0.125 µg/ml) by Reported Sex of Sex Partners, Gonococcal Isolate Surveillance Project (GISP), 2011–2017
CDC STD Treatment Guidelines 2015: Uncomplicated GC

• Recommended:
  • Ceftriaxone 250mg IM x 1
  • Plus Azithromycin 1g PO x 1
  • Other IM cephalosporin ceftizoxime, cefoxitin, cefotaxime

• Alternatives:
  • Cefixime 400mg PO x 1 plus azithromycin 1g PO x 1
    ▪ Doxycycline can be used as an alternative to azithromycin
    ▪ Gemifloxacin 320mg PO x 1 plus azithromycin 2g PO x 1
    ▪ Gentamicin 240mg IM x 1 plus azithromycin 2g PO x 1
    ▪ Spectinomycin/(azithromycin)
Over diagnosis of PCN Allergy

• ~10% of US residents labeled as PCN allergic
• Retrospective study
  • >65,000 people with PCN allergy
  • Received cephalosporins (beta-lactam antibx)
  • Only 3 cases of anaphylaxis
  • Not statistically different from non-PCN allergic people
• 80% of those with true allergic reaction will lose sensitivity within 10 years

Is ceftriaxone safe to use?

• If PCN allergy, cephalosporin only contraindicated if hx of severe reaction.

• What is severe?
  ▪ IgE mediated response -
    • Bronchospasm
    • Laryngeal edema
    • Hypotension
    • Urticaria (intense hives)
    • Anaphylaxis
    • Steven Johnson Syndrome

• If no hx of severe IgE mediated allergic response to PCN, safe to use ceftriaxone.
EPT - What is it?

- Treatment of partners for patients with positive GC or CT without a direct assessment by a clinician

- Standard EPT packet
  - Is patient delivered
  - Contains medications or prescriptions
  - Contains informational materials
EPT - Why do it?

- **Schillinger et al.** Sex Transm Dis 2003;30:49-56
  - 20% reduction in CT re-infection in women who were retested 4 months after treatment

- **Kissinger et al.** Al Clin Infect Dis 2005; 41:623-9
  - 46% reduction in GC and/or CT infection among men with urethritis

  - 73% reduction in GC infection at follow-up among men and women
  - 15% reduction in CT infection at follow-up
Legal status of Expedited partner therapy by State

- **Permissible**
- **Potentially allowable**
- **Prohibited**
Complicated Syphilis
Infection

Incubation
10-90 days
Avg: 21

Primary
- Chancre, regional lymphadenopathy
1-3 months

Secondary
- Rash, generalized lymphadenopathy
1-3 months

Latent
- Asymptomatic
2-50 years

Lifetime Latency

Early Latent
- < 1yr

Late Latent
- > 1yr

CNS Invasion

Asymptomatic neurosyphilis
Meningeal syphilis, Cranial Nerves
Meningovascular syphilis

Tertiary
- Gumma, Cardiovascular syphilis, Paresis, Tabes dorsalis, Dementia
70% 30%
What is your diagnosis?
What is the classic description?

1. Primary Syphilis

2. Painless, Indurated, Clean-based Ulcer
What is this type of lesion called?

• **Chancre**

What is your diagnosis?

• **Primary syphilis**
What is your diagnosis?
What is the treatment?

• **Primary Syphilis**

• **Benzathine Penicillin G 2.4 million units IM in a single dose**
What is this lesion? What is your diagnosis?

Oral chancre

Primary syphilis
What are the conditions below? What infection are they seen in?

- Adenopathy
- Patchy Alopecia
- Secondary Syphilis
What are these lesions?
What is your diagnosis?

Condyloma lata

Secondary syphilis
What are these lesions? What is your diagnosis?

Condyloma lata
Secondary syphilis
What is your diagnosis?

Genital Warts / HPV
What is your diagnosis?

Pearly Penile Papules (PPP)
What is your diagnosis?

What is the treatment if PCN allergic?

