Background

- Chlamydia trachomatis is the number one curable sexually transmitted disease reported nationally and in New York State (NYS; 1, 2).
- Chlamydia trachomatis infection is a frequent asymptomatic and one of the leading causes of infertility among women of childbearing age (3).
- Repeat infections are associated with a more chronic and long-term sequelae (4).

- A high prevalence of Chlamydia has been observed in individuals previously treated for C. trachomatis infection (5).

- Re-infection rates and risk factors for repeat infection among NYS residents are not well defined.

- Characteristics of women with repeat infections with Chlamydia trachomatis

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Methods

- Study Design

- Determination of the number of women who became re-infected with Chlamydia during the study period and the characteristics associated with this was the primary objective of this study.

- Study Setting

- Retrospective cohort study was conducted at the New York State Department of Health, Bureau of STD Prevention and Epidemiology.

- Included in the analysis were women who had a confirmed diagnosis of Chlamydia trachomatis at any time during the study period, January 1, 2006 to December 31, 2010.

- Women with Chlamydia infection with only one reported diagnosis were excluded from the study.

- Patients were eligible if they had a confirmed positive result of a Chlamydia trachomatis cultures or antibody test (RPR or TPHA).

- Excluded were women who were co-infected at the time of initial diagnosis with other sexually transmitted infections.

- Limitations of the study included the lack of information regarding patient follow-up and the lack of information regarding the duration of symptoms.

- Exclusion criteria included: women who were co-infected at the time of initial diagnosis with other sexually transmitted infections.

- Statistical Analysis

- McNemar’s test was used to compare the proportion of women with repeat infection between the age groups.

- Logistic regression was used to identify factors associated with repeat infection.

- Multivariate analysis was used to assess the impact of various factors on repeat infection.

- Odds ratios (OR) and 95% confidence intervals (95% CI) were calculated.

- Results (continued)

### Results

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Women with</th>
<th>Women without</th>
<th>OR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age Group</td>
<td>Re-infection</td>
<td>Re-infection</td>
<td></td>
</tr>
<tr>
<td>15-19</td>
<td>10,053</td>
<td>11,507</td>
<td>1.4 (1.2-1.7)</td>
</tr>
<tr>
<td>20-24</td>
<td>39,169</td>
<td>40,971</td>
<td>1.1 (0.9-1.2)</td>
</tr>
<tr>
<td>25-29</td>
<td>33,157</td>
<td>35,311</td>
<td>0.9 (0.8-1.1)</td>
</tr>
<tr>
<td>30-44</td>
<td>20,263</td>
<td>22,309</td>
<td>0.8 (0.7-0.9)</td>
</tr>
<tr>
<td>45+</td>
<td>14,512</td>
<td>16,377</td>
<td>0.8 (0.7-0.9)</td>
</tr>
</tbody>
</table>

#### Multivariate Analysis (see Table 2)

Risk factors associated with repeat infection included:

- 15-19 years old: black race and Hispanic ethnicity
- 20-24 years old: black race, Hispanic ethnicity, and private insurance
- 25-29 years old: Hispanic ethnicity
- 30-44 years old: Hispanic ethnicity, Medicaid insurance, and civilian service
- 45+ years old: Hispanic ethnicity, Medicaid insurance, and civilian service

#### Time to Re-Infection

- 20% of 10-14 year old women were re-infected within 1 year versus 8% of 18-44 year old women (see Figure 2).
- 18% of re-infections occurred within 6 months. 28% occurred within 6 months of the initial diagnosis.
- Median time to first re-infection was 270 days (range 222 to 1,704 days).
- Data not shown

Bibliography