Sexually Transmitted Infections
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Objectives
• Review taking a sexual history
• Discuss screening, diagnosis, and management of chlamydia, gonorrhea, genital HSV, HPV, and trichomonas
• Discuss screening of Syphilis and HIV
• Update on epidemiology of STDs
• Discuss expedited partner therapy
• Update on trends in condom use
• I won’t be talking about pregnancy or vertical transmission (much)

Take a Sexual History!

THE 5 “P”s of SEXUAL HEALTH
PARTNERS
PREVENTION OF PREGNANCY
PROTECTION FROM STIs
PRACTICES
PAST HISTORY OF STIs
• Partners
  • Do you have sex with men, women, or both?
  • In the past 2 months, how many partners have you had sex with? 2 months?
  • Is it possible that any of your sex partners in the past 12 months had sex with someone else while they were still in a sexual relationship with you?

• Practices
  • “To understand your risk for STIs, I need to understand the kind of sex you have had recently”
  • Have you had vaginal sex, meaning, penis-in-vagina?
  • Have you had anal sex, meaning penis-in-rectum/anus?
  • Have you had oral sex, meaning mouth on penis or vagina?

• Prevention of pregnancy
  • What are you doing to prevent pregnancy?

• Protection from STIs
  • How do you protect yourself from STIs and AIDS?

• Past history of STIs
  • Have you ever had an STI?
  • Have any of your partners had an STI?

• Additional questions to identify HIV or hepatic risk
  • Have you or any of your partners ever injected drugs?
  • Have you or any of your partners exchanged money or drugs for sex?
  • Is there anything else about your sexual practices I need to know?

• LGBTHEALTHEDUCATION.ORG
  • Taking Routine Histories of Sexual Health: A System-Wide Approach for Health Centers

Chlamydia

The Most Common Bacterial STI

Chlamydia trachomatis
Reported Cases in the US, 1984-2017
Chlamydia Rates of Reported Cases by Age and Sex, United States, 2017

Source: Centers for Disease Control and Prevention. Sexually Transmitted Disease Surveillance 2017: Chlamydia. Atlanta: U.S. Department of Health and Human Services; September 2018

https://tracking.idph.iowa.gov/Health/Sexually-Transmitted-Diseases/Chlamydia-Data
Chlamydia: Risk Factors

- New partners, multiple partners, history of STI, presence of another STI, lack of condom use
- Prominent cervical ectropion (exposed columnar cervical cells) → younger women, OCP use

Chlamydia: Transmission

- Per-act transmission risk of 10%
- Infection rate of 55% between partners
- Estimates of transmission rate are imprecise, may be a little higher from men to women

Chlamydia: Clinical Manifestations

- Women
  - Cervicitis, urethritis, PID
  - Perihepatitis (Fitz-Hugh-Curtis syndrome)—nausea, vomiting, fever, RUQ pain, along with PID symptoms
- Men
  - Urethritis, epididymitis
- Men and Women
  - Conjunctivitis, oropharyngitis infection, proctitis, reactive arthritis (Reiter’s syndrome)

Chlamydia Impact

- Untreated genital chlamydia infections
  - Women: PID
    - Chronic pelvic pain
    - Fallopian tube scarring
    - Infertility
  - Rectal chlamydia in MSM
    - Significantly increases the risk of HIV acquisition
    - Screening for rectal chlamydia can be a cost-effective intervention for HIV prevention

Chlamydia: Diagnosis

- **NUCLEIC ACID AMPLIFICATION TESTS (NAATS) – AMPLIFY SPECIFIC DNA/RNA SEQUENCES**
- NAATs can detect live or non-viable organisms
- FDA-approved uses for *C. trachomatis* NAATs
  - urine specimens from men and women
  - urethral swabs in men
  - endocervical swabs in women (some tests are cleared for vaginal swabs)
- LABs can get CLIA approved to do rectal and pharyngeal testing for clinical purposes
- **MEN:** urethral swab or 1st catch urine are the most sensitive tests
- **Women:** Vaginal and cervical swabs are preferred over urine samples
  - several studies have shown that self-collected vaginal swabs are preferred by women and perform about the same or better than clinician-collected vaginal swabs, may perform even a little better than endocervical samples
  - Self-collected rectal swabs have performed well