Secondary syphilis

Doxycycline 100 mg twice a day orally x 14 days
The Great Masquerader

Measles

Secondary Syphilis

Atopic dermatitis

Pityriasis rosea
Complicated Syphilis

- Neurosyphilis
- Ocular Syphilis
- Otosyphilis
Symptomatic Neurosyphilis

- Occurs at any syphilis stage
- Can affect most nervous system structures
- Symptoms and signs
  - Meningitis
    - Headache, stiff neck
  - Stroke
    - Weakness, numbness, trouble with language
  - Dementia
    - Personality change, memory loss
  - Spinal cord disorder
    - Sensory loss, trouble walking, bowel and bladder dysfunction

Courtesy: Christina Marra, MD – University of Washington
Neurosyphilis Natural History

CSF is abnormal but no neurologic abnormalities

Persistent Meningitis = Asx Meningitis (Early)

Early Sx NS Wks - Mos - Yrs
  - Sx Meningitis
    - Hearing Loss
    - Visual Loss
  - Meningovascular Stroke + Meningitis

Late Sx NS Yrs - Decades Rare
  - General Paresis
    - Dementia
    - Pers Chng
  - Tabes Dorsalis
    - Spinal Cord
    - Sensory Ataxia
    - Incontinence

Courtesy: Christina Marra, MD – University of Washington
Ocular Syphilis

- Occurs at any syphilis stage
- Can affect most eye structures
  - Posterior and panuveitis most common
- Symptoms and signs
  - Redness
  - Eye pain
  - Floaters
  - Flashing lights
  - Vision loss; blindness
Otosyphilis

- Occurs at any syphilis stage
- Can affect most ear structures
- Symptoms and signs
  - Hearing loss
  - Ringing (tinnitus)
  - Dizziness
- Audiogram
  - High frequency sensorineural hearing loss most common

Courtesy: Christina Marra, MD – University of Washington
Neurosyphilis in Early Syphilis: 10 US States

Oliver SE et al. MMWR 2016;65
Neurosyphilis (NS): Risk Factors

• Previous syphilis protective against NS
  • 2-5% of all early syphilis cases are repeat infections

• Higher risk for NS and maybe ocular in HIV
  • Especially in advanced and/or untreated HIV

• Higher risk with higher serum RPR titer

• Higher risk of NS with certain strain types
Recommended Syphilis Treatment

- Penicillin preferred for all stages
- Early syphilis (primary, secondary, early latent)
  - Benzathine penicillin G (L-A) single dose IM 2.4 mu
- Late latent
  - Benzathine penicillin G (L-A) IM 2.4 mu weekly x 3 doses (7.2 mu total)
- Ocular syphilis and neurosyphilis
  - Aqueous crystalline penicillin G 18-24 mu per day administered as 3-4 mu IV every 4 hours or continuous for 10-14 days
Syphilis Response-Current Activities

Partner with organizations to conduct targeted screenings and increase syphilis awareness in the Jackson MSA

CARE4ME Services

just know'

Have you been tested for syphilis?
If your answer is NO, get tested today!
It's time to know...'just know' for sure.
Syphilis is serious, so take the test!

For more information contact:
CARE4ME Services
Jackson Medical Mall Foundation
350 West Woodrow Wilson Avenue, Suite 101
Jackson, MS 39213
Telephone: 601 982-8467
Free monograph on syphilis management

https://www.nycptc.org/
Free downloadable pdf
Non Gonococcal Urethritis
Urethritis

- More purulent typically of Gonorrhea
- Less purulent typical of chlamydia or NGU
Recurrent and Persistent Urethritis

- Re-treat with initial regimen if not adherent/re-exposed
- Most common cause is MG
  - Azithromycin 1 g x 1
  - If azithromycin failure, moxifloxacin 400 mg once daily x 7 days
- TV is a cause of urethritis in MSW
- UU limited data for causality. More susceptible to doxycycline

![Trichomonas](image1.png)  ![Mycoplasma](image2.png)  ![Ureaplasma](image3.png)
Mycoplasma genitalium (M.gent)

Colonies on a Plate
Mycoplasma Genitalium

What we don’t know

• How many people are infected with M. gen in the US?
• What are the recommended screening guidelines?
• What are the risk factors for M. gen acquisition?
• Is there an association with adverse reproductive health outcomes?

Causes of Nongonococcal Urethritis
Seattle, 2007 - 2011

What we do know about *M. genitalium*?

