What’s Up With STDs in the Golden State? The Epidemiology of Sexually Transmitted Diseases in California

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Michael C. Samuel, Dr.P.H.
Chief, Surveillance & Epidemiology Section
STD Control Branch, DCDC/CID/CDPH
Outline

• STD 101
• Labs’ reporting responsibility
• The Big Picture: What, How much
• Key Characteristics
  – Chlamydia
  – Gonorrhea
  – Syphilis
• Wrap up
# Sexually Transmitted Diseases

<table>
<thead>
<tr>
<th>Bacterial</th>
<th>Viral</th>
<th>Protozoal</th>
<th>Ectoparasites</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>
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<tr>
<td>LGV</td>
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<tr>
<td>Granuloma</td>
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<td></td>
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<tr>
<td>inguinale</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shigella</td>
<td>HepA</td>
<td>Entamoeba</td>
<td>BV</td>
</tr>
<tr>
<td>E. coli</td>
<td>HepC</td>
<td>Giardia</td>
<td></td>
</tr>
<tr>
<td>Mycoplasma</td>
<td>CMV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ureplasma</td>
<td>Molluscum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enterobacteria</td>
<td>HHV-8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Complications of STDs

**Infection**
- Chlamydia
- Gonorrhea
- HPV
- Hepatitis B
- Trichomonas
- HSV
- Syphilis

**Cancer**
- PID

**HIV**
- Ectopic pregnancy
- Chronic pain
- Congenital infection

**Perinatal**
- Low birth weight
- Stillbirth

**Brain/organ damage**
STD Transmission Dynamics

\[ R_0 = \beta D c \]

- \( R_0 \): Reproductive rate of infection
- \( \beta \): Transmission efficiency
- \( D \): Duration of infection
- \( c \): Number of sexual partners per unit time
STD Transmission Dynamics

Selected interventions

\[ R_0 = \beta D C \]

- Sexual decision-making, abstinence, monogamy
- Screening, timely diagnosis & effective treatment, partner care
- Condoms, microbicides, minimize exposure
STD Prevention and Control

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

• 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
- Community Resources
- Technology & Research
- Healthcare Providers
- Healthcare and Public Health Financing
Reportable STDs

• Which diseases?
  • Chlamydia
  • Gonorrhea
  • Syphilis
  • Chancroid

• By whom?
  – Provider and Laboratory

• When?
  – Within one working day -- syphilis
  – Within seven calendar days -- others

• What and how?
California Code of Regulations, Title 17, Section 2505 requires laboratories to report laboratory testing results suggestive of the following diseases of public health importance to the local health department:

<table>
<thead>
<tr>
<th>List (e)(1)</th>
<th>List (e)(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthrax, animal (<em>B. anthracis</em>)</td>
<td>Acid-fast bacillus (AFB)</td>
</tr>
<tr>
<td>Anthrax, human (<em>B. anthracis</em>)</td>
<td>Anaplasmosis/Ehrlichiosis</td>
</tr>
<tr>
<td>Botulism</td>
<td><em>Bordetella pertussis</em> acute infection, by culture molecular identification</td>
</tr>
<tr>
<td>Brucellosis, human (<em>all Brucella spp.</em>)</td>
<td><em>Borrelia burgdorferi</em> infection</td>
</tr>
<tr>
<td><em>Burkholderia pseudomallei</em> and <em>B. mallei</em></td>
<td>Brucellosis, animal (<em>Brucella spp. except Brucella canis</em>)</td>
</tr>
<tr>
<td>(detection or isolation from a clinical specimen)</td>
<td>Campylobacteriosis (<em>Campylobacter spp.</em>) (detection or isolation from a clinical specimen)</td>
</tr>
<tr>
<td>Influenza, novel strains (human)</td>
<td>Chancroid (<em>Haemophilus ducreyi</em>)</td>
</tr>
<tr>
<td>Plague, animal</td>
<td><em>Chlamydia trachomatis</em> infections, including lymphogranuloma venereum</td>
</tr>
<tr>
<td>Plague, human</td>
<td>Coccidiodomycosis</td>
</tr>
<tr>
<td>Smallpox (Variola)</td>
<td>Cryptosporidiosis</td>
</tr>
<tr>
<td>Tularemia, human (<em>F. tularensis</em>)</td>
<td><em>Cyclosporiasis</em> (<em>Cyclospora cayetanensis</em>)</td>
</tr>
<tr>
<td>Viral hemorrhagic Fever agents, animal (VHF), (e.g., Crimean-Congo, Ebola, Lassa and Marburg viruses)</td>
<td>Dengue (dengue virus)</td>
</tr>
<tr>
<td>Viral Hemorrhagic Fever agents, human (VHF), (e.g., Crimean-Congo, Ebola, Lassa and Marburg viruses)</td>
<td>Diphtheria</td>
</tr>
<tr>
<td>Encephalitis, arboviral</td>
<td><em>Escherichia coli</em>: shiga toxin producing (STEC) including <em>E. coli</em> O157</td>
</tr>
<tr>
<td><em>Giardia</em> (Giardia <em>lamblia</em>, <em>intestinalis</em>, or <em>duodenalis</em>)</td>
<td>Gonorrhea</td>
</tr>
<tr>
<td><em>Haemophilus influenzae</em> (report an incident of less than 15 years of age, from sterile site)</td>
<td>Hantavirus Infections</td>
</tr>
<tr>
<td>Hepatitis A, acute infection</td>
<td>Hepatitis E, acute infection (detection of hepatitis E virus RNA from a clinical specimen or positive serology)</td>
</tr>
<tr>
<td>Hepatitis B, acute or chronic infection (specify gender)</td>
<td>Hepatitis E, acute infection (detection of hepatitis E virus RNA from a clinical specimen or positive serology)</td>
</tr>
<tr>
<td>Hepatitis C, acute or chronic infection</td>
<td>Hepatitis E, acute infection (detection of hepatitis E virus RNA from a clinical specimen or positive serology)</td>
</tr>
<tr>
<td>Hepatitis D (Delta), acute or chronic infection</td>
<td>Hepatitis E, acute infection (detection of hepatitis E virus RNA from a clinical specimen or positive serology)</td>
</tr>
</tbody>
</table>
WHEN TO REPORT
These laboratory findings are reportable to the local health officer of the health jurisdiction where the health care provider who first submitted the specimen is located within one (1) hour (List (e)(1) diseases) or within one (1) working day (List (e)(2) diseases) from the time that the laboratory notifies that health care provider or other person authorized to receive the report. If the laboratory that makes the positive finding received the specimen from another laboratory, the laboratory making the positive finding shall notify the local health officer of the jurisdiction in which the health care provider is located within the time specified above from the time the laboratory notifies the referring laboratory that submitted the specimen. If the laboratory is an out-of-state laboratory, the California laboratory that receives a report of such findings shall notify the local health officer in the same way as if the finding had been made by the California laboratory.

HOW TO REPORT
Laboratory reports must be made in writing and give the following information:
- the date the specimen was obtained;
- the patient identification number;
- the specimen accession number or other unique specimen identifier;
- the laboratory findings for the test performed;
- the date that any positive laboratory findings were identified;
- the name, gender, address, telephone number (if known), and age or date of birth of the patient;
- the name, address, and telephone number of the health care provider who ordered the test.

The notification for List (e)(1) diseases shall be reported by telephone within one (1) hour, followed by a written report submitted by electronic facsimile transmission or electronic mail within one (1) working day, to the local health officer in the jurisdiction where the health care provider who submitted the specimen is located. The notification for List (e)(2) diseases shall be submitted by courier, mail, electronic facsimile transmission or electronic mail within one (1) working day to the local health officer in the jurisdiction where the health care provider who submitted the specimen is located. Whenever the specimen or an isolate thereof is transferred between laboratories, a test requisition with the above patient and submitter information shall accompany the specimen. The laboratory that first receives a specimen shall be responsible for obtaining the patient and submitter information at the time the specimen is received by that laboratory.

