Update on Syphilis and Other STDs

Elaine Pierce, MD, MPH
HIV, STD and Hepatitis Branch
County of San Diego

Some material courtesy of Kenneth A. Katz, MD, MSc, MSCE
STD Control Officer and Senior Physician
County of San Diego

March 23, 2011

Conflict of Interest Disclosure

- No conflicts to disclose

Outline

- Chlamydia trachomatis and Neisseria gonorrhoeae
  - Local epidemiology
  - New treatment recommendation for gonorrhea
  - Expedited partner therapy
  - Screening recommendations

- Reporting requirements for STDs

- Syphilis:
  - Local epidemiology
  - Clinical course
  - Lab tests
  - Treatment
  - Public health campaign
  - Screening recommendations

The New 2010
CDC STD Guidelines


STDs Reported Among San Diego County Residents by Year, 1997–2010*

Chlamydia Rates by Gender, San Diego County, 1993-2010*

*Data for 2010 is preliminary
Gonorrhea Rates by Gender, San Diego County, 1993-2010*

<table>
<thead>
<tr>
<th>Year of Report</th>
<th>Rate Per 100,000</th>
<th>Year of Report</th>
<th>Rate Per 100,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993</td>
<td>13.1</td>
<td>2003</td>
<td>2.3</td>
</tr>
<tr>
<td>1994</td>
<td>13.7</td>
<td>2004</td>
<td>2.7</td>
</tr>
<tr>
<td>1995</td>
<td>14.3</td>
<td>2005</td>
<td>2.9</td>
</tr>
<tr>
<td>1996</td>
<td>14.9</td>
<td>2006</td>
<td>3.3</td>
</tr>
<tr>
<td>1997</td>
<td>15.5</td>
<td>2007</td>
<td>3.7</td>
</tr>
<tr>
<td>1998</td>
<td>15.9</td>
<td>2008</td>
<td>3.9</td>
</tr>
<tr>
<td>1999</td>
<td>16.4</td>
<td>2009</td>
<td>4.1</td>
</tr>
<tr>
<td>2000</td>
<td>16.8</td>
<td>2010</td>
<td>4.3</td>
</tr>
</tbody>
</table>

*Data for 2010 is preliminary.

Reported Rectal or Pharyngeal Gonorrhea Infections Males, San Diego 1997-2008

<table>
<thead>
<tr>
<th>Year of Report</th>
<th>No. of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>18</td>
</tr>
<tr>
<td>1998</td>
<td>38</td>
</tr>
<tr>
<td>1999</td>
<td>41</td>
</tr>
<tr>
<td>2000</td>
<td>50</td>
</tr>
<tr>
<td>2001</td>
<td>98</td>
</tr>
<tr>
<td>2002</td>
<td>143</td>
</tr>
<tr>
<td>2003</td>
<td>120</td>
</tr>
<tr>
<td>2004</td>
<td>160</td>
</tr>
<tr>
<td>2005</td>
<td>202</td>
</tr>
<tr>
<td>2006</td>
<td>373</td>
</tr>
<tr>
<td>2007</td>
<td>393</td>
</tr>
<tr>
<td>2008</td>
<td>142</td>
</tr>
</tbody>
</table>

*Data for 2009: 428, 2010: 563

Treatment of Gonorrhea

- **2006 Recommendations:**
  - Ceftriaxone 125 mg IM single dose
  - Or cefixime 400 mg PO single dose
- **2010 Recommendations:**
  - Ceftriaxone 250 mg IM single dose
  - Or cefixime 400 mg PO single dose (not recommended for oropharyngeal infections)
  - AND azithromycin 1 gm PO single dose
  - Or doxycycline 100 mg PO BID x 7 days

Even if chlamydia has been ruled out by a highly sensitive NAAT

Gonorrhea: The Importance of Three Site Testing

Men who have sex with men (MSM)

At San Diego County STD Clinic, 33% of gonorrhea would be missed in MSM if only urethral/urine specimens obtained

Why Rescreening is Essential

- Set up a 3 month follow up visit at the time of initial diagnosis

Expedited Partner Treatment (EPT)