- Most infections are asymptomatic
- MG most clearly associated with NGU
  - Other associations: cervicitis, endometritis, PID, infertility, & adverse birth outcomes
- FDA approved NAAT—Aptima 2019
- 2013-14 U.S. multicenter study in 7 clinics
  - Prevalence: female 16.3%; male 17.2%
  - Macrolide resistance: female 50.8%; male 42%
- Par C mutations with reported moxifloxacin treatment failure

What should we do when we suspect *M. gent* infection?

<table>
<thead>
<tr>
<th>Type of infection</th>
<th>Macrolide resistance</th>
<th>First-line antibiotics</th>
<th>Second-line antibiotics</th>
<th>Third-line antibiotics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncomplicated infection</td>
<td>No</td>
<td>Azithromycin or josamycin</td>
<td>Moxifloxacin</td>
<td>Doxycycline or pristinamycin</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>Moxifloxacin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complicated infection (pelvic inflammatory disease, epididymitis)</td>
<td>Moxifloxacin 400 mg once a day for 14 days</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note:* Data from Jensen et al.⁷⁹
What is the name of this organism?

What is the treatment?

*Trichomonas vaginalis*

Metronidazole 2 grams orally x 1
# 2015 CDC Treatment Guidelines: TV Treatment in Patients Without HIV

## Recommended Regimens

<table>
<thead>
<tr>
<th>Medicine</th>
<th>Dosage and Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metronidazole</td>
<td>2 g po x 1</td>
</tr>
<tr>
<td>Tinidazole</td>
<td>2 g po x 1</td>
</tr>
</tbody>
</table>

## Alternative regimens

<table>
<thead>
<tr>
<th>Medicine</th>
<th>Dosage and Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metronidazole</td>
<td>500 mg po bid x 7 days</td>
</tr>
</tbody>
</table>

## Recommended Regimens - Pregnancy

<table>
<thead>
<tr>
<th>Medicine</th>
<th>Dosage and Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metronidazole</td>
<td>2 g orally in a single dose</td>
</tr>
</tbody>
</table>

Source: CDC 2015 STD Treatment Guidelines
TV Treatment: Is It Time for a Change?

- Multicenter, Randomized Control Trial
- Single dose 2g metronidazole vs. 500mg metronidazole BID for 7 days
- 1028 women

Trich Vaginitis: Treatment Failure

TV on wet prep

Metronidazole/Tinidazole 2g x 1

OR

Alternate Metronidazole 500mg po BID x 7 days

Metronidazole or tinidazole at 2 g orally for 7 days

Test organism for metronidazole and tinidazole susceptibility

TV drug susceptibility testing with tailored treatment may be beneficial to clearance of infection

Culture to CDC
Who would benefit from Pre-Exposure Prophylaxis?

What is PrEP, or Pre-Exposure Prophylaxis?

Pre = before

Exposure = coming into contact with HIV

Prophylaxis = treatment to prevent an infection from happening

CDC estimates that 1.1 M people at risk for acquiring HIV could benefit from HIV prevention strategies including PrEP.

AIDSVU.org
Huang et al. MMWR 2018;67:1147–1150.
New HIV Diagnoses in 2017

- 38,739 new HIV diagnoses in 2017

CDC, *HIV Surveillance Report 2018*
New HIV Diagnoses in 2017 by Age and Race/Ethnicity

New HIV Diagnoses by Age

- 45-54: 14% (8% Black/African American, 2% Other)
- 13-24: 23%
- 25-34: 34%
- 35-44: 19%
- 55-64: 8%
- 65+: 2%
- 65+: 2%

Diagnoses by Race/Ethnicity

In 2017, Blacks/African Americans and Hispanics/Latinos accounted for 69% of HIV diagnoses but comprised only 31% of the U.S.* population.

* Does not include 6 dependent areas
** American Indian/Alaska Native: 0.69% • Asian: 2.5%
Native Hawaiian/Other Pacific Islander: 0.1% • Multiple races: 2.396

CDC, HIV Surveillance Report 2018
PrEP Use Increasing Overall; Highest in NE

PrEP use has been increasing every year. The number of PrEP users grew by 29% between 2016 and 2017.