Chlamydia Screening Recommendations

|                      | Men who have sex with Men who have sex with women (SHU) | Men who have sex with CFS with women | Other risk factors
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>CDC</td>
<td>&lt;25: annual screening ≥5+ screening if risk factors</td>
<td>Not routinely recommended</td>
<td>At least annually</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Genital and rectal sites exposed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Regardless of condom use</td>
</tr>
<tr>
<td>USPTF</td>
<td>Same as CDC</td>
<td>Not routinely recommended</td>
<td>Not routinely recommended</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Oropharynx not routinely recommended</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- 3-6-month interval if higher risk</td>
</tr>
</tbody>
</table>

Transgender Men and Women: Screening is based on age, current anatomy, and sexual practices
### Treatment of Urogenital Chlamydia

<table>
<thead>
<tr>
<th>Recommended</th>
<th>Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Azithromycin</td>
<td>Erythromycin base</td>
</tr>
<tr>
<td>1 g PO in single dose</td>
<td>500 mg PO QID for 7 days</td>
</tr>
<tr>
<td>Doxycycline</td>
<td>Levofloxacin</td>
</tr>
<tr>
<td>100 mg PO BID for 7 days</td>
<td>500 mg PO qday for 7 days</td>
</tr>
</tbody>
</table>

- **Rectal chlamydia** – same as urogenital, but observational studies show doxycycline might be a little more effective
- **Oropharyngeal chlamydia** – clinical significance of is unclear, but since it can be spread to genital sites, treat as above

### Chlamydia Follow-up

- Test of cure is generally not necessary
- Any person who tests positive for chlamydia or gonorrhea should be **re-tested 3 months** after treatment
  - Pregnant women diagnosed with chlamydia SHOULD have a test-of-cure 3-4 weeks after completing treatment and they should have repeat testing for chlamydia approximately 3 months after completing treatment

### Chlamydia: Partner Treatment

- For patients diagnosed with urogenital chlamydial infection, all sex partners with whom they had sexual contact in the preceding 60 days should be referred for evaluation, testing, and presumptive treatment with a drug regimen effective against chlamydia
  - In addition, the most recent sex partner should be evaluated and treated even if the time of the last sexual contact was greater than 60 days before the patient’s onset of symptoms.
  - Consider expedited partner therapy for treatment of partners
EXPEDITED PARTNER THERAPY

- If in-person evaluation of sex partners is unavailable, or impractical
- Decreases the rate of recurrent or persistent chlamydia infection
- Provide appropriate antibiotics to treat the infection, as well as educational information and pharmacy information
- NOT recommended: MSM, female partners with sx of PID
- Expedited partner therapy is not legal in all states
- Used for chlamydia, gonorrhea, and trichomonas

Expedited Partner Therapy in Iowa

“A physician, PA, or ARNP who diagnoses a sexually transmitted chlamydia or gonorrhea infection in an individual patient may prescribe, dispense, furnish, or otherwise provide prescription oral antibiotic drugs to that patient’s sexual partner or partners without examination of that patient’s partner or partners.” Iowa Code Ann. § 139A.41

Expedited Partner Therapy

- Chlamydia (and Gonorrhea)
- Recent sex partners
  - within the 60 days preceding onset of symptoms or diagnosis
  - The most recent sex partner should be treated regardless of interval from diagnosis
- Avoid reinfection
  - Abstain from unprotected sexual intercourse for 7 days after they and their sex partner(s) have completed treatment and symptoms have resolved
GONORRHEA

Gonorrhea Rates 1940-2017

2017: 555,608 reported cases
**Gonorrhea: Rates of reported cases by sex and age group in the US, 2017**

<table>
<thead>
<tr>
<th>Men</th>
<th>Rate (per 100,000 population)</th>
<th>Women</th>
<th>Rate (per 100,000 population)</th>
</tr>
</thead>
<tbody>
<tr>
<td>700</td>
<td>600</td>
<td>0</td>
<td>500</td>
</tr>
<tr>
<td>500</td>
<td>400</td>
<td>100</td>
<td>300</td>
</tr>
<tr>
<td>300</td>
<td>200</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>100</td>
<td>50</td>
<td>10</td>
<td>5</td>
</tr>
</tbody>
</table>


