**CDC STI Update**

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**DISCLOSURES**

- NONE

**Prevention**

If STI… await completion of therapy and resolution of symptoms prior to resuming sexual relations

Sexually Transmitted Diseases Treatment Guidelines, 2015

**Prevention**

- Male Condoms
  - Used correctly, HIV (-) partner 80% less likely to become infected vs. no condom use
  - Consistent condom use reduces risk GC, Chlamydia & Trichomoniasis (possibly PID)
  - Reduce risk HPV, Genital Herpes, Hep B, Syphilis & Chancroid if infected area/site covered
  - Breakage rate 2/100 (higher anal intercourse)
  - Do not use after expiration date or 5 yrs after manufacturing date
  - Polyurethane condoms comparable to latex
  - Natural (i.e. Lamb Skin)
    - Pores 10x > diameter of HIV virus; 25x > diameter Hep B
    - ONLY RECOMMENDED FOR PREGNANCY PREVENTION
  - RECOMMENDATIONS
    - New condom w/ each new sex act
    - Careful handling (nails/teeth, etc can damage)
    - Place only after penis erect
    - Water-based lubricants only w/ latex (oil-based can weaken)
    - Hold condom against base penis during withdrawal
    - Withdraw while erect
Prevention

- Contraception/Sterilization/Hysterectomy
  - NO effect on HIV transmission rate
  - Possible **INCREASE** risk of HIV transmission with Progestin only contraception (encourage condoms)
- Male Circumcision
  - **Decrease risk** of becoming HIV+ (50-60%) and some STDs in heterosexual men
  - Also effective against HPV and Genital Herpes
- **AAP/ACOG circumcision statement** – “benefits outweigh risks” [decr risk penile cancer, UTIs, genital ulcer ds and HIV]
- MSM – **no data** to support prevention in HIV transmission

- Post-exposure Prophylaxis
  - Genital Hygiene (vaginal washing, douching)
    - **INEFFECTIVE** protection against HIV and STD
  - May **INCREASE** risk BV, some STDs and HIV infx
- Antiretroviral Treatment if HIV+
  - RCT revealed **DECREASED** risk of transmission to uninfected partner by 96%
  - HSV Treatment if HSV ds & HIV+
    - RCT (N=3400+ serodiscordant heterosexual couples); 400 mg acyclovir bid
    - **NO benefit** to prevent HIV transmission to uninfected partner

Prevention

- Preexposure Prophylaxis (PreP) for HIV
  - USPHS recommends clinicians evaluate HIV(-) sexually active men & women or IDUs and consider PreP if at risk (MSM, heterosexual discordant couples, IDUs)
  - Tenofovir disoproxil fumarate (TDF) + Emtricitabine (FTC) combination

Prevention

- Retesting after Txment
  - Any person who tests + for Chlamydia, GC and women who test + Trichomonas should be rescreened within 3 months
  - Any person who receives diagnosis of syphilis should have follow-up serologic testing per current guidelines
  - Partner Services
    - Most Health Depts provide partner services for early syphilis and new dx of HIV
    - Recommended for cephalosporin-resistant GC
    - Most Health Depts **DO NOT** provide partner services for GC, Chlamydia, Trichomonas or other STDs

Prevention

- Retesting after Txment
  - BOTTOM LINE:
    - The **responsibility** for ensuring partner txment for STDs other than syphilis and HIV rests with diagnosing provider and patient
  - Expedited Partner Therapy (EPT or PDPT)
    - “Unless prohibited by law or other regulations, … providers should routinely offer EPT to heterosexual patients with Chlamydia or GC when … unsure that all partners from prior 60 days will be treated”
    - If >60 days since last sexual encounter, treat most recent sexual partner
Patient Delivered Partner Therapy (PDPT)

- Across numerous trials
  - At follow up, chlamydia prevalence decr 20%
  - GC prevalence decr 50%
- Trichomonas – possible benefit
- Syphilis – no data to support
- PDPT should not be used routinely for MSM - > 5% of MSM w/o prior dx HIV have a new dx of HIV when clinical eval for partner of GC/Chlamydia (+) index pt

Reporting & Confidentiality

- Syphilis, GC, Chlamydia, Chancroid, HIV and AIDS are reportable in EVERY state

Special Populations

- Adolescents
  - No state requires parental consent for STD care
  - Some restrict minor consent based on age and type of service (prevention, diagnosis or treatment only)
  - No state requires providers to notify parents that minor has received STD services
  - PRIVATE INSURANCE?

