STD Epidemiology, California and Sacramento Data

Stakeholder’s Meeting
September 27th, 2012

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Health Officer
Sacramento County
# Sexually Transmitted Diseases

<table>
<thead>
<tr>
<th><strong>Bacterial</strong></th>
<th><strong>Viral</strong></th>
<th><strong>Protozoal</strong></th>
<th><strong>Ectoparasites</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlamydia</td>
<td>HPV</td>
<td>Trichomonas</td>
<td>Lice</td>
</tr>
<tr>
<td>Gonorrhea</td>
<td>HSV</td>
<td></td>
<td>Scabies</td>
</tr>
<tr>
<td>Syphilis</td>
<td>HIV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chancroid</td>
<td>HepB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LGV</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Granuloma</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>inguinale</td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Shigella</strong></td>
<td><strong>HepA</strong></td>
<td>Entamoeba</td>
<td><strong>BV</strong></td>
</tr>
<tr>
<td><strong>E. coli</strong></td>
<td><strong>HepC</strong></td>
<td>Giardia</td>
<td></td>
</tr>
<tr>
<td>Mycoplasma</td>
<td><strong>CMV</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ureplasma</td>
<td><strong>Molluscum</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enterobacteria</td>
<td><strong>HHV-8</strong></td>
<td></td>
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</tr>
</tbody>
</table>
STD Complications

- Fetal Death*
- Low Birthweight*
- Congenital Infection*
- Upper Tract Infection
- Systemic Infection
- Infertility
- Ectopic Pregnancy*
- Chronic Pelvic Pain
- HIV Infection*
- Cancer*

* Potentially Fatal
## STD Morbidity California and United States, 2009

<table>
<thead>
<tr>
<th>Condition</th>
<th>California reported cases</th>
<th>US reported cases</th>
<th>US estimated incidence* (millions)</th>
<th>US estimated prevalence* (millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlamydia</td>
<td>146,476</td>
<td>1,244,180</td>
<td>2,800,000</td>
<td>1.9</td>
</tr>
<tr>
<td>Gonorrhea</td>
<td>23,876</td>
<td>301,174</td>
<td>675,000</td>
<td>NA</td>
</tr>
<tr>
<td>Syphilis (P&amp;S)</td>
<td>2,005</td>
<td>13,997</td>
<td>21,000</td>
<td>NA</td>
</tr>
<tr>
<td>Congenital syphilis (&lt; 1 yr)</td>
<td>54</td>
<td>427</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>HPV</td>
<td>NA</td>
<td>NA</td>
<td>6,200,000</td>
<td>20</td>
</tr>
<tr>
<td>HSV</td>
<td>NA</td>
<td>NA</td>
<td>1,600,000</td>
<td>45</td>
</tr>
<tr>
<td>Trichomoniasis</td>
<td>NA</td>
<td>NA</td>
<td>7,400,000</td>
<td>NA</td>
</tr>
<tr>
<td>AIDS</td>
<td>3,043†</td>
<td>34,993</td>
<td>45,000</td>
<td>0.56</td>
</tr>
<tr>
<td>HIV</td>
<td>3,519†</td>
<td>NA</td>
<td>56,300</td>
<td>1.1</td>
</tr>
<tr>
<td>Hepatitis B</td>
<td>243</td>
<td>7,526</td>
<td>60,000</td>
<td>0.75</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>179,216</strong></td>
<td><strong>1,602,297</strong></td>
<td><strong>18,857,300</strong></td>
<td><strong>69.3</strong></td>
</tr>
</tbody>
</table>

* 2004 US estimates (2006 for HIV)
† 2008
Limitations of Current STD Case-Based Surveillance Systems

• Problems with underreporting and empirical treatment
• Asymptomatic infections so many cases not detected
• Cases reflect who is accessing care
• No co-morbidity data
• Limited behavioral data
Chlamydia, Gonorrhea and Syphilis
Key Characteristics
and Epidemiologic Patterns and Trends
Chlamydia, Gonorrhea, and Primary & Secondary Syphilis
California Rates, 1990–2010

Figure #1

Chlamydia

Gonorrhea

P&S Syphilis

Rev. 7/2011
Rates of Chlamydia, Gonorrhea, P&S Syphilis, and AIDS by Age Group (in years) and Gender — California, 2010

**Chlamydia**
- Female: 0, 250, 500, 750, 1,000
- Male: 0-9, 10-14, 15-19, 20-24, 25-29, 30-34, 35-44, 45+

**Gonorrhea**
- Female: 0, 1,000, 2,000, 3,000
- Male: 0-9, 10-14, 15-19, 20-24, 25-29, 30-34, 35-44, 45+

**P&S Syphilis**
- Female: 0, 5, 10, 15, 20, 25
- Male: 0-9, 10-14, 15-19, 20-24, 25-29, 30-34, 35-44, 45+

**AIDS (living 12/31/10)**
- Female: 0, 250, 500, 750, 1,000
- Male: 0-9, 10-14, 15-19, 20-24, 25-29, 30-34, 35-44, 45+
Rates of Chlamydia, Gonorrhea, P&S Syphilis, and AIDS by Race/Ethnicity and Gender — California, 2010

Note: NA/AN = Native American/Alaskan Native, A/PI = Asian/Pacific Islander
California – Chlamydia, Gonorrhea, and P&S Syphilis
Rates by Age Group (2011), Race/Ethnicity (2011), and Year

* Race data may be missing for a substantial number of cases. See the Data Limitations page for further information.