ADDITIONAL REPORTING REQUIREMENTS

ANTHRAX, BOTULISM, BRUCELLOSIS, GLANDERS, INFLUENZA, NOVEL STRAINS, MELIOIDOSIS, PLAGUE, SMALLPOX, TULAREMIA, and VIRAL HEMORRHAGIC FEVERS
Whenever a laboratory receives a specimen for the laboratory diagnosis of a suspected human case of one of these diseases, such laboratory shall communicate immediately by telephone with the Microbial Diseases Laboratory (or, for Influenza, novel strains, Smallpox or Viral Hemorrhagic Fevers, with the Viral and Rickettsial Disease Laboratory) of the Department of Public Health for instruction.

TUBERCULOSIS
Any laboratory that isolates Mycobacterium tuberculosis from a patient specimen must submit a culture to the local public health laboratory for the local health jurisdiction in which the health care provider's office is located as soon as available from the primary
Chlamydia, Gonorrhea and Syphilis
Key Characteristics and Epidemiologic Patterns and Trends
## STD Morbidity California (2012) and United States (2011)

<table>
<thead>
<tr>
<th></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>169,795</td>
<td>1,412,791</td>
<td>2,800,000</td>
<td>1.9</td>
</tr>
<tr>
<td>Gonorrhea</td>
<td>33,778</td>
<td>321,849</td>
<td>675,000</td>
<td>NA</td>
</tr>
<tr>
<td>Syphilis (P&amp;S)</td>
<td>2,955</td>
<td>13,970</td>
<td>21,000</td>
<td>NA</td>
</tr>
<tr>
<td>Congenital syphilis (&lt; 1 yr)</td>
<td>30</td>
<td>360</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>3,623†</td>
<td>32,052</td>
<td>45,000</td>
<td>0.56</td>
</tr>
<tr>
<td>HIV</td>
<td>5,973†</td>
<td>49,273</td>
<td>56,300</td>
<td>1.2</td>
</tr>
<tr>
<td>Hepatitis B</td>
<td>157†</td>
<td>2,890</td>
<td>60,000</td>
<td>0.75</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>216,311</strong></td>
<td><strong>1,833,185</strong></td>
<td><strong>18,857,300</strong></td>
<td><strong>69.4</strong></td>
</tr>
</tbody>
</table>

* 2004 US estimates (2009 for HIV)
† 2011
Chlamydia, Gonorrhea, and Primary & Secondary Syphilis
California Rates, 1990–2012

Chlamydia
- 448.9
- (N=169,795)

Gonorrhea
- 89.3
- (N=33,778)

P&S Syphilis
- 7.8
- (N=2,955)
<table>
<thead>
<tr>
<th></th>
<th>Chlamydia</th>
<th>Gonorrhea</th>
<th>P&amp;S Syphilis</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>147,605</td>
<td>24,008</td>
<td>2,023</td>
</tr>
<tr>
<td>2010</td>
<td>155,330</td>
<td>26,841</td>
<td>2,069</td>
</tr>
<tr>
<td>2011</td>
<td>164,591</td>
<td>27,460</td>
<td>2,452</td>
</tr>
<tr>
<td>2012</td>
<td>169,781</td>
<td>33,783</td>
<td>2,973</td>
</tr>
<tr>
<td>2013</td>
<td>169,800</td>
<td>38,637</td>
<td>3,500</td>
</tr>
</tbody>
</table>

% change in rate 2009-2013
- 17%          63%          76%
% change in rate 2012-2013
- -1%         13%          17%
Who Is At Risk for STDs?