Adolescents

- Screening Recommendations
  - Routine screening for common STDs recommended if sexually active:
    - C. trachomatis/GC: females < 25 yoa
    - C. trachomatis/GC should be offered YMSM
    - HIV should be discussed/offered ALL adolescents
    - Syphilis: Pregnant adolescents and YMSM
    - Cervical Cancer: begin age 21
  - DON'T FORGET: HPV vaccine

Primary Prevention Adolescent/Young Adult

- HBV vaccine series
- HAV vaccine series
- HIV education (infxn, testing, transmission and implications of infxn)
- STD prevention education

Special Populations

- Children
  - Official investigations should be initiated ASAP
  - GC, Syphilis, Chlamydia if acquired after neonatal period SUGGEST sexual contact
  - HPV, vaginitis – not as clear
**Special Populations**

- **Correctional Facilities**
  - Generally expanded STD screening and treatment; esp age ≤ 35 yoa
  - Universal screen Chlamydia/GC for **women** if ≤ 35 yoa
  - Universal screen Chlamydia/GC for **men** if ≤ 30 yoa
  - Syphilis screening based on local area and institutional prevalence

- **MSM**
  - Annual screening tests for MSM
    - HIV serology
    - Syphilis serology
    - Urethral GC/Chlamydia if insertive intercourse (urine NAAT preferred)
    - Rectal GC/Chlamydia if receptive anal intercourse (rectal specimen NAAT preferred)
    - Pharyngeal GC if receptive oral intercourse

**Hepatitis C**

- Most common sexual transmission is MSM and HIV+
- Other practices assoc w/ new cases:
  - Group sex
  - Cocaine and other non-IV drugs during sex
  - Incr # partners among heterosexual HIV+

**Emerging Issues**

- **Hepatitis C**
  - HCV-RNA can be detected in blood w/in 1-3 wks after exposure
  - Avg time from exposure to anti-HCV seroconversion = 8-9 wks
  - Chronic HCV infxn develops in 70-85% of HCV infected pts
  - 60-70% of chronically infected develop active liver ds
Hepatitis C

- Transmission – occupational and perinatal can occur but uncommon
- Reportable in 49 states
- CDC/USPSTF recommends screening all person born from 1945-1965 and:
  - Prior or current IV drug use
  - Blood transfusion prior to 1992
  - Born to mother w/ HCV infection
  - Long term hemodialysis
  - Intranasal illicit drug use
  - Unregulated Tattoo
  - Other percutaneous exposures

Hepatitis C

- Screening Test
  - Antibody to HCV followed by NAAT to detect HCV RNA if +
  - If HIV+ and low CD4 – may require NAAT for screening due to false neg Ab assay potential

- Partner mgmt
  - If one, long term heterosexual partner – no change to practices necessary; discuss risk and testing need
  - Heterosex and MSM & > 1 partner (esp if HIV+) should protect partners against HCV and HIV (condoms) and discuss testing if unknown status

Hepatitis C

- All Hep C patients – test for HIV and HBV
- Primary Prevention – prevents transmission
  - No donating blood, organs, tissue or semen
  - No sharing of items w/ blood (toothbrush, razor, etc)
  - Cover cuts and sores
  - Stop IDU or follow safe needle/drug practices
- Secondary Prevention – prevents CLD
  - Avoid ETOH; Check w/ clinician for all new meds
  - Hep A and B vaccine needs assessment
  - No PEP (pre-exposure prophylaxis) effective
  - HCV testing for health-care workers after exposures (percutaneous/permucosal); neonatal testing
  - Prompt ID acute infx – early txment improves outcomes

Hepatitis C

- Pregnancy
  - Routine screening NOT recommended
  - 6/100 chance of perinatal transmission if HCV+ mother
  - C-section does not decrease risk
  - Risk incr if HCV viremia at delivery
  - 2-3X higher if co-infxn w/ HIV
  - Not transmitted via breastmilk (consider abstain if cracked or bleeding nipples)
  - NAAT recommended (maternal Ab present 18 months and lack of neonatal immune response)

