HIV/AIDS Epidemiology in New York State

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New York State Department of Health
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Objectives

- Describe recent New York State demographic and risk trends with a focus on New York State excluding New York City among
  - persons living with HIV/AIDS
  - persons newly diagnosed with HIV
- Highlight challenges in HIV/AIDS prevention and care evident from the HIV/AIDS surveillance data
- Show recent trends in HIV in populations of special interest, including childbearing women/infants and incoming inmates
- Stress the importance of clinician reporting in public health surveillance of HIV in New York State.
Source of Surveillance Data:
New York State
HIV Reporting and Partner Notification Law

- Implementation of named HIV reporting June 1, 2000
- Data authorized for surveillance and partner notification activities only
- Laboratories, blood and tissue banks conducting HIV related testing for NYS providers and/or residents required to report HIV related test results (with few exceptions)
- Physicians and others authorized to order diagnostic tests must report new diagnoses of HIV and AIDS as well as known partners
  - “Medical Provider HIV/AIDS and Partner/Contact Report Form: DOH-4189”
  - For confidentiality purposes, the form incorporates a carbonless copy without the words “HIV” or “AIDS” on the copy submitted to the health department
- To obtain forms and further assistance with reporting
  - New York providers outside of New York City: call 518-474-4284
Cumulative Number of AIDS Cases*
Reported to CDC Through December 2007

<table>
<thead>
<tr>
<th>State</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total U.S.</td>
<td>998,255</td>
</tr>
<tr>
<td>New York State</td>
<td>181,461</td>
</tr>
<tr>
<td>California</td>
<td>148,949</td>
</tr>
<tr>
<td>Florida</td>
<td>109,524</td>
</tr>
<tr>
<td>Texas</td>
<td>72,828</td>
</tr>
<tr>
<td>New Jersey</td>
<td>50,694</td>
</tr>
</tbody>
</table>

Number of New HIV Cases* Reported to CDC by the Top Six Reporting States, 2007

<table>
<thead>
<tr>
<th>State</th>
<th>Cases Reported in 2007*</th>
<th>Cumulative Cases Reported</th>
<th>HIV Reporting Start Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>California</td>
<td>17,588^</td>
<td>24,394</td>
<td>April 2006</td>
</tr>
<tr>
<td>New York</td>
<td>5,197</td>
<td>47,551</td>
<td>June 2000</td>
</tr>
<tr>
<td>Florida</td>
<td>5,165</td>
<td>39,934</td>
<td>July 1997</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>3,694^</td>
<td>12,405</td>
<td>Oct 2005</td>
</tr>
<tr>
<td>Illinois</td>
<td>3,576^</td>
<td>9,953</td>
<td>Jan 2006</td>
</tr>
<tr>
<td>Texas</td>
<td>3,495</td>
<td>26,460</td>
<td>Jan 1999</td>
</tr>
<tr>
<td>Total US</td>
<td>61,292</td>
<td>328,103</td>
<td></td>
</tr>
</tbody>
</table>


^ During early years of a named HIV reporting system, cases reported are likely to be substantially higher than new HIV diagnoses.
### Living (Prevalent) HIV/AIDS Cases by Region

#### New York State, December 2008*

<table>
<thead>
<tr>
<th>Region</th>
<th>HIV</th>
<th>%</th>
<th>AIDS</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>NYC</td>
<td>37,482</td>
<td>77.7%</td>
<td>60,421</td>
<td>78.0%</td>
</tr>
<tr>
<td>NYS excl. NYC</td>
<td>10,776</td>
<td>22.3%</td>
<td>17,031</td>
<td>22.0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>48,258</strong></td>
<td><strong>100%</strong></td>
<td><strong>77,452</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

*Data as of March 2010*
Trends in HIV and AIDS Cases*
New York State, 1984 – 2008

* Data as of April 2010
^ HIV named reporting began in NYS in 2000

NYSDOH/BHAEE
Trends in HIV and AIDS Cases*
New York State excluding New York City, 1984 – 2008

* Data as of April 2010
^ HIV named reporting began in NYS in 2000

NYSDOH/BHAE
Trends in HIV and AIDS*
New York State Excluding New York City, 2001 – 2008

* Data as of April 2010. New HIV diagnoses include those diagnosed concurrently with HIV and AIDS.

