Medical Monitoring Project (MMP)
Results from the MMP survey of people receiving HIV care in 2007-2008 in NYC

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Background
Medical Monitoring Project (MMP)

- In the USA, at the end of 2006 there were an estimated 1.3m people living with HIV/AIDS (PLWHA) (MMWR, 2008)
- In NYC, at the end of 2009 there were an estimated 108,886 PLWHA (NYC DOHMH, 2010)
- MMP is a national study of PLWHA receiving medical care for HIV
- Conducted by the Centers for Disease Control and Prevention (CDC) with local partners
Objectives
Medical Monitoring Project (MMP)

- To develop greater understanding of the health status and health-related needs of PLWHA, and their HIV transmission risk and prevention
- Data driven based on locally and nationally representative samples of HIV infected adults in care
- Can inform the development and planning of policy and programs for PLWHA, e.g. Ryan White CARE Act planning councils and consortia
Methods
Medical Monitoring Project (MMP)

- Multi-year (2005-open) project of US adults in outpatient care for HIV
- Cross-sectional design
- Annual multi-stage probability sample
Methods
Medical Monitoring Project (MMP): 3-stage Sample Design

1st stage – local areas

2nd stage - providers

3rd stage - patients
Methods
Medical Monitoring Project (MMP): Sample Selection

- Stage 1 – Local Areas:
  - 26 areas selected (20 states and 6 cities)
  - Includes >80% of US AIDS cases
  - Probability of selection is proportional to size (PPS) (# of AIDS cases in 2002)
Methods
Medical Monitoring Project (MMP): Sample Selection

- Stage 2 – Medical Providers (facilities or private providers):
  - Providers who deliver HIV medical care
    - Monitor CD4 count, viral load
    - Prescribe ART
Methods
Medical Monitoring Project (MMP): Sample Selection

- Stage 3 – Patients seen by a Selected Provider
  - Randomly sampled
  - Eligibility
    - HIV-infected
    - ≥ 18 years of age
    - received HIV medical care at facility 1/1 – 4/30 in a given cycle year
  - Participation is voluntary and in NYC requires informed consent
  - Patient incentive for participation ($40 in metrocards)
Methods
Medical Monitoring Project (MMP)

• Data collection using 2 sources:
  – Computer-based structured interview, face-to-face by trained interviewer, conducted in private
  – Medical record abstractions

• Data collected:
  – Clinical status
  – Treatment adherence
  – Service utilization
  – HIV-related service needs
  – Health behaviors (health care utilization, sexual, drug use, prevention)
Methods
Medical Monitoring Project (MMP)

• Analysis:
  - Frequency and percentage distributions
  - Pearson Chi-Square test
  - Statistical significance indicated by * and p value
  - Statistical significance for race/ethnic differences is for black, Hispanic, and white
NYC 2007 and 2008 MMP Sample

Facility Sampling Frame
N=489

Facility sample selected
N=34

Facilities agreeing to participate N=25
Facilities participating in data collection N=21

2007 Facility Sample
N=800

2007 Interviews completed *
(with complete data) N=279

2008 Facility Sample
N=752

2008 Interviews completed **
(w/o dupes & complete data) N=234

Analysis sample,
2007-2008 interviews N=513

*Interviews conducted Jan.-July 08
**Interviews conducted Jan.-July 09
MMP Participants' Social Demographics
Participants’ Social Demographics (N=513)
MMP, NYC, 2007/2008

(Mean age = 45.5 years, SD = 9.6, range 21-74)
### Participants’ Social Demographics (N=513)

**MMP, NYC, 2007/2008 (cont’d)**

#### Main Source of Income Past 12 Months:

<table>
<thead>
<tr>
<th>Source of Income</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salary/wages</td>
<td>26.1%</td>
</tr>
<tr>
<td>SSI/SSDI*</td>
<td>42.3%</td>
</tr>
<tr>
<td>Public assistance</td>
<td>17.4%</td>
</tr>
<tr>
<td>Spouse/Family</td>
<td>4.0%</td>
</tr>
<tr>
<td>Other</td>
<td>9.9%</td>
</tr>
<tr>
<td>No income</td>
<td>0.4%</td>
</tr>
</tbody>
</table>