Hepatitis C – Special Pops

- HIV infxn
  - Serologic eval for Hep C at initial eval
  - MSM consider periodic screening
    - Annually and in some cases more frequently
      - High prevalence; High risk sexual behavior
      - Concomitant ulcerative STD or proctitis
      - ALT not sufficient for screen; if unexplained elevation – screen
      - Small percentage fail to develop Ab’s; HCV RNA if unexplained liver ds and HCV Ab neg
    - Disease course more rapid w/ 2x risk cirrhosis
      - Treat after CD4 counts increase

Hepatitis C – Special Pops

- Syphilis
  - Presentations
    - Primary (ulcers/chancre)
    - Secondary (rash, mucocutaneous lesions, lymphadenopathy)
    - Tertiary (cardiac, gummatous lesions, tabes dorsalis, general paresis)
    - Latent (lacking clinical symptoms)
      - Early – acquired w/in last year
      - Late – all others
    - Neurosyphilis – occurs in any stage
      - Early – cranial nerve dysfunction; meningitis, stroke, AMS, auditory/ophthalmologic abnormalities
      - Late – tabes dorsalis, general paresis (10-30 yrs after infx)
Syphilis - Diagnosis

- Presumptive Dx requires 2 tests
  - Nontreponemal (VDRL or RPR)
  + Treponemal
    - FTA-ABS (fluorescent trep... AB absorbed)
    - TP-PA (T. Pallidum passive particle agglutination)
    - Enzyme immunoassays
    - Chemiluminescence immunoassays
    - Immublots
    - Rapid trep assays
- False (+) nontrep – HIV, autoimmune disorders, immunizations, pregnancy, IDU and older age

Syphilis - diagnosis

- Nontrep AB titer to follow tx response
  - 4-fold change in titer is necessary to declare significant clinical difference
    - 1:16 to 1:4 or 1:8 to 1:32
    - MUST use same test for comparison (preferably same lab)
- Nontrep titer usually decline after tx
  - “Serofast reaction” – persist for long period
- Trep usually reactive for life
  - 15-25% treated in Primary stage are non-reactive after 2-3 yrs (NOT used for tx response)

Syphilis - Treatment

- Pen G IV preferred drug all stages
- Combinations of benzathine, procaine and orals are not sufficient treatment
  - Bicillin C-R not substitute for Bicillin-LA
  - Pregnant patients w/ PCN allergy should be desensitized
- Jarisch-Herxheimer Rxn
  - Acute febrile rxn (HA, myalgia, etc) w/in 1st 24 hrs
  - Most common in early syphilis
  - Can produce preterm labor or fetal distress

Syphilis - Treatment

- Test for HIV. Retest 3 months (high prevalence area)
- Neurologic ds suspected: LP, Ocular slit-lamp exam, otologic exam

Syphilis - Treatment

- Follow-up
  - Clinical/Serologic follow up 6 & 12 months
  - Compare serologic response w/ titer at time of tx
    - Caveat laden – talk w/ specialist if possible
  - Failure of titers to decline 4 fold w/in 6-12 months might indicate failure
    - Consider CSF evaluation
  - Retreatment regimen
    - Benzathine Pen G – 2.4 million units IM weekly for 3 weeks
    - See Neurosyphilis recs if CSF +

Syphilis - Treatment

- Penicillin Allergy (NONPREGNANT)
  - Doxycycline 100 BID x 14 days
  - Tetracycline 500 QID x 14 days
- HIV = non-HIV (1°, 2°)
Syphilis – Treatment

**LATENT**

- **Early Latent**
  - Documented conversion or sustained (>2-week) 4-fold or > inc NTrep
  - Unequivocal symptoms 1°, 2°
  - Non-Trep reactive on serology test
  - Sex partner with documented 1°, 2° or early latent syphilis
  - Reactive Non-Trep + Trep tests w/ only 1 possible exposure w/in 12 mos
  - *Otherwise = Latent*
  - F/U serology 6,12,24 months