- Teens & young people
- Gay/Bi men (MSM)
- Racial/ethnic minorities
- People who live in places with high STD prevalence
- People who had an STD before
Chlamydia and Gonorrhea Repeat Infection among Females
1-6 months after infection, by Data Source, 2007–2008

* Percent of first repeat case report or infection within 1-6 months. Excludes Los Angeles and San Francisco case reports as names were not available.

† 2008 repeat case reports; 2007 case repeat infection for KPNC and FP.
Factors associated with STD transmission: an abbreviated list...

• Age, race/ethnicity, sex, geography
• “Sexual Orientation”
• Racism, homophobia, ageism
• Individual risky behaviors
• Individual protective behavior
• Sexual networks
• Drugs including alcohol
• Internet, smart phone apps, social media
• Access to care; quality of care
• Individual poverty, education; and self-empowerment
• Community SES and “social capital”
• Incarceration
Rates of Chlamydia, Gonorrhea, P&S Syphilis, and AIDS by Race/Ethnicity and Gender — California, 2012

Note: NA/AN = Native American/Alaskan Native, A/PI = Asian/Pacific Islander
Socioeconomic Gradients in Infection Rates by Race/Ethnicity
California Gonorrhea Cases, 2004-2006

Yuri P. Springer, Michael C. Samuel, Gail Bolan.
American Journal of Public Health | June 2010, Vol 100, No. 6
Incidence of Syphilis among Blacks

“Shadow on the Land,” Thomas Parran, MD - 1937

Each symbol represents 3% of all Negroes studied.
Factors Linked to Racial Disparities in STD Rates

• Root Causes
  – Racism
  – Poverty, education
  – Policies and laws

• Contributing Factors
  – Lack of or reduced health care access
  – Differences in quality of health care received
  – Cultural competency of providers
  – Disproportionately high rates of incarceration
  – Gender ratio imbalances
  – Language/structural barriers
  – Unstable housing situations
  – Distrust of the (public) health system

• Transmission-Related Factors
  – Higher risk social-sexual network structure
  – Higher STD prevalence in communities
  – Longer duration of infectiousness
  – Individual sexual behavior (e.g. number of partners, condom use)
Racial Disparities Data Slides and Facilitator Use of Data Document


Racial Disparities in Sexually Transmitted Diseases (STDs) in California
(Core Slide Set Only)

Slides and Notes

March, 2009 version

Surveillance and Epidemiology Section
California Department of Public Health, STD Control Branch

Rates of Chlamydia, Gonorrhea, P&S Syphilis, and AIDS by Age Group (in years) and Gender — California, 2012

- **Chlamydia**
- **Gonorrhea**
- **P&S Syphilis**
- **AIDS (IIVng 12/31/11)**

Age Group: 0-9, 10-14, 15-19, 20-24, 25-29, 30-34, 35-44, 45+

Rate per 100,000 population

**Comparison by Gender:** Female (gray), Male (blue)
Rates:
By category
By single age

Heather S. Jacobs, Michael C. Samuel, Joan M. Chow, Gail Bolan.
Sexually Transmitted Diseases • Volume 37, Number 5, May 2010.

Note: The rate for the last category is calculated for persons aged 45 to 100 years.
Gonorrhea, Female Rates by Race/Ethnicity and Age Group (in years)
California, 2012

15 times white rate
California – Chlamydia, Gonorrhea, and P&S Syphilis
Rates by County, 2009

Note: Rates are per 100,000 population.
Source: California Department of Public Health, STD Control Branch
Gonorrhea, Total Cases, California, 2009

Proportion of CA Cases | # of Cases per Census Tract
---|---
Top 5% | 34 - 86
Next 20% | 14 - 33
Next 25% | 7 - 13
Bottom 50% | 1 - 6
No Cases |
Gonorrhea TOTAL Cases, ALAMEDA, 2008

Proportion of CPA Cases
- Top 5%: 24 - 69
- Next 20%: 10 - 23
- Next 25%: 5 - 9
- Bottom 50%: 1 - 4
- No Cases
- (excluded LA & SF)

Detention Facilities
- ▲ County Juvenile Hall
- ● County Jail
- ◆ State Youth Authority
- ★ State Prison
- ● Federal

Legend

0 2.5 5 10 Miles
DATA ➔ ACTION
There’s No Place Like Home: L.A. County’s I Know Home Test Kit Program for CT and GC Targeting Young Women of Color
Hey Teens: Put a CAP on it!

