New Guidelines for Detection and Treatment of Sexually Transmitted Infections

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• There are no relevant financial relationships with any commercial interests to disclose

CDC 2014: Top 9 Updates For Primary Care Providers

1) CT/ GC screening recommendations
2) Recommendations for GC/CT diagnostic tests
3) New-ish chlamydia treatment
4) Changes to gonorrhea recommended/alternative therapy
5) Partner management guidelines
6) HPV vaccine and Primary HPV screening
7) New genital warts treatment
8) Trichomonas screening, diagnosis, and treatment
9) Genital herpes testing

Routine Screening: Cervical Chlamydia

• CDC (2010)
  – Annually in sexually active women ≤ 25 years old
  – Older women with risk factors
  – If practice-site prevalence is ≥ 3% (CA STD Control Branch)
• USPSTF (2007)
  – All sexually active non-pregnant women ≤ 24 [A]
  – Older women who are at increased risk [A]
  – Recommend against routinely screening women ≥ 25, whether pregnant or not, if not at increased risk [C]
Are the Wrong Women Screened for Ct?

- 20-50% of women in target age range are not screened
- Yet, in many systems, screening rates for women over age 25 are equal to women 25 and younger

So what??
- Ct rates in women over 25 are <1%; decline with age
  - Chlamydia infects the columnar epithelium of the cervical ectropion; recedes with aging
- As prevalence decreases, positive predictive value declines

Strategies for Improving Ct Screening

*Provider Level*

- Screening procedures clear to *all* office staff
- Unlink Chlamydia screening from pelvic exam
  - With NAAT, vaginal sample is preferred
- Practice “opportunistic prevention”
  - Screen at problem-oriented visits if necessary
- “Automate” office work flow
  - Kit on chart or exam room prep table in advance based on age or risk behaviors
Routine STI Screening: Gonorrhea

- CDC (2010)
  - Women under 25 years of age who are at increased risk for infection
  - Older women with risk factors
  - If PSP is > 1% (CA STD Control Branch)
- USPSTF (2005)
  - Screen all sexually active women, including pregnancy, if at increased risk for infection [B]
  - Do not screen men and women who are at low risk for infection [D recommendation]

USPSTF: Increased Risk for GC Infection

- Under 25 years of age
- New or multiple sex partners
- Previous GC or other STDs
- Inconsistent condom use
- Commercial sex work
- Drug use

Targeted Screening: Risk Factors

Ct screening in women ≥ 26 years old, or
GC screening in women of any age, PSP <1%
- History of GC, chlamydia, or PID in the past 2 years
- More than 1 sexual partner in the past year
- New sexual partner within 90 days
- Reason to believe that a sex partner has had other partners in the past year
Syphilis, HIV screening
- Sexual history, partner behaviors, local prevalence

1) STD Screening for Women

- Sexually active adolescents & through age 25
  - Routine chlamydia and gonorrhea screening
  - Other STDs based on risk
- Women over 25 years of age
  - STD screening and testing based on risk
- Pregnant women
  - Chlamydia
  - Gonorrhea (<26 years of age or risky behaviors)
  - HIV
  - Syphilis serology
  - Hepatitis B sAg
  - Hepatitis C (if high risk)

CDC 2014
GC+Ct Screening Recommendations

- Nucleic acid amplification tests (NAAT) are preferred
  - Highly accurate: >98% sensitivity; >99% specificity
  - Men: first catch urine sample preferred
  - Women: vaginal swab preferred
    - Urine, cervical, LBC samples slightly less accurate
    - Sample endocervix only if speculum exam being done
  - In asymptomatic heterosexuals who engage in oral or anal sex, CDC does not recommend pharyngeal or anal samples
  - MSM: screen each of oropharynx, anus, and urethra (urine) for men having contact at these sites