**Tertiary (Gummas, Cardiovascular)**

- HIV test and CSF exam prior to therapy

**Neurosyphilis**

- Recommended Therapy
  - Neurosyphilis and Chorea Syphilides
    - Neurosyphilis: parenteral benzathine 1.2 million units IM administered as 1 dose of 2.4 million units IM each at 1 week intervals
  - For those w/ HIV infection during therapy

**Alternatives**

- Penicillin, benzathine 1.2 million units IM

**Syphilis - Partners**

- Transmit only w/ syphilitic lesions present (mucocutaneous)
  - Uncommon after 1st year of infection
- If exposed to index case w/ 1°, 2°, Early latent
  - Eval clinically, serologically AND TREAT
  - Sex contact w/ index dx 1°, 2°, Early latent w/in 90 days – treat presumptively for early syphilis
  - Sex contact w/ index dx 1°, 2°, Early latent > 90 days
    - treat presumptively for early syphilis if sero test not available + follow-up uncertain:
      - If NEG – no tx
      - If POS – tx per staging criteria

**Syphilis Pregnancy**

- Treat appropriate for stage
- Some evidence supports 2nd dose 1 week after additional dose
- If dx after 20 weeks – US screen for congenital syphilis
  - Hepatomegaly, ascites, hydrops, fetal anemia, thickened placenta
- If tx’d after 20 weeks – risk preterm labor and/or fetal distress
  - Inadequate txmt: 1) delivery occurs w/in 30 days of initial therapy; 2) clinical signs of infxn at delivery; 3) maternal titer 4-fold higher than pretreatment at delivery

**Pelvic Inflammatory Disease (PID)**

**Recommended Regimen**

- Syphilis and Chorea Syphilides
  - Parenteral benzathine 1.2 million units IM administered as 1 dose of 2.4 million units IM each at 1 week intervals
Pelvic Inflammatory Disease

- Clinical syndrome associated with ascending spread of microorganisms from the vagina or cervix to the endometrium, fallopian tubes, ovaries, and contiguous structures.
- Comprises a spectrum of inflammatory disorders, including any combination of endometritis, salpingitis, tubo-ovarian abscess, and pelvic peritonitis.

Risk Factors

- Adolescence
- History of PID
- Infected with or a history of gonorrhea or chlamydia
- Male partners with gonorrhea or chlamydia
- Multiple sex partners
- Current douching
- Insertion of IUD
- Bacterial vaginosis
- Oral contraceptive use (in some cases)
- Demographics (socioeconomic status)

Microbial Etiology

- Most cases of PID are polymicrobial
- Most common pathogens
  - *N. gonorrhoeae*: recovered from cervix in 30%–80% of women with PID
  - *C. trachomatis*: recovered from cervix in 20%–40% of women with PID
  - *N. gonorrhoeae* and *C. trachomatis* are present in combination in approximately 25%–75% of patients

Sequelae

- Approximately 25% of women with a single episode of PID will experience sequelae, including ectopic pregnancy, infertility, or chronic pelvic pain.
- Tubal infertility occurs in 8% of women after one episode of PID, in 20% of women after two episodes, and in 50% of women after three episodes.

Screening

- Screen and treat for chlamydia or gonorrhea to reduce the incidence of PID.
- Chlamydia screening is recommended for
  - Sexually-active women 25 and under annually;
  - Sexually-active women >25 at high risk;
  - Pregnant women in the first trimester; and
  - Retest pregnant women 25 and under and those at increased risk for chlamydia during the third trimester
- Gonorrhea screening is recommended for
  - Sexually-active women 25 and under;
  - Previous gonorrhea infection;
  - Diagnosed with another STD;
  - New or multiple sex partners;
  - Inconsistent condom use;
  - Engaged in commercial sex work or drug use.