California Condom Access Project (CAP)
Chlamydia (*Chlamydia trachomatis*)

- Most common reportable STD
- Rates generally increasing
- Often asymptomatic
- Screening
- NAATs
- Expedited partner treatment (EPT)
- Retesting
Chlamydia, Rates by Gender, California, 1990–2012

Rate per 100,000 population

Year

Female

Male
Estimated Chlamydia Screening Coverage (HEDIS), Females Age 15–24, USA and California, 1999–2010

Source: National Committee on Quality Assurance; California DHCS Division of Medi-Cal Managed Care; Kaiser Permanente Northern CA; California DPH Office of Family Planning
Percent of Chlamydia Tests by Test Type
California Annual Lab Survey, 1996–2009

† NAATs: Nucleic acid amplification tests
Gonorrhea (*Neisseria gonorrhoeae*)

- Fluctuating rates
- Racial disparities
- Drug resistant strains
- Selective screening
- EPT
- Retesting
Gonorrhea
California Rates, 1913–2012
Gonorrhea, Rates by Gender, California, 1990–2012

Rate per 100,000 population

Year

1990 '92 '94 '96 '98 2000 '02 '04 '06 '08 2010 '12

Male
Female

CDPH Public Health
Rev. 8/2013
March 2014 --- STD Control Branch
Gonorrhea, Rates by Gender, California, 1996–2013*
Gonorrhea Cases, BUTTE County, 2001-2013
Gonorrhea Cases, SHASTA County, 2001-2013
Gonorrhea Cases, ALAMEDA County, 2001-2013

Year:
- 2001
- 2002
- 2003
- 2004
- 2005
- 2006
- 2007
- 2008
- 2009
- 2010
- 2011
- 2012
- 2013

Cases:
- 0
- 500
- 1000
- 1500
- 2000
- 2500
Gonorrhea Rates for 15-19 Year-olds by Census Tract, Sacramento County
2010-2012 Combined Data

3-Year Average Rate per 100,000
- 0
- < 100
- 100 - 199.9
- 200 - 399.9
- 400 - 599.9
- 600 - 999.9
- 1,000 +
- 1-4 cases

School Districts
Zip codes
Juvenile Hall
Zip codes 95823, 95838 & 95815

27.6% of 15-19 year-old cases could not be geocoded
Gonorrhea Rates for 15-19 Year-olds by Census Tract, Sacramento County
2010-2012 Combined Data

27.6% of 15-19 year-old cases could not be geocoded
Development of GC Resistance

1945: Penicillin first used widely for TX

1936: Sulfanilamides introduced as TX

1976: Pen-R NG first identified in US (in CA)

1986: GISP started by CDC

1989: Penicillin no longer recommended for TX by CDC

2001: First cephalosporin TX failures in Japan

1991: QRNG first identified in US (in HI)

2002: Fluoroquinolones no longer recommended for TX by CA

2007: Fluoroquinolones no longer recommended for TX by CDC

2010: Dual TX recommended for TX by CDC

Ceph-R identified in US???
Gonococcal Isolate Surveillance Project (GISP)
Location of clinics and regional laboratories, United States, 2009
Gonococcal Isolate Surveillance Project (GISP), Percent of *Neisseria Gonorrhoeae* Isolates with Decreased Susceptibility or Resistance to Ciprofloxacin in Five California STD Clinics, 1990–2009

Note: Resistant isolates have MICs $\geq 1$ $\mu$g ciprofloxacin/mL. Isolates with decreased susceptibility have MICs of 0.125 – 0.5 $\mu$g ciprofloxacin/mL.