*Supplemental Security Income (SSI); Social Security Disability Income (SSDI)*

#### Received Any Public Assistance Past 12 Months:

- **66.5%**

#### Covered by Health Insurance Past 12 Months:

- **96.1%**
Participants’ HIV Testing History
MMP, NYC, 2007/2008

HIV diagnosed at first HIV test (n=513)

- First time tested: 64.7%
- Tested Negative at Previous HIV tests: 35.3%

HIV diagnosed at first HIV test by Race/Ethnicity*

- Black: 75.0% (n=200)
- Hispanic: 60.5% (n=195)
- White: 56.3% (n=80)
- Other: 50.0% (n=38)

* p <0.002
MMP Participants' Clinical Characteristics
Participants' Health Status by Race/Ethnicity
Most recent CD4 Count, most recent Viral Load
MMP, NYC, 2007/2008

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>CD4 Count &lt; 200 (in last 12 months)</th>
<th>Undetectable Viral Load (in last 12 months) *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black (N=200)</td>
<td>12.5%</td>
<td>54.5%</td>
</tr>
<tr>
<td>Hispanic (N=195)</td>
<td>8.2%</td>
<td>51.8%</td>
</tr>
<tr>
<td>White (N=80)</td>
<td>3.8%</td>
<td>72.5%</td>
</tr>
<tr>
<td>Other (N=38)</td>
<td>7.9%</td>
<td>55.3%</td>
</tr>
<tr>
<td>Total (N=513)</td>
<td>9.2%</td>
<td>56.3%</td>
</tr>
</tbody>
</table>

* p <0.01
Antiretroviral Treatment and Adherence
MMP, NYC, 2007/2008

- Ever taken ART: 447 (87.1%), N = 513
- Currently on ART: 423 (82.5%), N = 513
- Missed ART Dose: 63 (14.9%), N = 423 currently on ART
### HIV Treatment by Race/Ethnicity

#### MMP, NYC, 2007/2008

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Black</th>
<th>Hispanic</th>
<th>White</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ever on ART</strong></td>
<td>82.5%</td>
<td>91.0%</td>
<td>85.1%</td>
<td>83.8%</td>
<td>84.2%</td>
</tr>
<tr>
<td>N=513</td>
<td>n=200</td>
<td>n=195</td>
<td>n=80</td>
<td>n=38</td>
<td></td>
</tr>
<tr>
<td><strong>Currently on ART</strong></td>
<td>82.5%</td>
<td>85.5%</td>
<td>80.5%</td>
<td>80.0%</td>
<td>81.6%</td>
</tr>
<tr>
<td>N=513</td>
<td>n=200</td>
<td>n=195</td>
<td>n=80</td>
<td>n=38</td>
<td></td>
</tr>
</tbody>
</table>
## Non-Adherence by Race/Ethnicity Among Those Currently on ART

**MMP, NYC, 2007/2008**

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Dosing Non-Adherence</th>
<th>Timing Non-Adherence</th>
<th>Food Non-Adherence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N on ART</td>
<td>% non-adherent</td>
<td>N on ART</td>
</tr>
<tr>
<td>Total</td>
<td>423</td>
<td>14.9%</td>
<td>423</td>
</tr>
<tr>
<td>Black</td>
<td>171</td>
<td>12.3%</td>
<td>171</td>
</tr>
<tr>
<td>Hispanic</td>
<td>157</td>
<td>17.8%</td>
<td>157</td>
</tr>
<tr>
<td>White</td>
<td>64</td>
<td>12.5%</td>
<td>64</td>
</tr>
<tr>
<td>Other</td>
<td>31</td>
<td>19.4%</td>
<td>31</td>
</tr>
</tbody>
</table>

- **Dosing Non-Adherence**: Missed any dose in the past two days
- **Timing Non-Adherence**: Did not adhere to specific medication schedule (timing)
- **Food Non-Adherence**: Among those on food restrictions, did not adhere to specific food instructions for taking medication
Recent CD4 Count < 200 and Undetectable Viral Load by Missed ART Dose
MMP, NYC, 2007/2008