^ HIV named reporting began in NYS in 2000
Proportion of Newly Diagnosed HIV/AIDS Cases* by Gender and Year of Diagnosis

New York State excluding NYC**

*HIV reporting started in New York State in June 2000.
All HIV cases are counted, regardless of concurrent or subsequent AIDS diagnosis.
**Data as of March 2010
Age Distribution of Living HIV/AIDS Cases
New York State Excluding New York City, December 2008*

N = 27,790
Average = 46.5 yrs

*Data as of March 2010
Age Distribution of Newly Diagnosed HIV* Cases
New York State Excluding New York City, 2008**

N = 960
Average = 38.1 yrs

*Regardless of concurrent or subsequent AIDS diagnosis.
**Data as of March 2010

NYSDOH/BHAE
Newly Diagnosed HIV Cases* by Race/Ethnicity and Gender
New York State Excluding New York City, 2008**

*Regardless of concurrent or subsequent AIDS diagnosis.
**Data as of March 2010

NYSDOH/BHAE
Different Measures of New HIV Diagnoses* by Race/Ethnicity, New York State Excluding New York City, 2008

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Number of HIV Diagnoses</th>
<th>% of Total HIV Diagnoses</th>
<th>Rate** per 100,000 Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>327</td>
<td>34.1</td>
<td>4.1</td>
</tr>
<tr>
<td>Black</td>
<td>374</td>
<td>39.0</td>
<td>39.2</td>
</tr>
<tr>
<td>Hispanic</td>
<td>206</td>
<td>21.5</td>
<td>21.1</td>
</tr>
<tr>
<td>Asian/PI</td>
<td>12</td>
<td>1.3</td>
<td>3.0</td>
</tr>
<tr>
<td>Native Am</td>
<td>2</td>
<td>0.2</td>
<td>4.5</td>
</tr>
</tbody>
</table>

*Regardless of concurrent or subsequent AIDS diagnosis

**Rates are age-adjusted. Cases reported and confirmed through December 2008.
Proportion of HIV and AIDS Cases* by Risk and Year of Diagnosis
New York State excluding NYC, 1985-2008**

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1. MSM = men who have sex with men (includes bisexual men)
2. IDU = injection drug users
3. MSM/IDU = men who have sex with men and inject drugs
4. Hetero = Heterosexual

**Data as of March 2010
NYSDOH/BHAE

*AIDS cases are shown for 1985 - 1999.
HIV reporting started in June 2000 in New York State; HIV cases are shown for 2001 - 2008.
All HIV cases are counted, regardless of concurrent or subsequent AIDS diagnosis.
Newly Diagnosed HIV Cases*
by Risk and Gender
New York State Excluding New York City, 2008**

*Regardless of concurrent or subsequent AIDS diagnosis.
**Data as of March 2010

NYSDOH/BHAE
Challenges in HIV Prevention and Care Evident from Surveillance Data
Annual Newly Diagnosed HIV Cases Compared to 2002, by Gender
New York State Excluding New York City, 2002-2008*

*Data as of March 2010.
Annual Newly Diagnosed HIV Cases Compared to 2002, by Age at Diagnosis and Gender
New York State Excluding New York City, 2002-2008*

*Data as of March 2010.
Annual Newly Diagnosed HIV Cases Compared to 2002, by Age at Diagnosis and Gender
New York State, 2002-2008

*Data as of April 2009.
Data for 2008 estimated to be 90% complete.
Annual Newly Diagnosed HIV Cases Compared to 2002, Males 13-24, by Race/Ethnicity and Risk
New York State excluding NYC 2002-2008*

MSM & MSM/IDU   N (2008) = 89
Other Risk       N (2008) = 27

*Data as of March 2010.
NYSDOH/BHAE
Categories of New HIV Diagnoses
New York State

• New diagnosis of HIV
  – Newly diagnosed HIV infection irrespective of stage of disease (ie, AIDS)

• Late diagnosis of HIV
  – Diagnosis of AIDS within 1 year of HIV diagnosis
  – Inclusive of concurrent HIV/AIDS diagnoses

• Concurrent HIV/AIDS
  – Diagnosis of AIDS within one month of HIV diagnosis
Concurrent HIV/AIDS and Late HIV Diagnoses by Gender, New York State, 2008*