<table>
<thead>
<tr>
<th>Site of Infection</th>
<th>% of Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rectal only</td>
<td>21%</td>
</tr>
<tr>
<td>Urethral only</td>
<td>15%</td>
</tr>
<tr>
<td>Pharyngeal only</td>
<td>36%</td>
</tr>
<tr>
<td>Rectal and urethral</td>
<td>6%</td>
</tr>
<tr>
<td>Rectal and pharyngeal</td>
<td>12%</td>
</tr>
<tr>
<td>Urethral and pharyngeal</td>
<td>5%</td>
</tr>
<tr>
<td>All 3 sites</td>
<td>5%</td>
</tr>
</tbody>
</table>

Kent C, Chaw J, Wong W et al., Clinical Inf Dis 2005; 41:67-74

Distribution Of GC By Anatomical Site In MSM Attending STI Clinics

- 90% of urethral infections were symptomatic
- Only 16% of rectal infections were symptomatic

Prevalence Of GC By Screened Anatomical Site In MSM

![Graph showing prevalence of GC by screened anatomical site in MSM](image)

2) NAAT Vaginal Swab Is Preferred Specimen Source

- Sensitivity is equal or greater to cervical swabs or urine
- Self-collection option well accepted women of all ages
- Less specimen processing required at clinical site than with urine

Hobbs STD 2008, Chernesky STD 2005
Contact Testing for STI Exposure

- Test asymptomatic persons with high risk sexual exposure (new or multiple sexual partners) for
  - Gonorrhea
  - Chlamydia
  - Syphilis
  - HIV
- Maybe: HSV-2 serology
- No contact testing for
  - HSV (culture), HPV (DNA)
  - HBV, HBC (strategy for HBV is vaccination)

CDC 2010: Screening for Hepatitis B

- Have you previously been vaccinated for Hepatitis B?
  - Yes...no further evaluation
  - No...consider being vaccinated if HB risk factors
- If HB vaccine is offered, pre-vaccination HB serology
  - Is not cost effective in low prevalence groups,
  - Is cost effective in high prevalence adult populations
    - IDU, MSM, sexual contacts of chronic carriers, persons from endemic countries
  - If screened, give 1st dose of vaccine at same time

CDC 2010: Screening for Hepatitis C

- Sexual transmission is very uncommon
- Candidates for targeted screening
  - Blood transfusion from a donor who later tested positive for hepatitis C
  - Injected illegal drugs, even if experimented a few times many years ago
  - Transfusion or organ transplant before 7/1992
  - Recipient of clotting factor(s) made before 1987
  - Ever been on long-term kidney dialysis
  - Evidence of liver disease (e.g., abnormal LFTs)

Recommendations for Identification of Chronic Hep C Virus Infection, Persons Born 1945–1965

MMWR 2012;61(RR04):1-18

- Adults born during 1945–1965 should receive one-time testing for HCV without prior ascertainment of HCV risk, and
- All persons identified with HCV infection should receive a brief alcohol screening and intervention, followed by referral to appropriate care services for HCV infection
Testing for STI Co-Infection

If positive for

<table>
<thead>
<tr>
<th>Condition</th>
<th>Test for</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlamydia</td>
<td>GC, syphilis, HIV</td>
</tr>
<tr>
<td>GC</td>
<td>Chlamydia, syphilis, HIV</td>
</tr>
<tr>
<td>Syphilis</td>
<td>Chlamydia, GC, HIV</td>
</tr>
<tr>
<td>Primary herpes</td>
<td>Chlamydia, GC, syphilis, HIV</td>
</tr>
<tr>
<td>Recurrent herpes</td>
<td>(?)... may be long standing</td>
</tr>
<tr>
<td>Trichomoniasis</td>
<td>(?)... may be long standing</td>
</tr>
<tr>
<td>Ext genital warts</td>
<td>(?)... may be long standing</td>
</tr>
<tr>
<td>BV, candida</td>
<td>Not STIs, therefore don’t screen</td>
</tr>
</tbody>
</table>

