National Chlamydia Update

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Chlamydia Epidemiologist
Surveillance and Data Management Branch
Region I, Wells Beach, Maine
June 4-5, 2012
A who, a where, and some what’s

- Who are you? Where’s Catherine?
- What’s going on with chlamydia nationally?
  - Preliminary 2011 data!
  - Challenges in current surveillance strategies
- What’s going on with re-screening and re-infection in other regions?
- What do you think?
• Continuing to work with CDC

csatterwhite@kumc.edu
Policy for CDC Release of IPP Data
March 15, 2010

Data collected through the Infertility Prevention Project (IPP) function as part of a multi-region, multi-site surveillance network. IPP data collection is not intended as research; IPP data are collected for public health surveillance purposes, primarily to monitor chlamydia and gonorrhea prevalence and guide STD prevention and control efforts. Data are collected through IPP and compiled and stored by CDC. Resources permitting, CDC will make IPP data available for use by all IPP Regional Coordinators, CDC investigators, and other interested parties, as defined in this document (below). No personal identifiers will be promoted and stored.

Attachment 1.

Data obtained or counties, as outlined below

Infertility Prevention Project

Data Analysis and Transfer Request Form

Please complete the following items and forward these materials to the CDC IPP Epidemiologist. Selected items below may not be relevant to every data request. If that is the case, please mark these as "Not applicable." Use as much space as needed to address key points below. Questions about this application can be directed to the CDC IPP Epidemiologist (Lizzi Torrone, igff0@cdc.gov, 404-639-8948).

Study Name:

Date Request Initiated:

Principal Investigators:
(Names, Institutions, Telephone #, Email)
Lizzi Torrone
Epidemiologist
404-639-8948
etorrone@cdc.gov
WHAT’S GOING ON WITH CHLAMYDIA NATIONALLY?
Chlamydia—Rates by Sex, United States, 1995–2011*

NOTE: As of January 2000, all 50 states and DC have regulations that require the reporting of chlamydia cases.

*Data from 2011 are preliminary, as of March 2, 2012
Chlamydia—Rates by Race/Ethnicity, United States, 2002–2011*

Rate (per 100,000 population)

- American Indians/Alaskan Natives
- Asians/Pacific Islanders
- Blacks
- Hispanics
- Whites

Year

NOTE: As of January 2000, all 50 states and DC have regulations that require the reporting of chlamydia cases.

*Data from 2011 are preliminary, as of March 2, 2012
### Chlamydia—Rates by Age and Sex, United States, 2011*

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Men</th>
<th>Rate (per 100,000 population)</th>
<th>Women</th>
<th>Rate (per 100,000 population)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-19</td>
<td>793.1</td>
<td>15-19</td>
<td>3,387.9</td>
<td></td>
</tr>
<tr>
<td>20-24</td>
<td>1,288.6</td>
<td>20-24</td>
<td>3,652.5</td>
<td></td>
</tr>
<tr>
<td>25-29</td>
<td>635.3</td>
<td>25-29</td>
<td>1,285.8</td>
<td></td>
</tr>
<tr>
<td>30-34</td>
<td>332.6</td>
<td>30-34</td>
<td>556.3</td>
<td></td>
</tr>
<tr>
<td>35-39</td>
<td>157.7</td>
<td>35-39</td>
<td>223.2</td>
<td></td>
</tr>
<tr>
<td>40-44</td>
<td>95.5</td>
<td>40-44</td>
<td>101.3</td>
<td></td>
</tr>
<tr>
<td>45-54</td>
<td>43.3</td>
<td>45-54</td>
<td>34.3</td>
<td></td>
</tr>
<tr>
<td>55-64</td>
<td>13.0</td>
<td>55-64</td>
<td>9.8</td>
<td></td>
</tr>
<tr>
<td>65+</td>
<td>3.3</td>
<td>65+</td>
<td>2.0</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3,652.5</td>
<td>Total</td>
<td>636.0</td>
<td></td>
</tr>
</tbody>
</table>

*Data from 2011 are preliminary, as of March 2, 2012
Chlamydia—Percentage of Reported Cases by Sex and Selected Reporting Sources, United States, 2011*

*HMO = health maintenance organization; HD = health department.