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
<th>NYS Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Late Diagnoses</td>
<td>1,116</td>
<td>396</td>
<td>1,512</td>
</tr>
<tr>
<td>All New Diagnoses</td>
<td>3,320</td>
<td>1,204</td>
<td>4,524</td>
</tr>
</tbody>
</table>

*Data as of March 2010

NYSDOH/BHAE
Concurrent HIV/AIDS and Late HIV Diagnoses by Gender, New York State excluding NYC, 2008*

*Data as of March 2010

NYSDOH/BHAЕ
### Concurrent HIV/AIDS and Late HIV Diagnoses by Race/Ethnicity, New York State excluding NYC, 2008*

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>All Late Diagnoses</th>
<th>All New Diagnoses</th>
<th>Concurrent HIV &amp; AIDS Dx.</th>
<th>Other Late (AIDS within 12 mos.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>35%</td>
<td>113/327</td>
<td>35%</td>
<td>35%</td>
</tr>
<tr>
<td>Black</td>
<td>41%</td>
<td>152/374</td>
<td>41%</td>
<td>41%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>42%</td>
<td>86/206</td>
<td>42%</td>
<td>42%</td>
</tr>
<tr>
<td>Asian/PI</td>
<td>58%</td>
<td>7/12</td>
<td>58%</td>
<td>58%</td>
</tr>
<tr>
<td>Native Am</td>
<td>50%</td>
<td>1/2</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>Multi Race</td>
<td>23%</td>
<td>9/39</td>
<td>23%</td>
<td>23%</td>
</tr>
<tr>
<td>Area Total</td>
<td>38%</td>
<td>368/960</td>
<td>38%</td>
<td>38%</td>
</tr>
</tbody>
</table>

*Data as of March 2010

NYSDOH/BHAЕ
Concurrent HIV/AIDS and Late HIV Diagnoses by Risk Group, New York State excluding NYC, 2008*

*Data as of March 2010

NYSDOH/BHAE
Late HIV Diagnoses by Race/Ethnicity
34 US States, 2007*

*Data from CDC HIV/AIDS Surveillance Report Vol. 19, 2007. Late AIDS diagnoses defined as those occurring <12 months after HIV diagnoses.
Percent of Newly Diagnosed HIV Cases* with a Viral Load Test within 4 Months after Diagnosis
New York State, June 2005 – December 2006

State average = 73%

*Regardless of concurrent or subsequent AIDS diagnosis
Projected Age Profile of Living HIV/AIDS Cases, New York State 2010 - 2025

Number of Cases

30,000
25,000
20,000
15,000
10,000
5,000
0

35-39 40-44 45-49 50-54 55-59 60-64 65-69 70-74 75+

Age (years)

NYSDOH/BHAE
Age-Based Projections for New York State: 2008 - 2025

- Persons living with HIV/AIDS (PLWHA) age ≥ 50 are projected to increase from 42,400 to 90,000
- PLWHA age ≥ 65 will increase by six-fold from 5,000 to 31,200
- The risk composition will shift:
  - The proportion of MSM will increase from 31% to 45%
  - The proportion of IDU will decrease from
    - 33% to 15% (males)
    - 29% to 16% (females)
- The proportion of PLWHA who are ≥ 50 years old will increase from 35% in 2007 to 50-60% by 2025
HIV among Childbearing Women and Mother-to-Child HIV Transmission in New York State
New York State Survey of Childbearing Women
HIV Prevalence and Number HIV Positive
by Year of Delivery
1990 - 2008
New York State Survey of Childbearing Women
HIV Prevalence by Year of Delivery, by Region
1990 - 2008
New York State Survey of Childbearing Women
HIV Prevalence by Year of Delivery, by Race/Ethnicity
1990 - 2008

NYSDOH/BHAE
From 1997 to 2008, the percentage of women aware of their HIV status before delivery increased from 64% to 95%.
New York State Perinatal HIV Transmission Number and Rate of HIV Infected Infants by Year of Delivery 1997 - 2008

1997 data is February - December

n=number of infected infants identified

NYSDOH/BHAE
Births to Women with Perinatal HIV Infection in New York State: 2002-2006

- A review of NYSDOH newborn screening data revealed 48 perinatal infected women who gave birth to 58 infants.
- HIV transmission rate and birth weight similar to births among HIV-infected women with other transmission risks:
  - Mother-to-child transmission 2.2% for all HIV-exposed births versus 3.4% for perinatally infected mothers.