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**Niesseria gonorrhea Pathology**

- Attaches to different types of epithelium: urogenital, oropharyngeal, and conjunctival
- Antigenic variation – reorganization of surface structures
- Inherent resistance to phagocytosis, macrophages, and neutrophils
- Individuals can reacquire the same strain multiple times

Source: Centers for Disease Control and Prevention Public Health Image Library. Medical Illustration—James Archer, 2013
Gonorrhea transmission

- Male to female rates of 50-70% per act
- Female to male transmission rate of 20% per act
- Patients with gonorrhea are more likely to transmit AND acquire HIV
  - gonococcal urethritis increases HIV shedding in men

Clinical Manifestations of Gonorrhea

- Women
  - at least 50% of women with genital gonococcal infection are asymptomatic
  - Cervicitis, urethritis, PID, accessory gland infection (eg. Bartholinitis, peri-hepatitis (Fitz-Hugh-Curtis syndrome)

- Men
  - Most men will develop urethritis
  - epididymitis

- Men and Women
  - Conjunctivitis (usually from autoinoculation), oropharyngeal infection, proctitis
  - Disseminated gonococcal infection
    - Skin lesions, arthritis, hepatitis, myocarditis, endocarditis, meningitis
  - Much less common, declining proportion of gonococcal strains prone to disseminate

Diagnosis of Gonorrhea

- Nucleic Acid Amplification tests (NAATs)- most sensitive for gonorrhea
  - Same as for chlamydia
- Culture
  - Helpful in if concerned about resistance – can perform susceptibilities
### Gonorrhea Screening Recommendations

<table>
<thead>
<tr>
<th>CDC</th>
<th>&lt;25: annual screening</th>
<th>25+: screening if risk factors</th>
<th>Not routinely recommended</th>
<th>At least annually for all, including anogenital, oral, and oral/pharyngeal sites exposed to potential gonococcal exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>USPTF</td>
<td>Same as CDC</td>
<td>Not routinely recommended</td>
<td>Not routinely recommended</td>
<td>3-6-month interval if higher risk of exposure</td>
</tr>
</tbody>
</table>

**Men who have sex with men**

| Risks – new partner, multiple partners, partner with STI | CDC – consider in populations with high prevalence – STD clinics, correctional facilities |

**Women who have sex with men**

| Risks – new partner, multiple partners, partner with STI | CDC – consider in populations with high prevalence – STD clinics, correctional facilities |

**Women who have sex with women**

| Risks – new partner, multiple partners, partner with STI | CDC – consider in populations with high prevalence – STD clinics, correctional facilities |

**Men who have sex ONLY with women**

| Risks – new partner, multiple partners, partner with STI | CDC – consider in populations with high prevalence – STD clinics, correctional facilities |

**Transgender Men and Women**

Screening is based on age, current anatomy, and sexual practices.

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### Antimicrobial Drugs Used to Treat Gonorrhea, GISP 1988–

Data from the Gonococcal Isolate Surveillance Project (GISP) 2017

In 2017, the proportion of patients treated with ceftriaxone 250 mg was 98.1%, an increase from 84.0% in 2011.

**NOTE:** "Other" includes azithromycin 2g (0.2%), no therapy (0.1%), and other less frequently used drugs (0.8%).


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### Prevalence of Tetracycline, Penicillin, or Fluoroquinolone Resistance or Elevated Cefixime, Ceftriaxone, or Azithromycin MICs by Year

Gonorrhea: Treatment

• DUAL THERAPY = CEFTRIAXONE + AZITHROMYCIN
  • Improves treatment efficacy and decreases drug-resistance
  • Azithromycin (and doxycycline) will effectively treat concomitant chlamydia
  • Azithromycin is preferred over doxycycline
    • Convenience – 1 dose vs 7 days
    • Lower rate of gonococcal resistance to azithromycin compared to doxycycline