CD4 count < 200 *

- Yes, missed: 27.0% (N=56)
- No, did not miss: 8.1% (N=297)

Undetectable Viral Load *

- Yes, missed: 58.3% (N=48)
- No, did not miss: 81.7% (N=300)

(Of 353 who knew their CD4 count)  
(Of 348 who knew their viral load) 

* p <0.0001
MMP Participants' Service Utilization
Healthcare Service Utilization by Race/Ethnicity in Last 12 Months MMP, NYC, 2007/2008

ER Services, HIV-related
- Total: 12.9%
- Black: 12.5%
- Hispanic: 15.4%
- White: 7.5%
- Other: 13.2%

Hospitalization, HIV-related
- Total: 9.6%
- Black: 11.0%
- Hispanic: 8.2%
- White: 8.8%
- Other: 10.5%

Urgent Care, HIV-related
- Total: 4.7%
- Black: 3.5%
- Hispanic: 5.6%
- White: 3.8%
- Other: 7.9%
Healthcare Service Utilization by most recent CD4 Count in last 12 months

MMP, NYC, 2007/2008

- **ER* HIV-rel.**
  - <200: 31.9%
  - ≥200: 13.6%
  - Don’t know: 7.0%

- **Urgent Care* HIV-rel.**
  - <200: 12.8%
  - ≥200: 5.7%
  - Don’t know: 2.5%

- **Hospitalization* HIV-rel.**
  - <200: 29.8%
  - ≥200: 7.4%
  - Don’t know: 6.0%

* p < 0.0001
* p < 0.01

* p < 0.0001
Support Services Needed and Received, as perceived by patient, by Race/Ethnicity
MMP, NYC, 2007/2008

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Mental Health Services</th>
<th>Housing Services</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% Need*</td>
<td>% Received*</td>
</tr>
<tr>
<td>Total</td>
<td>32.7 %</td>
<td>29.4 %</td>
</tr>
<tr>
<td>Black</td>
<td>24.0 %</td>
<td>20.5 %</td>
</tr>
<tr>
<td>Hispanic</td>
<td>33.3 %</td>
<td>29.2 %</td>
</tr>
<tr>
<td>White</td>
<td>47.5 %</td>
<td>47.5 %</td>
</tr>
<tr>
<td>Other</td>
<td>44.7 %</td>
<td>39.5 %</td>
</tr>
</tbody>
</table>

* p < 0.001  * p < 0.0001  * p < 0.05
MMP Participants' Drug Use Profile
Drug and Alcohol Use
MMP, NYC, 2007/2008

(N=513)

- Injection Drug use (Ever): 102 (19.9%)
- Non-Injection Drug Use (Past 12 Months): 207 (40.4%)
- Alcohol Use (Past 12 Months): 269 (52.4%)
Non-Injection Drug Use and Binge Alcohol Drinking
MMP, NYC, 2007/2008

(N=513)

<table>
<thead>
<tr>
<th>Drug</th>
<th>Prevalence (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Binge Alcohol</td>
<td>17.0%</td>
</tr>
<tr>
<td>Marijuana</td>
<td>29.4%</td>
</tr>
<tr>
<td>Powder Cocaine</td>
<td>12.7%</td>
</tr>
<tr>
<td>Crack</td>
<td>4.9%</td>
</tr>
<tr>
<td>Heroin</td>
<td>2.3%</td>
</tr>
<tr>
<td>Poppers (Amyl Nitrate)</td>
<td>12.1%</td>
</tr>
<tr>
<td>Crystal Meth</td>
<td>7.4%</td>
</tr>
<tr>
<td>Ecstasy</td>
<td>4.1%</td>
</tr>
<tr>
<td>Painkillers</td>
<td>3.9%</td>
</tr>
<tr>
<td>Downers (Ketamine)</td>
<td>3.7%</td>
</tr>
<tr>
<td>Special K</td>
<td>2.0%</td>
</tr>
<tr>
<td>Steroids</td>
<td>0.8%</td>
</tr>
</tbody>
</table>