- Prepare your patient to encourage his/her partner(s) to get evaluated and treated
  - County PHS only notifies partners of syphilis and (in certain circumstances) HIV exposure
- Emphasize that both partners need to wait until treatment completed before resuming sex (in the case of azithromycin, one week after taking 1 gm dose)
- Ask the question: “Do you think your partner(s) will come in for treatment?”
- California law [Health and Safety Code 120582] allows dispensing of prescription or medication for patient’s partner for CT and GC
Screening Frequency: USPSTF Recommendations

- **Chlamydia (2007):**
  - All sexually active women <=25 years old annually
  - Older women if at high risk
  - No specific recommendations for men
- **Gonorrhea (2005):**
  - Sexually active women at high risk
  - No specific recommendations for men
- **High Risk (both):**
  - Under 25 years old
  - Previous CT/GC infection
  - New or multiple partners
  - Other STDs
  - Inconsistent condom use
  - Commercial sex work
  - Drug use


STD Surveillance and Reporting

- **Dual reporting**
  - Healthcare provider
  - Laboratory
- **Required by law**
- **Confidential Morbidity Report (CMR) must be sent in**
- **NEW California CMR form,** downloadable via [www.STDSanDiego.org](http://www.STDSanDiego.org)
  - “Disease Reporting Information” section

P&S syphilis cases, by year and MSM status — San Diego County, 1988–2010*

- San Diego County, 2003–2010: 83% among MSM
- USA, 2008: 64% among MSM

P & S Syphilis Cases by Gender and Race/Ethnicity — San Diego County, 2010*

- *Data for 2010 is preliminary

Reporting of STDs under California Law

- **Legally reportable STDs**
  - Chlamydia infections, including LGV (within 7 days)
  - Chancroid (within 7 days)
  - Gonorrhea (within 7 days)
  - Pelvic inflammatory disease (within 7 days)
  - Syphilis (within 1 day)
  - Some hepatic and enteric infections (depends on infection)
  - Any unusual disease or outbreak of disease (immediately)
- **Non-reportable STDs (except if unusual or outbreaks)**
  - Herpes
  - Human papillomavirus infections
  - Trichomoniasis
  - Molluscum contagiosum
  - Scabies
  - Crabs

P & S Syphilis Cases Co-Infected with HIV, by Year — San Diego County, 2000–2010*

- *Data for 2008 is preliminary

All persons with syphilis not known to be HIV-infected should be offered an HIV test
Meeting Venues, MSM with P&S Syphilis — San Diego County, 2001–2010*

Primary & Secondary Syphilis Cases by Provider Type — San Diego County, 2009

Syphilis - Clinical course

Clinical Course

• Chancre(s)
  • Appear 10–90 days after exposure (average: 18–21 days)
  • Small red papule → ulcer with elevated border
  • Indurated
  • Typically painless
  • Very infectious (teeming with spirochetes)
  • Nontender lymphadenopathy 1–2 weeks after chancre develops
  • Lasts 2–6 weeks, then spontaneously heals without scarring

Single or multiple chancre(s) on male genitalia
Chancre – female genitalia

- On vulva: more edema than induration
- Can occur inside the vagina or on the cervix

Secondary syphilis: trunk rash

Extragenital chancres

Secondary Syphilis

Clinical course

<table>
<thead>
<tr>
<th>Exposure</th>
<th>Primary syphilis</th>
<th>Secondary syphilis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- During or after primary syphilis
- Up to 6 months after exposure
- Lasts 3–8 weeks
- Lesions on trunk, palms, soles, scrotum, genitals
- “Moth-eaten” alopecia
- Mucous patches
- Condyloma lata
- Systemic symptoms: fever, malaise, lymphadenopathy

Secondary Syphilis (contd)

- MSM and women are more likely to be diagnosed in the secondary stage
Secondary syphilis: palmar and plantar lesions

Secondary syphilis: condyloma lata

Secondary syphilis: split papules, "moth-eaten" alopecia, mucous patches

Differential Diagnosis: Secondary Syphilis

- Trunk rash
  - Pityriasis rosea
  - Drug eruption
  - Lichen planus
  - Psoriasis
  - Sarcoidosis
  - Viral exanthem, including acute HIV infection
- Palmoplantar rash
  - Erythema multiforme
  - Rocky Mountain spotted fever

What’s the Diagnosis?