Minimum Criteria in the Diagnosis of PID

- Uterine tenderness, or
- Adnexal tenderness, or
- Cervical motion tenderness
- Higher PPV if:
  - Sex active young woman (esp adolescents)
  - Female at STI clinic
  - High prevalence GC/Chlamydia in area

Mid or non-specific sx’s (bleeding, dyspareunia, vaginal discharge); LOW THRESHOLD
### Additional Criteria to Increase Specificity of PID Diagnosis

- Oral temperature >38.3°C (101°F)
- Abnormal cervical or vaginal mucopurulent discharge
- Presence of abundant numbers of WBCs on saline microscopy of vaginal fluid
- Elevated erythrocyte sedimentation rate
- Elevated C-reactive protein
- Cervical infection with gonorrhea or chlamydia

### Presumptive Txment

- Initiate in sexually active w/ pelvic or lower abd pain if no other cause found
- Diff Dx:
  - Ectopic, Appy, Ovarian Cyst, Functional Pain
  - Rx will not hurt Dx and Mgmt of other issues

### PID Treatment Regimens

- CDC-recommended oral regimen A
  - Ceftriaxone 250 mg intramuscularly in a single dose, plus
  - Doxycycline 100 mg orally two times a day for 14 days
  - Metronidazole 500 mg orally two times a day for 14 days

- CDC-recommended oral regimen B
  - Cefixime 2 g intramuscularly in a single dose, and Probencid 1 g orally in a single dose, plus
  - Doxycycline 100 mg orally two times a day for 14 days
  - Metronidazole 500 mg orally two times a day for 14 days

- CDC-recommended oral regimen C
  - Other parenteral third-generation cephalosporin (e.g., Cefotaxime, Ceftriaxone), plus
  - Doxycycline 100 mg orally two times a day for 14 days
  - Metronidazole 500 mg orally two times a day for 14 days

### PID Parenteral Regimens

- CDC-recommended parenteral regimen A
  - Cefotetan 2 g intravenously every 12 hours, or
  - Cefoxitin 2 g intravenously every six hours, plus
  - Doxycycline 100 mg orally or intravenously every 12 hours

- CDC-recommended parenteral regimen B
  - Clindamycin 900 mg intravenously every eight hours, plus
  - Gentamicin loading dose intravenously or intramuscularly (2 mg/kg), followed by maintenance dose (1.5 mg/kg) every eight hours. Single daily gentamicin dosing (3–5 mg/kg) may be substituted.

- Transition to oral regimen after 24-48 hours of clinical improvement
Alternative Parenteral Regimen

- Ampicillin/Sulbactam 3 g intravenously every six hours, plus
  Doxycycline 100 mg orally or intravenously every 12 hours

- It is important to continue either regimen A or B or alternative
  regimens for 24 hours after substantial clinical improvement
  occurs, and also to complete a total of 14 days of therapy with
  - Doxycycline 100 mg orally twice a day, or
  - Clindamycin 450 mg orally four times a day

IM Regimens

<table>
<thead>
<tr>
<th>Recommended Intramuscular/Oral Regimens</th>
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<tbody>
<tr>
<td>Amoxicillin 500 mg IM or 500 mg PO 3 times daily</td>
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<tr>
<td>Doxycycline 100 mg orally twice a day for 10 days</td>
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<tr>
<td>Metronidazole 500 mg orally twice a day for 7 days</td>
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<tr>
<td>Tetracycline 500 mg orally twice a day for 10 days</td>
</tr>
<tr>
<td>Clindamycin 300-600 mg IM or PO 3 times a day for 10 days</td>
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Alternative and third-generation cephalosporins (e.g., cefixime or cefuroxime) may also be considered.

Partner Management

- Male sex partners of women with PID should be examined and treated:
  - If they had sexual contact with the patient during the 60 days preceding the patient’s onset of symptoms
  - If a patient’s last sexual intercourse was >60 days before onset of symptoms or diagnosis, the patient’s most recent partner should be treated

Partner Management (continued)

- Male partners of women who have PID caused by *C. trachomatis* or *N. gonorrhoeae* are often asymptomatic.

- Sex partners should be treated empirically with regimens effective against both *C. trachomatis* and *N. gonorrhoeae*, regardless of the apparent etiology of PID or pathogens isolated from the infected woman.

Special Considerations

- IUDs
  - Incr risk PID usually confined first 3 weeks after insertion
  - Do not need to remove
  - If no improvement w/in 48-72 hrs, consider removal
  - Data primarily w/ copper and non-hormonal devices

QUESTIONS?

- Thanks for attending!