• Penicillin ALLERGY
  • Allergic reactions to first-generation cephalosporins occur in less than 2.5% of persons with a history of penicillin allergy and are less common with third-generation cephalosporins such as ceftriaxone and cefixime
  • Ceftriaxone is contraindicated in patients with a history of IgE-mediated anaphylaxis to penicillin
    • Alternative is IM gentamicin with azithromycin

Gonorrhea: Follow-up

• Test-of-cure is generally not needed
• The majority of cases of suspected treatment failure are actually re-infection
  • If persistent symptoms, need to have a culture with susceptibility
• 14 day test of cure is only recommended for OROPHARYNGEAL gonorrhea treated with an ALTERNATIVE regimen (cefixime with azithromycin)
• Preferred expedited partner therapy for gonorrhea
  • Cefixime 400 mg PO + Azithromycin 1g PO
Herpes Simplex Virus – Genital Disease

• HSV-1 and HSV-2 can cause genital disease
  • HSV-2 is more common cause of genital disease
  • HSV-1 causes oral ulcers, HSV-2 rarely causes oral ulcers

• Seroprevalence from 2005 - 2010 in the United States, ages 14-49
  • HSV-1 -- 53.9%
  • HSV-2 -- 15.7%

Herpes Simplex Virus - Genital Disease

HSV-1

- HSV-1 seroprevalence has decreased by 30% over the past 30 years in 14-19 year-olds
  - Increasing proportion of adolescents lack protective HSV-1 antibodies when they become sexually active, leading to an increased frequency of HSV-1 genital herpes acquired from oral-genital sex practices
- HSV-1 is a more common cause of initial episodes of genital herpes than HSV-2 in some populations
  - Heterosexual women age 18–22
  - Non-Hispanic whites
  - Men who have sex with men

Asymptomatic Shedding of HSV

- Most HSV-2 seropositive persons have asymptomatic viral shedding
- Asymptomatic shedding of HSV in women most often occurs from the vulva and perianal area whereas in men it occurs from the penile skin and perianal area
- Small quantities of virus are released from the ganglia on most days
  - Primed immune response leads to genital tract inflammation in those with HSV-2
  - Body recruits CD-4 cells to mucus (HIV target cells), leading to greater HIV acquisition
- After 10 years of infection shedding detected on about 17% of days
- The majority of HSV-2 transmission is thought to occur with viral shedding in asymptomatic persons
- Antiviral suppressive therapy reduces HSV-2 shedding by 70 to 80%
- Genital HSV-1 shedding is less frequent than HSV-2 shedding, with shedding detected by culture on 2% of days

Clinical manifestations of primary genital infection (no previous HSV antibodies)

- Local Symptoms
  - Severe multiple bilateral genital ulcers, pain, itching, dysuria, vaginal or urethral discharge, and tender inguinal adenopathy
- Systemic symptoms
  - Fever, myalgias, headaches, aseptic meningitis or symptoms of autonomic nervous system dysfunction such as urinary retention
Clinical manifestations of primary infection (no previous HSV antibodies)

- HSV shedding from the cervix occurs in 80 to 90% of primary HSV-1 and HSV-2 infections
- Herpes proctitis
  - Fever, pain, discharge, tenesmus, and constipation; some patients will have severe anal ulcerations visible on anoscopy
  - Rarely, herpes proctitis may present as a pseudotumor that mimics epidermoid carcinoma
- Infection of the urethra can cause a clear mucoid discharge

Clinical progression of HSV genital lesions

VESICLE    WET ULCER    DRY ULCER

Clinical and Virologic Course of Genital HSV in Primary Infection

![Graph showing the progression of HSV symptoms over time with specific stages labeled for sexual contact, lesion onset, and lesion healing.](https://via.placeholder.com/150)
Recurrent Symptomatic HSV Infection

- Milder illness, typically with unilateral lesions that resolve within 3 to 5 days
- Generally no systemic symptoms for HSV-2
- Frequency of symptomatic genital herpes reactivation
  - HSV-2 median of 4-5 in the first year, to 3-4 in subsequent years
  - HSV-1 median of 1 reactivation in the first year, to 0 in the subsequent years
- Tingling/burning start 12-24 hours before lesion appearance
- People with a prolonged initial course and women have a higher number of recurrences