Clinical Course

- Latent syphilis: no signs or symptoms
- Early latent if, in past year, one of the following:
  - Seroconversion or fourfold titer increase
  - Unequivocal symptoms of primary or secondary syphilis
  - Had sex partner with primary, secondary, or early latent syphilis
  - Had only possible exposure
- Late latent, if none of those
- 25% relapse to secondary syphilis
- Latent syphilis can last 2–20 years
**Clinical Course**

Exposure → Primary syphilis → Secondary syphilis → Latent syphilis

- Latent syphilis: no signs or symptoms
  - Early latent if, in past year, one of the following:
    - Serocoversion or fourfold titer increase
    - Unequivocal symptoms of primary or secondary syphilis
    - Had sex partner with primary, secondary, or early latent syphilis
  - Late latent, if none of those
  - 25% relapse to secondary syphilis
  - Latent syphilis can last 2–20 years

- Call us at the health department! (619) 692-8501

**Symptomatic Early Neurosyphilis Among HIV-Positive Men Who Have Sex with Men — Four Cities, United States, January 2002–June 2004**

- San Diego, Los Angeles, Chicago, NYC
- All HIV-positive MSM with syphilis
  - Symptomatic neurosyphilis: 1.7%
- 49 HIV-positive MSM with neurosyphilis
  - Primary, secondary, early and late latent patients
  - Syphilis presented as neurosyphilis in 53%
  - 45% were receiving antiretroviral therapy
  - 30% had persistent symptoms 6 months after treatment

**Neurologic Testing in Syphilis Patients**

- Also test range of motion of neck

**Neurosyphilis**

- Can occur at any stage
- Asymptomatic
- Symptomatic early or late neurosyphilis
- Neurologic history and examination
- Indications for CSF examination (CSF-VDRL, WBC, protein)
  - Neurologic or ophthalmic signs or symptoms
  - Treatment failure
  - Evidence of active tertiary syphilis
  - No longer an indication for CSF exam:
    - Late latent disease in HIV-infected individuals

**Common Laboratory Tests for Syphilis**

- Tests on lesions or tissues
  - Darkfield microscopy
  - Histopathological tests (biopsy)
  - [Molecular methods](http://www.cdc.gov/std/treatment/2006/genital-ulcers.htm#neurosyphil)
- Tests on blood (serology)
  - Nontreponemal tests
  - Treponemal tests
- Tests on cerebrospinal fluid
  - White blood cell count, protein
  - CSF-VDRL
Darkfield microscopy

- Visualization of *T. pallidum*
- Must be obtained from moist lesions (chancres, condylomata lata, mucous patches)
  - Not from intra-oral lesions
  - Not from dry lesions
- Requires trained personnel and darkfield microscope
- County of San Diego STD Clinic at Rosecrans has Darkfield examination capability

Nontreponemal Serologic Tests

- Examples: RPR and VDRL
- Indirect tests: Measure antibodies to cell damage
- Qualitative (yes/no) and quantitative (titer) results
- Titters correlate with and used to monitor disease activity
- **Need day-of-treatment titer**
- Cannot directly compare RPR and VDRL
- Titters can vary between laboratories
- Usually becomes nonreactive following treatment
  - “Serofast” (persistently reactive) in ~20%
- Biologic false positive reactions
  - Infections, connective tissue or autoimmune disease, immunoglobulin abnormalities, drug use, older age, malignancy

Treponemal Serologic Tests

- Examples
  - *T. pallidum* particle agglutination assay (TPPA)
  - Fluorescent treponemal antibody-absorption (FTA-ABS) test
  - Treponemal enzyme immunoassay (EIA)
  - Treponemal chemiluminescence immunoassay (CIA)
- Direct test: Measure antibodies to *T. pallidum* itself
- Titters do not correlate with disease activity
  - Typically reactive for life
  - 15%-25% of patients with primary syphilis revert to nonreactive after 2-3 years