Diagnostic Testing for GC and Ct

- **Women**
  - Abnormal vaginal discharge
  - Abnormal vaginal bleeding
  - Dyspareunia, chronic pelvic pain, PID
  - Mucopurulent cervicitis
  - Cervical friability
  - Unexplained infertility

- **Men**
  - Dysuria
  - Urethral discharge
  - Testicular pain

Indications for Treatment

Gonorrhea (GC) + Chlamydia (Ct)

- Positive GC or Ct screening test
- Sexual partner with known GC or Ct
- Presumptive therapy of mucopurulent cervicitis or urethritis (treat both)
- Pelvic inflammatory disease (treat both)

**CDC 2010: Lower Genital Tract Chlamydia**

- Preferred treatment
  - Azithromycin 1 gm orally, directly observed
    - First line treatment in pregnancy
  - Doxycycline 100 mg PO BID for 7 days
    - Avoid prolonged sun exposure (photosensitivity)
- Alternative treatment
  - Ofloxacin 300 mg PO BID for 7 days
  - Levofloxacin 500 mg PO QD for 7 days
  - Erythromycin base or EES QID for 7 days
- NOTE: Ciprofloxacin not effective!
3) Chlamydia Treatment

Proposed Changes

Proposed Alternative Regimen (non-pregnant):
- Doxycycline (delayed release) 200 mg QD x 7 d
  - Equally efficacious to BID doxy, less GI side effects
  - More $$$

Proposed Alternative Regimen (pregnant*):
- Amoxicillin 500 mg po TID x 7 days
  - CT persistence documented in vitro after treatment prompted removal from recommended to alternate

CDC 2010: Anogenital Gonorrhea

- Recommended regimens
  - Preferred: ceftriaxone 250 mg IM + dual therapy
  - If IM not an option: cefixime 400 mg PO + dual tx
- Dual therapy drugs...either
  - Azithromycin 1 gram PO, or
  - Doxycycline 100 mg BID for 7 days
- Why dual therapy??
  - Prevent (or delay) GC cephalosporin resistance
  - Co-treat “for chlamydia”, even if NAAT is negative
  - Administered on the same day
  - Preferably, simultaneously and under direct observation

CDC 2010: Anogenital Gonorrhea

- Alternative oral cephalosporins
  - Cefpodoxime 400 mg PO, or
  - Cefuroxime axetil 1 gram PO
- Alternative single IM dose
  - Ceftizoxime 500 mg
  - Cefotaxime 500 mg
  - Cefoxitin 2 gm
- Alternative regimen if cephalosporin allergic
  - Azithromycin 2 grams PO x single dose
  - Perform test of cure

4) Gonorrhea Dual Therapy

Uncomplicated Genital, Rectal, or Pharyngeal Infections

Ceftriaxone 250 mg IM in a single dose

PLUS

Azithromycin 1 g orally (preferred) or
Doxycycline-100 mg BID x 7 days

Regardless of CT test result

Proposed: Move doxycycline from recommended to alternative for dual therapy
5) Gonorrhea Treatment Alternatives

Anogenital Infections

**ALTERNATIVE CEPHALOSPORINS:**

- Cefixime 400 mg orally once
  
  **PLUS**

- Dual treatment with azithromycin 1 g (preferred) or doxycycline 100 mg BID x 7 days, regardless of CT

**In Case of Severe Allergy:**

- Azithromycin 2 g orally once (Caution: GI intolerance, emerging resistance)

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**Gonorrhea Treatment Alternatives**

Anogenital Infections

Proposed:

- Gentamicin 240 mg IM or 5mg/kg IM + azithromycin 2g orally or
- Gemifloxacin 320 mg orally + azithromycin 2g orally

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**Test of Cure After Ct or GC Treatment**