STD Clinic Sites: Long Beach (ended participation in 2007), Los Angeles (added in 2003), Orange, San Diego, San Francisco
* Cefixime was dropped from testing panel in 2007 and reinstated in 2009

** Cefpodoxime was added to testing panel in 2009

Yikes!
Neisseria gonorrhoeae Isolates with CDC “Alert” Values or Decreased Susceptibility, CA GISP* Data, 1987-2013 YTD

*Gonococcal Isolate Surveillance Project

Note: Cefixime was dropped from testing panel in 2007 and reinstated in 2009; Cefpodoxime was added to testing panel in 2009 and dropped in 2013
Syphilis (*Treponema pallidum*)

- MSM epidemic
- Emerging risks
- Internet innovations
- Selective screening
- Partner management
Total Syphilis (all stages)
California Rates, 1913–2012

Rate per 100,000 population

Year

Primary & Secondary Syphilis, Cases by Gender
California, 1996–2012

P&S Syphilis Rates, 1940-2012, California

ALL MALE

MEN WHO HAVE SEX WITH MEN

FEMALE

Number of Cases

Year


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Primary & Secondary Syphilis, Rates by Gender
California, 1996–2013*
Number of Men who Have Sex with Men, Primary & Secondary Syphilis Cases by Region and Year
Risk Factors by Sexual Orientation, Interviewed Early Syphilis Cases, CA 2012 YTD

<table>
<thead>
<tr>
<th></th>
<th>MSM (n=2282)</th>
<th>Male Hetero (n=200)</th>
<th>Female (n=121)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV positive*</td>
<td>62.2%</td>
<td>14.3%</td>
<td>0.9%</td>
</tr>
<tr>
<td>Anonymous sex partners</td>
<td>59.3%</td>
<td>39.5%</td>
<td>15.7%</td>
</tr>
</tbody>
</table>

*HIV percentages based on cases with known status

-- last updated 10/10/2012
Venues used to meet sex partners,
Interviewed MSM Early Syphilis Cases, California, 2005-2012 YTD
Reported Use of Internet Sites by Year, MSM Early Syphilis Cases, CA 2005-2012
(reported use of sites is not mutually exclusive)

- **Facebook**
- **MySpace**
- **Men4Now**
- **BBRT/Bareback**: 5.5%
- **Craigslist**: 6.0%
- **Gay.com**
- **Manhunt**: 2.4%
- **Grindr**: 8.7%
- **Adam4Adam**: 23.4%

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STD Control Branch

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-- last updated 01/15/2013
Update: Smart Phone Apps

- Grindr
  - Most mentioned app
  - About half HIV-positive
- Jack’d
- Scruff
- Growler
- Blndr
  - Heterosexual
Clients can anonymously (or not) email e-cards to sex partners
inSPOT used for patient self-referral
Testing Resources

Manhunt Cares values educating members about ways to test for HIV and other STIs (often referred to as sexually transmitted infections). Utilizing our corporate partners and trusted government-funded health organizations, we've created several testing options. Click on any of the buttons below to learn more or watch the video to learn more about online testing with GetTested.