Unrecognized and Asymptomatic HSV Infection

- 80% of persons seropositive for HSV-2 have never been diagnosed
  - True asymptomatic infection → 20%
  - Very mild or unrecognized → 60%
- Symptoms could be mistaken for vaginitis, hemorrhoids, or an allergic reaction
- With education on symptoms, 2/3 of "asymptomatic" HSV-2 seropositive individuals will identify symptoms genital HSV
- Persons seropositive for HSV-2 who are unaware of their genital infection account for the majority of transmitted genital HSV infections
- Initial HSV-2 genital infection in persons with HSV-1 antibodies is often asymptomatic

HSV: Diagnosis

- Many patients do not have typical lesions
- Physical examination cannot distinguish between disease caused by HSV-1 and HSV-2
- Clinical diagnosis SHOULD be confirmed by HSV typing
  - Clinical course depends on HSV-1 vs HSV-2
  - HSV culture or PCR
- Vesicles should be unroofed and the base of the ulcer swabbed to obtain adequate cells for viral culture or PCR
  - Just getting lesion fluid has low yield – HSV is intracellular virus
HSV Serological Tests

- The use of HSV type-specific serologic assays might be useful in the following scenarios:
  - Recurrent or atypical genital symptoms with negative HSV cultures or PCR
  - A clinical diagnosis of genital herpes without laboratory confirmation
  - A sex partner with genital herpes
  - As part of a comprehensive evaluation for STDs in persons with multiple sex partners, persons with HIV infection, and men who have sex with men (MSM) at increased risk for HIV acquisition

HSV Screening

- USPSTF recommends AGAINST routine serologic screening for genital HSV in asymptomatic adolescents and adults (Grade D, 2016)
- CDC: screening with type-specific HSV antibody should be made available to individuals who:
  - request it and have risk factors for infection
  - have a partner with genital herpes
  - have recurrent or atypical genital symptoms
  - have multiple sex partners

Treatment of 1st Episode of Genital HSV

<table>
<thead>
<tr>
<th>2015 CDC Treatment Guidelines</th>
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</thead>
<tbody>
<tr>
<td>Acyclovir</td>
<td>400 mg PO TID</td>
</tr>
<tr>
<td>Acyclovir</td>
<td>200 mg PO five times per day</td>
</tr>
<tr>
<td>Valacyclovir</td>
<td>1 g PO BID</td>
</tr>
<tr>
<td>Famiciclovir</td>
<td>250 mg PO TID</td>
</tr>
</tbody>
</table>

Duration of 7-10 days, can be extended if healing is incomplete after 10 days of therapy
Episodic Therapy for Recurrent Genital HSV

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<tr>
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<tr>
<td>Famiciclovir</td>
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<tr>
<td>Famiciclovir</td>
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<tr>
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Suppressive Therapy for Recurrent Genital HSV

- Reduces the frequency of recurrences by 70-85%
- Valacyclovir 500 mg daily will decrease transmission by the HSV-2 positive partner to the HSV-2 negative partner by 48% in heterosexual pairs.
  - Use along with condoms, disclosure of HSV status, and avoiding sexual activity during recurrences
- There is no evidence of antiviral resistance

<table>
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<tr>
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</thead>
<tbody>
<tr>
<td>Acyclovir</td>
</tr>
<tr>
<td>Valacyclovir</td>
</tr>
</tbody>
</table>
| Valacyclovir | 1000 mg daily *
  - might be less effective in those with >10 outbreaks per year |
| Famiciclovir | 250 mg BID |
Condoms in the Prevention of HSV Spread

• Consistent condom use reduced the risk of HSV-2 transmission by 30%
• The risk of HSV-2 acquisition was estimated to decrease by 7% for every 25% increase in the frequency of condom use
• 3.6% increase in odds of HSV-2 acquisition per unprotected sexual act