- Not after high efficacy, single dose treatment
- Exceptions...perform test of cure
  - Pregnancy
  - Noncompliant with therapy
  - Persistent symptoms despite therapy
  - Suspect early reinfection after adequate therapy
- Multi-day antibiotics with high failure rate
  - e.g., Erythromycin TID for 7 days
- Avoid non-culture tests within 3 weeks of treatment, since dead organisms may be detected

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**Suspected GC Treatment Failure After Recommended Dual Therapy**

CULTURE: If GC culture not available, call your local health department, in CA, call the STD Control Branch at 510 620 3400

REPEAT TREATMENT with different regimen: Gemifloxacin 320 mg + AZ 2g OR gentamicin 240 mg IM + AZ 2g

REPORT: To your local health department STD program within 24 hours, or call CDC 404-639-8659 for advice

TREAT PARTNERS: Within 60 days with same regimen as patient receives

TEST OF CURE (TOC): Patient returns in 7-14 days for TOC culture + NAAT

* If reinfection suspected, repeat treatment with CTX 250 mg IM + AZ 1g

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**Check List: Management of Ct and GC**

- Ensure timely and appropriate treatment
  - Within 14 days of specimen collection
- Test for other STDs
  - GC, syphilis, HIV
- Patient education and counseling
- Report case to the local health department
- Schedule follow-up test in 3 months
- Ensure that sex partners are treated
  - All partners in the past 2 months
Ct & GC Screening and Testing
Post-Treatment
• Re-testing: women treated for chlamydia or GC should be re-tested in 3 months
  – In young women, past infection is strong predictor of repeat infection
    • 20% (14-26%) rate of new infection(s) by an untreated partner or new partner within 12 months
  – Short time to repeat positive test
  – 4x risk of PID, 2x risk of ectopic pregnancy

Retesting for Ct & GC...Improving Clinic Practice
• Initial patient counseling
  – Stress importance of retest
  – Make retest appointment at the time of treatment
• System to contact patient regarding retesting
  – Tickler system, with follow-up if no return visit
  – Reminders by mail (self-addressed letter or card)
  – Reminder phone calls, e-mails, or text messages
• Opportunistic re-testing
  – Flag chart to ensure retesting opportunity not missed
  – Test at any subsequent visit (3-12 months), but not earlier than 4 weeks from treatment

Partner Management: WHO?
• Treat ALL sexual partners within 2 months of positive gonorrhea or chlamydia test
  – Ask how many people she has had sex with during the previous 2 months
  – Ask regardless of marital/relationship status
  – If last sexual contact was longer than 2 months ago, treat most recent partner

Partner Management: HOW?
• Traditional approaches
  – Patient notification of partner
  – Provider notification of partner
  – Health department referral
• Preferred approach
  – Expedited Partner Therapy (EPT)
    • 2010 CDC STD Treatment Guidelines
    • ACOG Committee Opinion #506, ObGyn, Sept 2011
**Expedited Partner Treatment (EPT)**

- Bring Your Own Partner ("BYOP")
  - Bring her partner(s) at the time of her treatment so that both client and partner(s) can be counseled and treated
- Patient-delivered partner therapy ("PDPT")
  1. Provide patient with drugs intended for partners
  2. Prescribe extra doses of medication in the index patients' name
  3. Write prescriptions in the partners' names
     - Ideally with written instructions for the partner(s)
- Other states: [www.cdc.gov/std/ept](http://www.cdc.gov/std/ept) for US map

**5) Proposed Partner Management**

- Clinical evaluation first-line option
- Concurrent patient-partner therapy may be effective for patients with one partner
- Offer PDPT routinely to heterosexual pts with CT/GC if partner cannot be promptly treated
  - Dual therapy (cefixime 400 mg + azithromycin 1 g) is crucial if PDPT is offered

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**Routine STI Screening: HIV Serology**

- CDC (2010), USPSTF (2012)
  - Screen all individuals once between 13-64 years old
- Only if practice-site prevalence (PSP) is at least 0.1%
- Repeat annually or more often if “known risk”
- Many labs switching to 4th generation HIV antigen/antibody test (Abbott “Architect” test), with “Multispot” confirmatory test