NOTE: These categories represent 70.4% of cases with a known reporting source. Of all cases, 14.1% had a missing or unknown reporting source.

*Data from 2011 are preliminary, as of March 2, 2012
What do chlamydia case report data tell us?

- Chlamydia is the most commonly reported nationally notifiable disease.
- Chlamydia is most commonly diagnosed among young females.
- Many females (and an increasing proportion of men) are diagnosed in private healthcare settings.
- There are health inequities.
What do chlamydia case report data NOT tell us?

- The incidence and prevalence of chlamydia.
  - Duration of infection is unknown
  - Doesn’t account for changes in
    - Screening coverage
    - Test technology used
    - Empiric treatment
    - Reporting practices
Chlamydia Screening Coverage* Trends
(Women Aged 16-20 and 21-24 years, HEDIS)

*Among women enrolled in commercial or Medicaid plans who had a visit where they were determined to be sexually active

Percentage of Nucleic Acid Amplification Tests (NAATs) Used Among Women, Infertility Prevention Project, 2000–2010
What do chlamydia case report data NOT tell us?

- The incidence and prevalence of chlamydia.
  - Duration of infection is unknown
  - Doesn’t account for changes in
    - Screening coverage
    - Test technology used
    - Empiric treatment
    - Reporting practices

“The continued increase [in case reports]…likely represents a continued increase in screening, expanded use of more sensitive tests, and more complete national reporting, but it also may reflect a true increase in morbidity.”
What do chlamydia case report data NOT tell us?

- The incidence and prevalence of chlamydia.
  - Duration of infection is unknown
  - Doesn’t account for changes in
    • Screening coverage
    • Test technology used
    • Empiric treatment
    • Reporting practices

- Additional data sources are needed which
  - Include negative tests
  - Can account for test technology
  - Consistent screening criteria and reporting practices
  - Representative of the general population
**Reported Gonorrhea and Chlamydia Test Volume***:
Infertility Prevention Project, 2000–2010

*Total number of valid tests (positive and negative)*
Number of Chlamydia Tests among Women Aged 15-24 Tested in Family Planning Clinics By Region, 2010

NOTE: As of 1997, all 10 U.S. Department of Health and Human Services (HHS) regions, which represent all 50 states, the District of Columbia, and outlying areas, reported chlamydia positivity data.
Chlamydia—Trends in Positivity Rates Among Women aged 15–24 years Tested in Family Planning Clinics, by Region, IPP, 2006–2010

* 2009 percent positivity for Region VI previously published in the 2009 Surveillance report has been corrected.
What do the national IPP reported in the surveillance report data tell us?

- There’s a lot of testing going on!
- (Crude) positivity is increasing in family planning clinics
- NAAT use is increasing.
What do the national IPP reported in the surveillance report data NOT tell us?

- The incidence of chlamydia and trends in prevalence
- National IPP data reported in the surveillance report do not account for:
  - Changes in screening coverage or criteria
  - Changes in test technology
  - Changes in clinics included and the amount of data reported
  - Changes in “clinic mix”
- Additional data analyses and sources are needed
  - Regional and local analyses
  - Using national IPP data: Catherine!
  - Consistent screening criteria and reporting practices
  - Representative of the general population

- To account for unmeasured factors (e.g., clinic-based screening practices and general population characteristics), analyzed data at the clinic level

- Regression analysis to estimate annual change in positivity
  - Adjusted for test type, race, age, and region
  - Limited to clinics reporting ≥3 years of data (~2500 clinics, 49 states)

- Positivity remained stable from 2004–2008 (OR: 1.00; CI: 0.99, 1.00; P=0.69)

- Limitation: Unable to account for changes within clinics over time

Satterwhite et al, *Sexually Transmitted Diseases*, 2012
What do the national IPP reported in the surveillance report data NOT tell us?