Treatment of Syphilis in Adults

- **Treatment of primary, secondary, and early latent syphilis in adults**
  - Benzathine penicillin G 2.4 million units intramuscular in a single dose
    - Formulation MUST be Bicillin® L-A
  - Penicillin-allergic
    - Non-Pregnant: Doxycycline 100 mg po BID for 14 days
    - Pregnant: Desensitize, treat with penicillin G benzathine 2.4 MU IM once
- **Treatment late latent syphilis**
  - Benzathine penicillin G 2.4 million units IM in 3 weekly doses (total of 7.2 million units)
  - Nonpregnant penicillin allergic patients: doxycycline 100 mg PO BID for 28 days
Jarisch-Herxheimer Reaction

- Acute febrile reaction to dying treponemes
  - Flu-like symptoms
  - Usually occurs within 24 hours after treatment
  - Occurs most frequently with early syphilis

Management
- Advise patients about possibility of reaction
- Acetaminophen

- Might induce early labor or cause fetal distress in pregnant women, but do not delay therapy

“My partner told me he has syphilis.”

- Exposed within the last 90 days? The partner needs treatment regardless of lab test result
- Partner should not be told, “Let’s wait to see if you develop symptoms or your test turns positive”
  - Potential morbidity for partner
  - Potential for transmission by highly contagious newly-infected individual
  - Greater risk of HIV transmission by a co-infected individual
- If over 90 days and no symptoms or signs on exam, can wait for lab result to determine need for treatment

Follow-up: CDC recommendations

<table>
<thead>
<tr>
<th>Stage</th>
<th>HIV Status</th>
<th>Follow-up after treatment</th>
<th>Timeframe for 4-fold titer decline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary or secondary</td>
<td>HIV-uninfected</td>
<td>6, 12 months</td>
<td>6–12 months</td>
</tr>
<tr>
<td>HIV-infected</td>
<td>3, 6, 9, 12, 24 months</td>
<td>6–12 months</td>
<td></td>
</tr>
<tr>
<td>Latent</td>
<td>HIV-uninfected</td>
<td>6, 12, 24 months</td>
<td>12–24 months</td>
</tr>
<tr>
<td>HIV-infected</td>
<td>6, 12, 18, 24 months</td>
<td>12–24 months</td>
<td></td>
</tr>
</tbody>
</table>

Follow-up: Practical approach

<table>
<thead>
<tr>
<th>Stage</th>
<th>HIV Status</th>
<th>Follow-up after treatment</th>
<th>Timeframe for 4-fold titer decline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary or secondary</td>
<td>HIV-uninfected</td>
<td>Every 3–6 months</td>
<td>6–12 months</td>
</tr>
<tr>
<td>HIV-infected</td>
<td>Every 3–6 months</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Latent</td>
<td>HIV-uninfected</td>
<td>Every 3–6 months</td>
<td>12–24 months</td>
</tr>
<tr>
<td>HIV-infected</td>
<td>Every 3–6 months</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Screening Recommendations

- HIV:
  - CDC (2008): screen everyone between 13 – 64 (not risk based)
- MSM:
  - Screen for CT, GC, syphilis every 3 to 6 months, depending on level of risk behaviors

CDC screening recommendations for syphilis

- Pregnancy
  - First visit
  - Also at 28 and 32 weeks in high-prevalence areas
- MSM
  - Every year
  - More frequently if
    - Multiple or anonymous partners
    - Have sex in conjunction with illicit drug use
    - Use methamphetamine
    - Have sex partners who participate in those activities

http://www.cdc.gov/std/treatment/2006/specialpops.htm#specialpops4
Elaine Pierce, MD, MPH  
Former STD Control Officer  
HIV, STD and Hepatitis Branch, Health and Human Services Agency  
County of San Diego

**We All Test**

- Aimed at gay men and other MSM  
- Register to receive text and/or email reminders to test for syphilis every 3 or 6 months  
- Launched April 2010

**Questions?**

Kenneth.Katz@sdcounty.ca.gov  
www.STDSanDiego.com  
STD Clinical Consultation  
Pager: (877) 217-1816 (8 a.m.–5 p.m., M–F, except major holidays)  
Provider STD Reporting:  
(619) 692-2501; Fax (619) 692-8541  
To subscribe to the emailed monthly report, send an email to std@sdcounty.ca.gov with “Join” in the subject line