**Routine STI Screening: Syphilis Serology**

- CDC (2010)
  - All pregnant women; otherwise no recommendation
- USPSTF (2004)
  - Recommends against routine screening of asymptomatic persons who are not at increased risk for syphilis infection [D recommendation]
  - Strongly recommends that clinicians screen persons at increased risk for syphilis infection [A]
6) HPV Vaccines

Bivalent: GSK Cervarix
- Types 16, 18
- Prevents cervical cancer
- FDA-approved for females 10-25
- 3-dose series; $365

Quadrivalent: Merck Gardasil
- Types 6, 11, 16, 18
- Prevents warts, cervical & anal cancer
- FDA-approved for females and males 9-26
- 3-dose series; $375

Nonavalent: Merck V503
- Types 6, 11, 16, 18, 31, 33, 45, 52, 58
- FDA biologics license application Dec 2013

7) Genital Wart Treatment

New recommended regimens
- Imiquimod 3.75% cream, apply daily

- Move podophyllin resin from recommended to alternative category
  - Case reports of severe systemic toxicity and due to misuse

8) Trichomonas

- Incidence/prevalence estimates
  - 1 million new infections annually
  - 3.7 million women currently infected
- Screening recommended for HIV+ women at least annually
- Proposed...
  - Consider screening women in corrections or STD clinics
  - Consider screening high risk-women (those with an STD or with new/multiple sex partners)
  - Retest women 3 months after treatment
  - NAAT can be done as soon as 2 weeks after treatment

Trichomoniasis Treatment

- Recommended regimen
  - Metronidazole 2 g PO x 1 dose
  - Tinidazole 2 g PO x 1 dose
- Proposed: HIV-infected women
  - Metronidazole 500 mg PO BID x 7days
- Alternative regimen
  - Metronidazole 500 mg PO BID x 7days
- Recommended regimen in pregnancy
  - Metronidazole 2 g PO x 1 dose
- Note:
  - Vaginal therapy is ineffective
  - Tinidazole is a Category C drug in pregnancy
9) Genital Herpes

- Incidence estimates: 776,000 new infections per year
- Prevalence estimates: 48.5 million persons infected
- Diagnosis: Currently culture and serology
- Proposed: NAATS are most sensitive and increasingly available
- Treatment: No changes proposed

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**Take It To Your Practice**
- Use the 7 categories of STI screening and testing
  - Automate office to support routine Ct screening
  - Sexual history is essential for targeted screening
  - Screening without indication = more harm than good
- Pelvic exam is unnecessary for GC and Ct screening
- Treat partners (know your state law)
- Optimize office procedures to support
  - Rescreening of patients treated within 3-12 months
  - Expedited partner therapy (BYOP, PDPT)

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**Want To Know More About STDs?**
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CDC Treatment Guidelines App for Apple and Android

Available now, FREE!
Download the app now...

Need Advice From An STD Expert? Contact Us!

Clinician Warmline
510-620-3400
stdcb@cdph.ca.gov

Reproductive Infectious Disease Resources

- Reproductive Infectious Disease Pager (24/7)
  - (415) 443-8726
- National Perinatal HIV Hotline (24/7)
  - (888) 448-8765
- Repro ID HIV listserv
  - Clinical cases, patient referrals, networking
  - Sponsored by UCSF National Clinicians’ Consultation Center, IDSOG, UCSF Fellowship in Repro Infectious Disease
  - Contact Shannon Weber at: sweber@ncc.ucsf.edu

STD Resources

California STD/HIV Prevention Training Center
- www.stdhivtraining.org
Seattle STD/HIV Prevention Training Center
- www.seattlestdhivptc.org
National Network of STD/HIV Prevention Training Centers
- www.stdhivpreventiontraining.org
CDC Treatment Guidelines
- www.cdc.gov/std/treatment