Behavioral risk factors for heterosexual adolescents perinatally or behaviorally infected with HIV

New York City
July 2007 through June 2010

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BACKGROUND
# Sexual risk behaviors of high school students, 2009

<table>
<thead>
<tr>
<th></th>
<th>US</th>
<th>NYC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ever had sex</td>
<td>46%</td>
<td>39%</td>
</tr>
<tr>
<td>No condom used at last sex</td>
<td>39%</td>
<td>29%</td>
</tr>
<tr>
<td>Four or more lifetime sex partners</td>
<td>14%</td>
<td>15%</td>
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</tbody>
</table>

_CDC. Youth Risk Behavior Survey (YRBS), 2009_
New HIV diagnoses among adolescents ages 13-19, 2009

<table>
<thead>
<tr>
<th></th>
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<th>NYC</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>42,959</td>
<td>3,669</td>
</tr>
<tr>
<td>Diagnoses</td>
<td>2,057 (4.8%)</td>
<td>161 (4.4%)</td>
</tr>
</tbody>
</table>

**NYC DOHMH Annual Surveillance Statistics, 2009*
HIV transmission risk category for persons 15-24 living with HIV/AIDS, NYC, 2009

N=4,094

- MSM, Heterosexual, IDU, Blood products, Unknown 61%
- Perinatal 39%

Data reported to the NYC Department of Health and Mental Hygiene through December 31, 2010
Study of sexual risk transmission behaviors of adolescents infected with HIV

<table>
<thead>
<tr>
<th></th>
<th>Perinatally infected</th>
<th>Behaviorally acquired</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex in past 3 months</td>
<td>58%</td>
<td>82%</td>
</tr>
<tr>
<td>Unprotected sex</td>
<td>32%</td>
<td>66%</td>
</tr>
<tr>
<td>HIV disclosure to sex partner</td>
<td>21%</td>
<td>20%</td>
</tr>
</tbody>
</table>

*Koenig et al. 2010. JAIDS*
Factors associated with reduction in unprotected sex

- Knowledge of HIV+ status associated with 53% reduction (Marks, 2005)

- Engagement in HIV care associated with at least 3 times reduction (Metsch, 2008)
Objective

• Compare sexual risk behaviors between heterosexual adolescents infected with HIV perinatally and behaviorally
METHODS
NYC health department HIV partner services Field Services Unit established June 2006

- Public health issues addressed:
  - Concurrent HIV/AIDS diagnoses
    - Diagnosed with AIDS within 31 days of HIV
  - Delayed linkage to care
    - ~25% with no VL/CD4 1 year after initial diagnosis
  - Limited HIV partner services reported outside of NYC health-department STD clinics
New York City health department
HIV partner services (PS)

FSU offers PS to all patients newly diagnosed and selected previously diagnosed at FSU affiliated sites

HIV-infected patient

Partner (sex or needle sharing)

Elicit → Notify → Test for HIV → Link to care
Field Services Unit sites, NYC 2011

FSU site type and number
- Hospitals (26)
- TB Clinics (10)
- Other sites (72)

2009 HIV diagnosis rate per 100,000 population by UHF Neighborhood
- 4.7 - 19.1
- 19.2 - 38.2
- 38.3 - 57.1
- 57.2 - 155.3
- Non-residential zones
FSU sample population
July 2007 through June 2010

- HIV-infected 15-24 year olds
- Heterosexual (excluded MSM and IDU)
- Interviewed for PS
- Sexually active in past 12 months
  - At least one sex partner
  - Pregnant
Outcome measures

- Chart review and face-to-face patient interviews
  - Sexual behavior:
    - Pregnant, STI diagnosis, number of sex partners, condom use, have children
  - Substance use
  - Partner services:
    - Partners named, notified, tested
  - Linkage to care:
    - Appointment kept within 3 months
Statistical analyses

- Chi-square and Fischer exact tests for categorical variables
- T-tests for continuous variables
RESULTS
FSU sample population
ages 15-24, July 2007 – June 2010