Human Papillomavirus

• 79 million women aged 14 to 59 years are infected with HPV
• highest prevalence among those aged 20 - 24 years (CDC estimate)
• ~14.1 million new HPV infections in the US each year (CDC estimate)
• 40+ types of HPV can infect the genital tract out of 170 total types
• High-risk HPV types (esp 16/18) can cause cancer of the cervix; AND have been associated with cancers of the vulva, vagina, anus, penis, and oropharynx
• Average of 30,700 annual cancers attributable to HPV during the years 2008-2012
• 60% of these cancers in females (CDC estimate)

HPV

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Transmission of Genital HPV

- Genital HPV is sexually transmitted
- A greater number of lifetime sexual partners is associated with a higher likelihood of acquiring HPV
- A person with a few or even one lifetime sexual partner can get infected
- Transmission does not require presence of visible lesions in the source individual and transmission of HPV frequently occurs from persons who are asymptomatic or have subclinical infection

HPV timeline

- 90% of individuals with genital HPV infections are asymptomatic and clear the infection within 2 years
- Genital warts: incubation is 3 weeks to several months
- Cervical cell abnormalities: incubation is several months to years
- Following acquisition of HPV, the median duration of HPV infection of the cervix (measured by detection of HPV DNA) is approximately 1 year
- If cervical cancer develops, it typically occurs decades after the initial infection

Natural history of HPV and cervical cancer
HPV clinical manifestations

- Most HPV infections are transient, asymptomatic, or subclinical
- The 3 most common clinically significant manifestations
  - anogenital warts
  - cervical cellular abnormalities
  - anal cancer in men who have sex with men

Genital Warts

A B

C D

Genital warts: Do you need to treat a partner?

- No. Re-infection doesn’t play a significant role in recurrences
- Treatment solely for preventing spread – it is not known if treating warts reduces infectivity
- Genital warts are highly infectious, so it benefits the partner to be informed and for the couple to use risk-reduction methods such as consistent and correct condom use to reduce the risk of transmission
HPV Screening

- Frequency of Pap test screening remains the same regardless of HPV vaccination status or history of external genital warts
- HPV screening as a co-test in women 30+ (5 year interval for pap and HPV testing)
- HPV as a reflex test in women age 25-29 with ASCUS.
  - Cervical cancer screening should solely be based on whether a person has a cervix

HPV Vaccine

- Indications for 9vHPV Vaccine
  - The current FDA indications for the 9vHPV vaccine for females and males are listed below.
  - **Females**: The 9vHPV is approved for females aged 9 through 45 years of age for prevention of cervical, vulvar, vaginal, and anal cancers caused by HPV types 6, 11, 16, 18, 31, 33, 45, 52, and 58; precancerous or dysplastic lesions caused by HPV types 6 and 11; and genital warts caused by HPV types 6 and 11.
  - **Males**: The 9vHPV is approved for males aged 9 through 45 years of age for the prevention of anal cancer caused by HPV types 16, 18, 31, 33, 45, 52, and 58; precancerous or dysplastic lesions caused by HPV types 6, 11, 16, 18, 31, 33, 45, 52, and 58; and genital warts caused by HPV types 6 and 11.

Dosing and Schedule for 9vHPV Vaccine

- The FDA-recommended dosing schedule depends on the age of the individual receiving the vaccine series.
  - **Persons Aged 9-14**: Options include a 2-dose series given at 0 and 6-12 months or 3-dose series given at 0, 2 months, and 6 months. Note that with the 2-dose series, if the person received the second vaccine dose earlier than 5 months after the first dose, then a third dose should be administered at least 4 months after the second dose.
  - **Persons Aged 15-45**: All persons in this age range should receive the 3-dose vaccine series given at 0, 2 months, and 6 months.

Impact of HPV Vaccine

![Impact of HPV Vaccine Chart](chart.png)

- Cervical/vaginal prevalence of HPV 6,11,16,18
- 2000-2008 vs 2009-2012
Syphilis: Treponema pallidum

Syphilis Cases United States 1941-2017
Congenital Syphilis

Recently, a campaign done by the British Columbia CDC raised awareness about syphilis. The campaign aimed to educate the public about the risks associated with syphilis infection.