Worldwide Testing Resources:

- MANHUNT CARES
- United States Testing Resources:
  - ORDER A HOME HIV & HEP CT TEST
  - PUBLIC HEALTH CENTERS
  - SEARCH FOR A DOCTOR
  - ONLINE CONFIDENTIAL TESTING

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SAFE SEX IS GREAT SEX
• CalREDIE
  – California Reporting Disease Information Exchange

• ELR
  – Electronic Laboratory Reporting
Data Submission to CalREDIE, by Month & Source

Number of incidents reported to CalREDIE

- ELR
- Provider Portal
- LHJ Manual Entry
CALREDIE DATA INPUT SOURCES

2012

LHJ 93%

Provider 7%

OCT - DEC 2013

LHJ 69%

ELR 20%

Provider 12%
Cohort 1: LabCorp, ARUP Mayo

Cohort 2: Adventist Hospital group (13 hospitals)

Cohort 3: ½ of Dignity Hospital Group*; Tenet Hospital Group*

Orange County Public Health Lab

Cohort 4: Sutter Health; tbd Kais
std.ca.gov
Alameda County – Chlamydia, Gonorrhea, and P&S Syphilis
Rates by Age Group (2012), Race/Ethnicity (2012), 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. Alameda County includes Berkeley City Health Jurisdiction.
Source: California Department of Public Health, STD Control Branch
## Alameda County – Chlamydia, Gonorrhea, and Early Syphilis Cases and Rates Tables for 2012