- The incidence of chlamydia and trends in prevalence
- National IPP data reported in the surveillance report do not account for:
  - Changes in screening coverage or criteria
  - Changes in test technology
  - Changes in clinics included and the amount of data reported
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  - Using national IPP data: Catherine!
  - Consistent screening criteria and reporting practices
  - Representative of the general population

Estimated 40% decline over 10 years

Datta et al, STD, 2012

No change in prevalence over 10 years

Datta et al, STD, 2012
Limitations of NHANES for chlamydia surveillance

- Low prevalence + small sample sizes = unstable estimates
  - Unable to provide age*gender*race/ethnicity specific estimates
- Data are only available at the national level
- Data are not timely
What’s going on with chlamydia nationally?

- Case reports are increasing
  - Likely reflects increasing screening and use of NAATs
- Positivity and prevalence estimates suggest stable or decreasing morbidity

- Multiple data sources are used to supplement traditional case report surveillance.
  - Inherent biases in each data source
  - May not reliably estimate trends in burden of disease
- Opportunities to reconsider how to monitor chlamydia morbidity
WHAT’S GOING ON WITH RE-SCREENING AND RE-INFECTION REGIONALLY?
Highlights from three presentations at the 2012 National STD Prevention Conference

- Trends in Chlamydia Retesting Rates Among Males and Females (Kelly Opdyke, Region II)
- A Closer Look: Barriers and Opportunities to Improve Chlamydia Retesting Rates (Charlie Rabins, Region V)
- Using Prevalence Monitoring Data to Evaluate Rescreening and Reinfection Rates (Sarah Goldenkranz, Region X)

https://cdc.confex.com/cdc/std2012/webprogram/meeting.html
Trends in Chlamydia Re-testing Rates Among Males and Females (Kelly Opdyke, Region II)

- **Objective:**
  - Describe annual re-screening rates and repeat positivity among patients attending facilities participating in the Region II.

- **Data source**
  - Extracted limited variables from electronic lab data
  - Each project area created unique ID
  - Calendar years 2007 to 2009

- **Outcome measures**
  - Re-screening rate: Proportion of clients with a CT+ test who were re-screened 1-6 months after 1\textsuperscript{st} test date*
  - Repeat positivity: Among clients re-screened within 1-6 months, proportion who had a 2\textsuperscript{nd} positive CT test result in that time frame

*Treatment date not available
## Re-screening rates and repeat positivity by sex, 2007-09 (Region II)

<table>
<thead>
<tr>
<th></th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unique clients with a CT+ test</td>
<td>32,153</td>
<td>31,618</td>
</tr>
<tr>
<td>Re-screened in 1-6 months</td>
<td>14%</td>
<td>22%</td>
</tr>
<tr>
<td>Positivity among those re-screened</td>
<td>25%</td>
<td>16%</td>
</tr>
</tbody>
</table>
### Re-screening rates and repeat positivity by facility type, 2007-09 (Region II)

<table>
<thead>
<tr>
<th></th>
<th>STD</th>
<th>FP</th>
<th>JDC</th>
<th>CHC</th>
<th>Univ HC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unique clients</td>
<td>45,472</td>
<td>11,925</td>
<td>1,246</td>
<td>1,074</td>
<td>166</td>
</tr>
<tr>
<td>with a CT+ test</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Re-screened in 1-6</td>
<td>15%</td>
<td>23%</td>
<td>21%</td>
<td>35%</td>
<td>36%</td>
</tr>
<tr>
<td>months</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positivity among those</td>
<td>23%</td>
<td>14%</td>
<td>33%</td>
<td>12%</td>
<td>15%</td>
</tr>
<tr>
<td>re-screened</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

FP: Family Planning; JDC: Juvenile Detention Center; CHC: Community Health Center; Univ HC: University Health Center
A Closer Look: Barriers and Opportunities to Improve Chlamydia Retesting Rates (Charlie Rabins, Region V)

- **Objective**
  - Identify re-screening/re-infection rates by client demographics and facility type.