Pulver et al, Poster 925, CROI, Feb. 2009, Montreal, Canada
HIV and Hepatitis C Antibody Status in Incoming Inmates of the NYS Department of Correctional Services 1988-2007

*All data are from the NYS Prison System HIV Seroprevalence Studies.

NYSDOH/BHAE
HIV by Injection Drug Use & Gender

- Self-report injection drug use (IDU) among incoming inmates declined steadily over the study period for all gender, race/ethnicity and age subgroups.

- Similarly, HIV seroprevalence rates among injection drug users declined over time for both male and female injectors.

- Gender differences in HIV seroprevalence trends are very pronounced between injector and non-injector groups.

- For male inmates, both injectors and non-injectors had a decline in HIV rates over time (down over 60%); the same trend is observed for female injectors but not for the female non-injectors.
A decrease in HIV prevalence is observed for all large race/ethnicity and gender subgroups. Between 1988 and 2007, HIV prevalence for male inmates decreased > 80% for white, African-American, and Hispanic inmates, with white male inmates experiencing the largest decrease (down 91.2%). Female inmates had a decrease of <49% in HIV prevalence for all subgroups, with black female inmates experiencing the smallest decrease (down 8.1%). White females experienced a 34.8% decrease.

In 1988, Hispanic female inmates had the highest HIV+ rate (29.5%) among subgroups while white female inmates had the lowest rate (6.9%). Hispanic females experienced the largest decrease in HIV+ rate (down 48.4%) among female subgroups over the study period. However, in 2007 their HIV+ rate remained the highest (15.2%), whereas white male inmates had the lowest HIV+ rate (1.0%, down 91.2% since 1988).
Hepatitis C Seroprevalence* Among Inmates Entering NYS DOCS: 2000 through 2007

*All data are from the NYS Prison System HIV Seroprevalence Studies.

NYSDOH/BHAE

*All data are from the NYS Prison System HIV Seroprevalence Studies.

NYSDOH/BHAE

<table>
<thead>
<tr>
<th>Year</th>
<th>HCV</th>
<th>HIV</th>
<th>HIV+HCV</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>23.1</td>
<td>13.9</td>
<td>5.6</td>
</tr>
<tr>
<td>2003</td>
<td>24.1</td>
<td>11.4</td>
<td>4.6</td>
</tr>
<tr>
<td>2005</td>
<td>19.4</td>
<td>10.6</td>
<td>3.6</td>
</tr>
<tr>
<td>2007</td>
<td>15.7</td>
<td>10.7</td>
<td>3.5</td>
</tr>
</tbody>
</table>

*All data are from the NYS Prison System HIV Seroprevalence Studies.

NYSDOH/BHAE
Summary - 1:
The HIV Epidemic in New York State

• The number of new HIV diagnoses has slowly declined in recent years
• The epidemic as represented by the newly diagnosed remains quite diverse
  – African American/Blacks and Hispanics/Latinos are disproportionately affected
  – The age range of the newly diagnosed spans adolescence through age 60+
    • Increasing diagnoses have been seen in recent years in young MSM
  – Risk profiles have changed over time
    • IDU risk is documented in less than 10% of those with new diagnosed HIV
    • Among incoming inmates with an IDU history, 12-15% have HIV
    • Maternal-to-child transmission occurs in <2% of HIV-exposed infants
    • Increasingly, risk is difficult to characterize using CDC definitions, especially in women
Summary - 2:
The HIV Epidemic in New York State

- Over a quarter of persons diagnosed with HIV have AIDS at the time of their HIV diagnosis and more than a third of new diagnoses have AIDS within a year of their HIV diagnoses.

- Three-quarters of all persons living with HIV/AIDS are age 40 or older; projections are that 50-60% of PLWHA will be >50 by 2025 with over 30,000 age 65 or greater.
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New York State Department of Health
(518) 474-4284
lls04@health.state.ny.us

Additional Sources of Data

- NYSDOH public website (annual surveillance report)
  http://www.health.state.ny.us/diseases/aids/statistics/index.htm
- CDC slides http://www.cdc.gov/hiv/resources/slides/index.htm
- CDC surveillance report http://www.cdc.gov/hiv/topics/surveillance/basic.htm