299 adolescents

Excluded

MSM: 139
IDU: 5
Not sexually active: 12

143 (48%) adolescents

51 (36%) perinatally infected

92 (64%) heterosexually infected
<table>
<thead>
<tr>
<th></th>
<th>Perinatally infected (N=51)</th>
<th>Heterosexually infected (N=92)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>Age (mean)</td>
<td>19.3</td>
<td></td>
<td>20.9</td>
</tr>
<tr>
<td>Female</td>
<td>33</td>
<td>65%</td>
<td>66</td>
</tr>
<tr>
<td>Race/ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>33</td>
<td>65%</td>
<td>60</td>
</tr>
<tr>
<td>Hispanic</td>
<td>15</td>
<td>29%</td>
<td>29</td>
</tr>
<tr>
<td>White/Other</td>
<td>3</td>
<td>6%</td>
<td>3</td>
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## Sexual behaviors

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<tr>
<td><strong>Sex partners, mean (range)</strong></td>
<td>2.0 (1-36)</td>
<td>2.1 (1-20)</td>
<td>0.40</td>
</tr>
<tr>
<td><strong>STI diagnosis</strong></td>
<td>13 25%</td>
<td>16 17%</td>
<td></td>
</tr>
<tr>
<td><strong>Have children (females)</strong></td>
<td>6 18%</td>
<td>22 33%</td>
<td>0.18</td>
</tr>
<tr>
<td><strong>Pregnant</strong></td>
<td>16 48%</td>
<td>25 42%</td>
<td>0.70</td>
</tr>
</tbody>
</table>
Condom Use in the Past 12 Months

Perinatally infected

- Never: 5%
- Sometimes: 59%
- Always: 36%

Heterosexually infected

- Never: 6%
- Sometimes: 72%
- Always: 22%

$P < .0001$
Drug and alcohol use

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<tbody>
<tr>
<td>Drug use*</td>
<td>11</td>
<td>23</td>
<td>0.64</td>
</tr>
<tr>
<td>Alcohol use**</td>
<td>13</td>
<td>16</td>
<td>0.76</td>
</tr>
</tbody>
</table>

*Non-injection drug use in past 12 months
**5 or more drinks on one occasion in the past 30 days
## Partner Services outcomes

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</thead>
<tbody>
<tr>
<td>Named partners</td>
<td>38 75%</td>
<td>64 88%</td>
<td>0.06</td>
</tr>
<tr>
<td>Sex partners named</td>
<td>68</td>
<td>144</td>
<td>--</td>
</tr>
<tr>
<td>Partners with Negative/unknown serostatus</td>
<td>60 88%</td>
<td>118 82%</td>
<td>0.24</td>
</tr>
<tr>
<td>Notified of exposure to HIV</td>
<td>24 40%</td>
<td>45 38%</td>
<td>0.81</td>
</tr>
<tr>
<td>Tested for HIV</td>
<td>17 71%</td>
<td>39 86%</td>
<td>0.19</td>
</tr>
<tr>
<td>Newly diagnosed with HIV</td>
<td>0 0%</td>
<td>8 20%</td>
<td>0.09</td>
</tr>
</tbody>
</table>
Linkage to care

Perinatally infected

Heterosexually infected

Kept medical appt within 3 months

N = 41

N = 61

P = 0.07
DISCUSSION
Adolescents reported similar levels of risky sexual behavior

- High rates of STIs
- Inconsistent condom use
- Similar and low number of sex partners
- Serodiscordant sex partners
  - >80% of partners had an HIV negative or unknown status
Identification of named partners newly diagnosed with HIV

- One-fifth of partners of adolescents heterosexually-infected were newly diagnosed
- No adolescent perinatally infected named a partner newly diagnosed
Possible reasons for differences in seroprevalence among sex partners

• Perinatal
  – Only named partners they consistently used condoms with

• Adolescents heterosexually infected may have named partners undiagnosed with HIV
  – Cannot ascertain direction of infection
Limitations

• Small sample of adolescents perinatally infected with HIV
  – Excluded MSM, who have more sex partners
• Self-reported behavior
• May not name current partners to the health department for fear of losing partner
• Persons infected for a long time may be less cooperative with health department
Conclusion

• Similar sex and drug use behaviors
• Perinatally infected reported always using condoms more often than heterosexually infected
• Perinatally infected did not provide any partners newly diagnosed with HIV
Recommendations for adolescents infected with HIV

• Disclosure of HIV status not a one-time event, but process involving ongoing discussions (NYS Department of Health guidelines)

• HIV care visits provide opportunity to emphasize safer sex
  – Some may need more intensive behavioral interventions
Acknowledgements

• FSU field staff
• FSU partnering facilities
References