<table>
<thead>
<tr>
<th>Gender &amp; Age Group</th>
<th>Chlamydia</th>
<th>Gonorrhea</th>
<th>P&amp;S Syphilis</th>
<th>Early Latent Syphilis</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cases</td>
<td>Percent¹</td>
<td>Rate</td>
<td>Cases</td>
<td>Percent¹</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COUNTY TOTAL</td>
<td>6,508</td>
<td>100.0%</td>
<td>422.4</td>
<td>1,543</td>
<td>100.0%</td>
</tr>
<tr>
<td>Male Total</td>
<td>2,156</td>
<td>33.1%</td>
<td>285.2</td>
<td>900</td>
<td>58.3%</td>
</tr>
<tr>
<td>Ages</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 – 9</td>
<td>2</td>
<td>0.1%</td>
<td>2</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>0 – 14</td>
<td>9</td>
<td>0.4%</td>
<td>15.0</td>
<td>5</td>
<td>0.6%</td>
</tr>
<tr>
<td>15 – 19</td>
<td>396</td>
<td>16.7%</td>
<td>227.7</td>
<td>103</td>
<td>11.5%</td>
</tr>
<tr>
<td>20 – 24</td>
<td>678</td>
<td>31.5%</td>
<td>1,258.6</td>
<td>211</td>
<td>25.3%</td>
</tr>
<tr>
<td>25 – 29</td>
<td>291</td>
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<td>481.9</td>
<td>38</td>
<td>5.9%</td>
</tr>
<tr>
<td>30 – 34</td>
<td>242</td>
<td>5.6%</td>
<td>208.5</td>
<td>50</td>
<td>7.8%</td>
</tr>
<tr>
<td>35 – 44</td>
<td>89</td>
<td>2.0%</td>
<td>26.5</td>
<td>25</td>
<td>3.9%</td>
</tr>
<tr>
<td>Other/Specified</td>
<td>8</td>
<td>0.2%</td>
<td>-</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Female Total</td>
<td>4,352</td>
<td>65.9%</td>
<td>554.5</td>
<td>642</td>
<td>41.6%</td>
</tr>
<tr>
<td>Ages</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 – 9</td>
<td>1</td>
<td>0.0%</td>
<td>1</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>0 – 14</td>
<td>56</td>
<td>1.3%</td>
<td>123.8</td>
<td>11</td>
<td>1.7%</td>
</tr>
<tr>
<td>15 – 19</td>
<td>1,302</td>
<td>31.0%</td>
<td>2,063</td>
<td>199</td>
<td>22.4%</td>
</tr>
<tr>
<td>20 – 24</td>
<td>677</td>
<td>16.6%</td>
<td>1,215.9</td>
<td>97</td>
<td>15.1%</td>
</tr>
<tr>
<td>25 – 29</td>
<td>281</td>
<td>6.6%</td>
<td>481.9</td>
<td>38</td>
<td>5.9%</td>
</tr>
<tr>
<td>30 – 34</td>
<td>242</td>
<td>5.6%</td>
<td>208.5</td>
<td>50</td>
<td>7.8%</td>
</tr>
<tr>
<td>35 – 44</td>
<td>89</td>
<td>2.0%</td>
<td>26.5</td>
<td>25</td>
<td>3.9%</td>
</tr>
<tr>
<td>Other/Specified</td>
<td>9</td>
<td>0.2%</td>
<td>-</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Not Specified</td>
<td>2</td>
<td>0.1%</td>
<td>-</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Gender &amp; Race/Ethnicity</td>
<td>Chlamydia</td>
<td>Gonorrhea</td>
<td>P&amp;S Syphilis</td>
<td>Early Latent Syphilis</td>
<td>Population</td>
</tr>
<tr>
<td></td>
<td>Cases</td>
<td>Percent¹</td>
<td>Rate</td>
<td>Cases</td>
<td>Percent¹</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COUNTY TOTAL</td>
<td>6,509</td>
<td>100.0%</td>
<td>422.4</td>
<td>1,543</td>
<td>100.0%</td>
</tr>
<tr>
<td>Female Total</td>
<td>4,352</td>
<td>65.9%</td>
<td>554.5</td>
<td>642</td>
<td>41.6%</td>
</tr>
<tr>
<td>American Indian/Alaska Native</td>
<td>8</td>
<td>0.4%</td>
<td>413.7</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>235</td>
<td>11.5%</td>
<td>107.8</td>
<td>18</td>
<td>4.8%</td>
</tr>
<tr>
<td>Black/African American</td>
<td>590</td>
<td>48.6%</td>
<td>584.2</td>
<td>227</td>
<td>87.9%</td>
</tr>
<tr>
<td>Latino/Latinx</td>
<td>609</td>
<td>78.7%</td>
<td>345.2</td>
<td>55</td>
<td>16.4%</td>
</tr>
<tr>
<td>White</td>
<td>281</td>
<td>13.2%</td>
<td>102.9</td>
<td>37</td>
<td>11.0%</td>
</tr>
<tr>
<td>Other/Multi Specified</td>
<td>2</td>
<td>28.2%</td>
<td>29.2</td>
<td>1</td>
<td>11.1%</td>
</tr>
<tr>
<td>Male Total</td>
<td>2,156</td>
<td>33.1%</td>
<td>285.2</td>
<td>900</td>
<td>58.3%</td>
</tr>
<tr>
<td>American Indian/Alaska Native</td>
<td>5</td>
<td>0.6%</td>
<td>262.1</td>
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<td>0.0%</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>118</td>
<td>11.2%</td>
<td>56.7</td>
<td>45</td>
<td>9.2%</td>
</tr>
<tr>
<td>Black/African American</td>
<td>481</td>
<td>45.5%</td>
<td>542.8</td>
<td>221</td>
<td>45.5%</td>
</tr>
<tr>
<td>Latino/Latinx</td>
<td>237</td>
<td>22.4%</td>
<td>130.7</td>
<td>88</td>
<td>18.0%</td>
</tr>
<tr>
<td>White</td>
<td>218</td>
<td>20.4%</td>
<td>85.3</td>
<td>134</td>
<td>25.7%</td>
</tr>
<tr>
<td>Other/Multi Specified</td>
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<td>61.0%</td>
<td>412.4</td>
<td>412</td>
<td>41.6%</td>
</tr>
</tbody>
</table>

¹ Gender specific age groups and race/ethnicity percent calculations exclude "Not Specified" from the denominator.
² Overall county rates were calculated using the July 1 county population estimates from the Department of Finance.

Note: Rates are per 100,000 population.

Source: California Department of Public Health, STD Control Branch
STOPPING COMPUTER VIRUSES

Michael C. Samuel, Dr.P.H.
Michael.Samuel@cdph.ca.gov
510.620.3198