Syphilis: Risk factors

- The highest risk associated with syphilis infection occurs in men who have sex with men and in persons with HIV infection (men or women).
Syphilis: Screening

<table>
<thead>
<tr>
<th></th>
<th>Women who have sex with men</th>
<th>Women who have sex with women (CDC)</th>
<th>Men who have sex with men</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDC</td>
<td>• No routine syphilis screening for non-pregnant women.</td>
<td>Not routinely recommended</td>
<td>• At least annually</td>
</tr>
<tr>
<td></td>
<td>• Women with increased risk factors should be screened</td>
<td></td>
<td>• If additional risk factors, every 3-6 months</td>
</tr>
<tr>
<td>USPTF</td>
<td>Same as CDC</td>
<td>Not routinely recommended</td>
<td>Same as CDC</td>
</tr>
<tr>
<td>Risks</td>
<td>Risks – HIV, history of incarceration, history of exchanging sex for money, certain racial/ethnic groups (highest in blacks), and being a male younger than 29 years of age</td>
<td>CDC – consider in populations with high prevalence – STD clinics, correctional facilities</td>
<td>3-6 month interval if higher risk</td>
</tr>
</tbody>
</table>

Trichomonas

Trichomoniasis

- Protozoa Trichomonas vaginalis
- 3.7 million people have trichomoniasis in the US
- Can persist for months to years in epithelial crypts and peri-glandular areas of the genital tract
- Risk factors: older age, multiple sex partners, drug use, lower SES, douching
- Women – frothy gray or yellowish discharge, pruritis
- Men – usually asymptomatic, but can cause urethritis, prostatitis, or epididymitis
Screening for Trichomonas?

- Diagnostic testing is recommended
  - Women seeking care for vaginal discharge
  - People getting care in high prevalence settings (STD clinics, correctional facilities)
  - Asymptomatic persons at high risk for infection – multiple partners, people who exchange sex for money or drugs
  - Screening in women with HIV

Trichomoniasis treatment

- Metronidazole 2 g orally once
- If treatment failure then 500 mg BID for 7 days
- Tinidazole 2 g orally once – more expensive, may be better tolerated
- Metronidazole resistance 4-10%
- Metrogel is not effective for trichomoniasis

Trichomonas: Follow-up

- Management of Sex Partners
  - Patients should be encouraged to tell their sex partners
  - Partners should be referred for STD screening and presumptive treatment
  - Expedited partner therapy is recommended
- Resumption of Sexual Activity
  - Patients should be instructed to avoid sex until they and their partners have been treated and until they no longer have symptoms. Usually about 7 days.
- Post-Treatment Follow-Up
  - All sexually active women who are diagnosed and treated for T. vaginalis infection should be retested 3 months after initial treatment
  - Retesting in men is not routinely recommended.
HIV, briefly...

Iowans diagnosed with HIV 2007-2017

HIV screening

- 2006 – CDC advocated for routine voluntary HIV screening 13-64 as a normal part of medical care without the need for signed consent or counseling
- Prior was risk-based
- Routine screening was introduced in part to identify patients who may not disclose their risk factors
HIV Screening

- Multiple studies have shown that routine HIV testing is cost effective
  - Especially if seroprevalence is >0.1% (national average is 0.5%)
- CDC recommends one-time screening age 13-64 (2006)
- USPSTF recommended universal HIV screening age 15-65 (2013)
- American College of Physicians (2009) suggests age range to 75 because of growing number of HIV infections in older patients.
- Screen younger and older in those with risk factors
- Annual or more frequent for high risk persons

Condom Use at Last Sexual Intercourse in Women and Men age 15-44 in the US

Condom Use as reported by sexually active students in grade 9-12, by gender, 1991-2015
In the State of Iowa, chlamydia, gonorrhea, syphilis, HIV, and AIDS are reportable to the Iowa Department of Public Health. By Iowa Code, both the clinician who ordered the test and the laboratory that processed the specimen are to report names and other patient demographics to IDPH. In Iowa, by law, a minor can be tested and treated for a sexually transmitted disease without parental consent.

Thanks!

Questions?

A significant portion of this information was adapted from the National STD Curriculum.

STD.UW.EDU – get CMEs by doing the modules.