*a For men, binge drinking was defined as more than 5 drinks in one sitting in the past 30 days.
For women, binge drinking was defined as more than 4 drinks in one sitting in the past 30 days.
Sexual Activity and Sexual Risk Behaviors
Sexually Active Status by Gender Last 12 months
MMP, NYC, 2007/2008

- **All**: 30.0% Same-Sex Only, 29.8% Heterosexual Only, 0% Both, 33.3% Not Active
- **Male**: 44.3% Same-Sex Only, 22.1% Heterosexual Only, 2.2% Both, 30.0% Not Active
- **Female**: 37.6% Same-Sex Only, 51.4% Heterosexual Only, 3.6% Both, 66.7% Not Active
- **Trans**: 51.2% Same-Sex Only, 2.5% Heterosexual Only, 0.7% Both, 33.3% Not Active
**Partner Gender Among the Sexually Active (N=359)** MMP, NYC, 2007/2008

**Male Participants (N = 277)**
- Male sex partners only: 67.9%
- Female sex partners only: 29.2%
- Both: 2.9%

**Female Participants (N = 78)**
- Male sex partners only: 92.3%
- Female sex partners only: 6.4%
- Both: 1.3%

**Transgender Participants (N=4)**
- Any gender partner: 100%
Sexual Behaviors among Sexually Active Male Participants by Partnership Gender (past 12 months)
MMP, NYC, 2007/2008

Male Sex Partner (n=196)

- Any Anal: 172 (87.8%)
- Any unprotected anal: 92 (46.9%)

Female Sex Partner (n=89)

- Any vaginal: 79 (88.8%)
- Any unprotected vaginal: 21 (23.6%)
- Any anal: 17 (19.1%)
- Any unprotected anal: 6 (6.7%)
- Any unprotected anal or vaginal: 21 (23.6%)
Sexual Behaviors among Sexually Active Female Participants by Partnership Gender (past 12 months)

MMP, NYC, 2007/2008

Male Sex Partner (n=69)

- Any vaginal: 66 (95.7%)
- Any unprotected vaginal: 33 (47.8%)
- Any anal: 9 (13.0%)
- Any unprotected anal: 4 (5.8%)
- Any unprotected anal or vaginal: 33 (47.8%)
Exposure to Individual Counseling or Group Prevention
Exposure to Prevention in the Past 12 Months (N=513)  
MMP, NYC, 2007/2008

<table>
<thead>
<tr>
<th>Activity</th>
<th>Yes (%)</th>
<th>No (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Received any free condoms</td>
<td>81.1%</td>
<td>18.9%</td>
</tr>
<tr>
<td>Talked with a counselor (one-on-one) about HIV prevention</td>
<td>33.1%</td>
<td>66.9%</td>
</tr>
<tr>
<td>Participated in group sessions to talk about HIV prevention</td>
<td>24.6%</td>
<td>75.4%</td>
</tr>
<tr>
<td>Participated in group sessions or talked with a counselor</td>
<td>42.3%</td>
<td>57.3%</td>
</tr>
</tbody>
</table>
Sexually Active Participants and Exposure to Prevention in the Past 12 Months (N=359)
MMP, NYC, 2007/2008

- **Received any free condoms**
  - Yes: 321 (87.7%)
  - No: 48 (12.3%)

- **Talked with a counselor (one-on-one) about HIV prevention**
  - Yes: 116 (32.3%)
  - No: 243 (67.7%)

- **Participated in group sessions to talk about HIV prevention**
  - Yes: 83 (23.1%)
  - No: 276 (76.9%)

- **Participated in group sessions or talked with a counselor about HIV prevention**
  - Yes: 159 (42.3%)
  - No: 200 (57.7%)
Limitations

- Data are based on self-report
- Stigmatized behaviors (e.g., sex and drug risk behaviors) may be underreported
- Cross-sectional design, therefore cannot determine causal relationships
- Caution is required in making generalizations to all NYC HIV-infected patients receiving care for HIV:
  - Some facilities did not participate
  - Low response rate in patient sample
  - Unweighted data are from a complex survey design
References


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