Note: Rates are per 100,000 population.
Source: California Department of Public Health, STD Control Branch
California – Chlamydia, Gonorrhea, and P&S Syphilis

Ranking of County Rates for 2011
(with 95% Confidence Intervals*)

Chlamydia

State Rate = 438

Gonorrhea

State Rate = 73.1

P&S Syphilis

State Rate = 6.5

* Confidence intervals were calculated using Poisson exact method; not shown for counties with zero cases.

Note: Rates are per 100,000 population.

Source: California Department of Public Health, STD Control Branch
Sacramento County – Chlamydia, Gonorrhea, and P&S Syphilis
Rates by Age Group (2011), Race/Ethnicity (2011), and Year

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STD Control Branch

March, 2012

Race data may be missing for a substantial number of cases. See the Data Limitations page for further information.

Note: Rates are per 100,000 population.
Source: California Department of Public Health, STD Control Branch
Chlamydia (*Chlamydia trachomatis*)

- Most common reportable STD
- Rates generally increasing
- Screening
- NAATs
- Expedited partner treatment (EPT)
- Retesting
Chlamydia, Female Rates by Race/Ethnicity and Age Group (in years)
California, 2010

8 times white rate

Rate per 100,000

Age Group
10 - 14 15 - 19 20 - 24 25 - 29 30 - 34 35 - 44 45+

Black Hispanic White
Chlamydia, Rates by Gender, California, 1990–2010
Chlamydia Rates per 100,000 Population for Females Aged 15-24 years, 2006-2010 Sacramento County, Fresno County, San Francisco County and California

<table>
<thead>
<tr>
<th></th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>California</td>
<td>2,535.8</td>
<td>2,575.7</td>
<td>2,620.2</td>
<td>2,506.2</td>
<td>2,588.4</td>
</tr>
<tr>
<td>Sacramento</td>
<td>4,007.6</td>
<td>3,880.8</td>
<td>3,557.1</td>
<td>3,751.0</td>
<td>4,190.2</td>
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<tr>
<td>Fresno</td>
<td>3,730.4</td>
<td>3,692.5</td>
<td>3,926.9</td>
<td>3,713.8</td>
<td>4,126.7</td>
</tr>
<tr>
<td>San Francisco</td>
<td>3,984.9</td>
<td>3,821.9</td>
<td>3,911.1</td>
<td>4,150.7</td>
<td>4,476.6</td>
</tr>
</tbody>
</table>
Gonorrhea (*Neisseria gonorrhoeae*)

- Fluctuating rates (big increase in 2010)
- Racial disparities
- Drug resistant strains
- Selective screening
- EPT
- Retesting
Gonorrhea
California Rates, 1913–2010

Figure #15

Rev. 7/2011
Gonorrhea, Rates by Gender, California, 1996–2010*

Gonorrhea, Female Rates by Race/Ethnicity and Age Group (in years)
California, 2010

26 times white rate
Gonorrhea Rates per 100,000 Population, 2006-2010
Sacramento County, San Francisco County, Alameda County and California

<table>
<thead>
<tr>
<th></th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>California</td>
<td>90.7</td>
<td>82.8</td>
<td>66.8</td>
<td>62.4</td>
<td>69.1</td>
</tr>
<tr>
<td>Sacramento</td>
<td>150.0</td>
<td>155.8</td>
<td>117.5</td>
<td>123.8</td>
<td>130.0</td>
</tr>
<tr>
<td>San Francisco</td>
<td>305.8</td>
<td>242.6</td>
<td>237.4</td>
<td>212.4</td>
<td>225.3</td>
</tr>
<tr>
<td>Alameda</td>
<td>153.0</td>
<td>155.1</td>
<td>122.1</td>
<td>106.4</td>
<td>121.5</td>
</tr>
</tbody>
</table>
Syphilis (*Treponema pallidum*)

- MSM epidemic
- Emerging risks
- Internet innovations
- Selective screening
- Partner management
Primary & Secondary Syphilis, Cases by Gender
California, 1996–2010

P&S Syphilis Rates, 1940-2010, California

ALL MALE
MEN WHO HAVE SEX WITH MEN
FEMALE
Venues used to meet sex partners, interviewed MSM Early Syphilis Cases, California Project Area, 2004-2011 YTD

% reporting venue use to meet sex partners

- Internet
- Social network
- Bars/clubs
- Bathhouses/sex clubs

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March, 2012 --- STD Control Branch

-- last updated 01/17/2012
Syphilis Rates per 100,000 Population, Sacramento County, San Francisco County and California

<table>
<thead>
<tr>
<th>Year</th>
<th>California</th>
<th>Sacramento</th>
<th>San Francisco</th>
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<tbody>
<tr>
<td>2006</td>
<td>5.0</td>
<td>2.2</td>
<td>29.2</td>
</tr>
<tr>
<td>2007</td>
<td>5.5</td>
<td>4.5</td>
<td>24.3</td>
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<tr>
<td>2008</td>
<td>5.8</td>
<td>6.4</td>
<td>40.0</td>
</tr>
<tr>
<td>2009</td>
<td>5.2</td>
<td>4.6</td>
<td>36.5</td>
</tr>
<tr>
<td>2010</td>
<td>5.3</td>
<td>3.6</td>
<td>42.6</td>
</tr>
</tbody>
</table>
STD Prevention and Control

• Prevent
  – Health Education and Counseling
  – Behavioral Interventions
  – Vaccination

• Detect
  – Screening of Asymptomatic Persons
  – Diagnosis of Symptomatic Persons
  – Follow-up with Sex Partners

• Treat
  – Property Treat Patients and Partners

• Report
STD Prevention Infrastructure

- Public Health Programs & Support
- Clinical Laboratories
- Healthcare Providers
- Community Resources
- Technology & Research
- Healthcare and Public Health Financing