AIDSVu.org
Current PrEP Users ≠ Everyone at risk for HIV

AIDSVu.org/PrEP
Current PrEP Users ≠ Everyone at risk for HIV

- 94% Men
- 63% aged 25-44
- 11% Black/African American
- 13% Latinx

Sullivan et al. A of epidemiology 2018; 28(12)833-840
Huang et al. MMWR 2018;67:1147–1150
Summary

• Chlamydia, gonorrhea & syphilis have all increased sharply in the last 4 years
• Persons disproportionately affected by STIs
  • Young people aged 15-24
  • Ethnic minorities
  • LGBTQ persons – MSM; Trans persons
• All people with an STI should be offered a HIV and syphilis test and consider PEP or PrEP
• All people with living with HIV should be screened for STIs
Questions?
Rates at which people were diagnosed with an HPV associate cancer

Rates are per 100,000 and age-adjusted to the 2000 U.S. Standard Population (19 age groups — Census P25-1130) standard.

Data are from population-based cancer registries participating in CDC's National Program of Cancer Registries (NPCR) and/or the National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER) Program for 2011 to 2015, covering 100% of the U.S. population.
HPV Vaccine coverage by state

Source: www.cdc.gov/hpv
The Latest: Two HPV Shots Suffice

• Per CDC Guidelines October 2016
  – 11-12 year-olds recommended to receive 2 doses of HPV vaccine 6 months apart
  – 13-14 year-olds also able to receive the 2-dose schedule
  – 15-26 year-olds will continue on the 3-dose schedule
  – Permissible up to age 45 now.

Source: CDC, October 19, 2016
HPV CANCER PREVENTION

1. HPV VACCINE IS CANCER PREVENTION
   - HPV vaccine protects against HPV types that most commonly cause anal, cervical, oropharyngeal, penile, vaginal, and vulvar cancers.
   - Every year in the U.S., 27,000 people get cancer caused by HPV.
   - That's 1 person every 20 minutes of every day, all year long.
   - Most of these cancers can be prevented by HPV vaccine.

2. HPV VACCINE IS RECOMMENDED AT THE SAME TIME AS OTHER TEEN VACCINES
   - Preteens need three vaccines at 11 or 12. They protect against whooping cough, cancers caused by HPV, and meningitis.
   - Vaccines for your 11-12 year old:
     - Tdap
     - HPV
     - Meningococcal

3. HPV VACCINE IS BEST AT 11-12 YEARS
   - Preteens have a higher immune response to HPV vaccine than older teens.
     - Age
     - 9
     - 10
     - 11
     - 12
     - 13
     - 14
     - 15
     - 16
     - 17
     - 18
     - 19
     - 20
     - 21
     - 22

While there is very little risk of exposure to HPV before age 13, the risk of exposure increases thereafter.

KEEP CALM AND GET YOUR ANTI-HPV VACCINE

Don’t Talk about SEX!!
What is your diagnosis?

- LGV - Lymphogranuloma Venereum
When should we consider LGV as a diagnosis?

<table>
<thead>
<tr>
<th>Bloody discharge, perianal ulcers, or mucosal ulcers in MSM with proctitis PLUS</th>
<th>Significant inguinal or femoral lymphadenopathy</th>
<th>Genital ulcer disease (GUD) with negative syphilis and HSV testing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rectal CT NAAT(+) or HIV (+)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Treatment for LGV**
LGV - Lymphogranuloma Venereum

**Incubation Period**
- 3-30 days

**Clinical Manifestations**
- Primary lesion
- Secondary stage: acute lymphadenopathy
- Chronic inflammatory response (minority of patients)
What are these? What is your diagnosis?

- **Mucous patches**
- **Secondary syphilis**

What is the treatment?

- **Benzathine Penicillin G**
  - 2.4 million units IM in a single dose
What is the name of this organism?
What is the treatment?

*Trichomonas vaginalis*

*Metronidazole 2 grams orally x 1*
What is your diagnosis?
What additional information would help you make this diagnosis?

Genital Herpes
What is your assessment?

Scrotal epidermoid cysts
What is your diagnosis?

Herpes