- **Data sources**
  - IPP data, using 1) a concatenation of client name and DOB created at the project area or 2) unique ID created by screening site or lab
  - July-Dec 2009, “followed” for 12 months

- **Outcomes**
  - Re-screening rate: Proportion of clients with a CT+ test who were re-screened 31-180 days or 31-364 days after 1st test date*
  - Repeat positivity: Proportion who had a 2nd CT+ test result in 31-364 days (denominator=all females with a CT+ test)

*Treatment date not used
## Re-screening rates and repeat positivity (Region V)

<table>
<thead>
<tr>
<th>Category</th>
<th>#</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screened</td>
<td>113,504</td>
<td>-</td>
</tr>
<tr>
<td>CT+</td>
<td>8,496</td>
<td>(7%)</td>
</tr>
<tr>
<td>Re-screened in 31-180 days</td>
<td>2,237</td>
<td>(26%)</td>
</tr>
<tr>
<td>Re-screened in 31-364 days</td>
<td>3,116</td>
<td>(37%)</td>
</tr>
<tr>
<td>Re-infected $\geq$1 in 31-364 days</td>
<td>847</td>
<td>(10%)</td>
</tr>
</tbody>
</table>
Percent of females testing positive who were re-screened within 31-364 days by race/ethnicity (Region V)

- American Indian: 19%
- Asian/PI: 24%
- White: 34%
- Multi-race: 35%
- Hispanic: 36%
- Non-Hispanic: 37%
- Other: 38%
- Black: 39%
- Unknown race: 41%
- Unknown ethnicity: 43%
Percent of females testing positive within 31-364 days of initial CT+ test by race/ethnicity (Region V)

- Asian/Pl: 5%
- Unknown race: 6%
- Hispanic: 8%
- White: 8%
- Other: 9%
- Unknown ethnicity: 9%
- American Indian: 10%
- Non-Hispanic: 10%
- Multi-race: 11%
- Black: 12%
Using Prevalence Monitoring Data to Evaluate Re-screening and Re-infection Rates (Sarah Goldenkranz, Region X)

- **Objective**
  - Why are re-screening rates so low?
    - Low client return rates?
    - Providers missing opportunities to re-test?

- **Data source**
  - Title X Client Visit Record (CVR)

- **Outcomes**
  - Client return rate: Proportion of clients that returned within 90-365 days (3-12 months) post treatment
  - Missed opportunity rate: Proportion of clients who returned that were not re-screened
Of 139,603 total females clients in 2009...
Of 3,329 total females clients with a positive CT test in 2009...

2,030 did not return (61%)
+ 493 who returned were not re-screened (38%)

2,523 were not re-screened (76%)

Low client return rates + many missed opportunities = few women re-screened
Best Practices for the Prevention and Early Detection of Repeat Chlamydial and Gonococcal Infections:

Effective Partner Treatment and Patient Retesting Strategies for Implementation in California Health Care Settings

These guidelines were developed by:
California Department of Public Health (CDPH) Sexually Transmitted Disease (STD) Control Branch, San Francisco Department of Public Health STD Prevention and Control Services, Los Angeles County Department of Public Health STD Program, California Family Health Council, California STD/HIV Prevention Training Center, and CDPH Office of Family Planning, as members of the California Infertility Prevention Project Collaborative.

Return rate
• Counseling
• Reminder systems (e.g., text messages)

Missed opportunities
• Flag charts
• Expedited options
• Self-collected mailed specimens?

Summary

- Consistently low re-screening rates and high positivity among those re-screened
  - Differences by facility type and patient demographics
- When calculating re-screening and re-infection rates, consider...
  - Necessary data elements may not be present in existing datasets (e.g., unique ID, date of treatment)
  - What follow-up time period to use (e.g., 6 months? 12 months?)
  - Who to include in the denominator?
- When trying to improve low re-screening rates, consider...
  - What’s driving low re-screening rates in the clinic?
Acknowledgements

- LaZetta Grier
- Catherine Satterwhite
- Hillard Weinstock
- Kelly Opdyke
- Charlie Rabins
- Sarah Goldenkranz
- David Fine
WHAT DO YOU THINK?
Thank you!
ETorrone@cdc.gov

For more information please contact Centers for Disease Control and Prevention

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E-mail: cdcinfo@cdc.gov  Web: http://www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.