Re-linkage and Retention in Care of HIV-diagnosed Persons presumed to be Out-of-Care Based on New York City Surveillance Data

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- Christopher B. Williams
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Out-of-Care (OOC) Population

- HIV-related morbidity and mortality
- HIV transmission to uninfected sex or needle-sharing partners
- Health department surveillance data key in identifying and re-engaging OOC persons in care
The largest group of persons not achieving suppression is those linked to care but not retained in care, who comprise 19% of all infected persons.

As reported to the New York City Department of Health and Mental Hygiene by June 30, 2014. For definitions of the stages of the continuum of care, see Appendix.
METHODS
OOC Patient Selection
2008-2012

- Confirmed HIV-positive in New York City (NYC) surveillance registry

- Last HIV viral load (VL) or CD4 T-cell count report was ≥9 months

- Last known residential address in NYC
Selection of presumed OOC patients from registry

Outreach to OOC patients
Letters, telephone calls, texting, email, home visits

Found

Accepted linkage to care
- Facilitate appointment
- Review/provide HIV prevention resources
- Offer partner services

Refused linkage to care
- Health department contact information
- Review/provide HIV prevention resources

Not found/alive

Assign disposition:
- Unable to locate
- Moved out of jurisdiction
- died
Outcome Measures

• Retention in care of patients post-returned to care (RTC)
  – ≥1 visit each year post-RTC

• Continuous care by same patients post-RTC
  – ≥1 visit each year
  – ≥2 visits, 90 days apart each year

• Suppressed VL among patients post-RTC
  – ≤400 VL/mL
  – ≤200 VL/mL

• Factors associated with retention/continuous care or suppressed VL
RESULTS
Patient Tracing Outcomes: 1/08-12/12

Presumed to be OOC
1585

- Traced
  - Confirmed OOC
    - Linked to care
      - Returned to care
        - Viral load/CD4 report
  - Not traced
    - Current with care
    - Moved
    - Died
    - Other

Confirmed OOC
803 (60%)

Traced 1328 (84%)

Not traced 257 (16%)
## Select Demographics of Patients RTC

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>N=414 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Race/ethnicity (missing=4)</strong></td>
<td></td>
</tr>
<tr>
<td>Black, non-Hispanic</td>
<td>263 (64)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>126 (31)</td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>246 (59)</td>
</tr>
<tr>
<td>Female</td>
<td>168 (41)</td>
</tr>
<tr>
<td><strong>Age group (years)</strong></td>
<td></td>
</tr>
<tr>
<td>13-40</td>
<td>135 (33)</td>
</tr>
<tr>
<td>&gt;40</td>
<td>279 (67)</td>
</tr>
<tr>
<td><strong>Time from diagnosis to outreach for linkage to care</strong></td>
<td></td>
</tr>
<tr>
<td>1-5 years</td>
<td>56 (13)</td>
</tr>
<tr>
<td>&gt;5 years</td>
<td>358 (87)</td>
</tr>
<tr>
<td><strong>U.S. country of birth</strong></td>
<td></td>
</tr>
<tr>
<td>U.S. country of birth</td>
<td>294 (71)</td>
</tr>
<tr>
<td><strong>Health insured when return to care (missing 67)</strong></td>
<td></td>
</tr>
<tr>
<td>Health insured when return to care</td>
<td>330 (80)</td>
</tr>
</tbody>
</table>
Patients Assessed for Care Status and Suppressed VL Post-RTC 2008-2012

<table>
<thead>
<tr>
<th>Years post-RTC</th>
<th>Number of patients</th>
<th>Died</th>
<th>Eligible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>402</td>
<td>12</td>
<td>390</td>
</tr>
<tr>
<td>Year 2</td>
<td>342</td>
<td>14</td>
<td>328</td>
</tr>
<tr>
<td>Year 3</td>
<td>253</td>
<td>21</td>
<td>232</td>
</tr>
<tr>
<td>Year 4</td>
<td>158</td>
<td>24</td>
<td>134</td>
</tr>
<tr>
<td>Year 5</td>
<td>70</td>
<td>27</td>
<td>43</td>
</tr>
</tbody>
</table>
Retention or Continuous Care post-RTC

- At least 1 visit (CD4/VL) post-RTC visit
- At least 1 visit (CD4 or VL) post RTC in each year of follow-up (continuous care)
- At least 2 visits (CD4 or VL) post-RTC
- At least 2 visits (CD4/VL) post-RTC in each year of follow-up (continuous care)
Suppressed VL Post-RTC

- Any viral load during the year
- At least 1 viral load ≤400 copies/mL during the year
- At least 1 viral load ≤200 copies/mL during the year

Year 1: Any viral load during the year, 83%
Year 2: Any viral load during the year, 83%
Year 3: At least 1 viral load ≤400 copies/mL during the year, 57%
Year 4: At least 1 viral load ≤400 copies/mL during the year, 64%
Year 5: At least 1 viral load ≤200 copies/mL during the year, 53%

Year 5: At least 1 viral load ≤200 copies/mL during the year, 49%
## Retention in Care and Suppressed VL Post-RTC, by Gender, 2008-2012

### Continuous care

<table>
<thead>
<tr>
<th>Years post-RTC</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>0</td>
<td>91</td>
</tr>
<tr>
<td>Year 2</td>
<td>50</td>
<td>83</td>
</tr>
<tr>
<td>Year 3</td>
<td>71</td>
<td></td>
</tr>
<tr>
<td>Year 4</td>
<td>72</td>
<td></td>
</tr>
<tr>
<td>Year 5</td>
<td>62</td>
<td></td>
</tr>
</tbody>
</table>

### Suppressed VL at ≤400 copies/mL

<table>
<thead>
<tr>
<th>Years post-RTC</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>0</td>
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<td>50</td>
<td>59</td>
</tr>
<tr>
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<td>62</td>
<td></td>
</tr>
<tr>
<td>Year 4</td>
<td>65</td>
<td></td>
</tr>
<tr>
<td>Year 5</td>
<td>52</td>
<td></td>
</tr>
</tbody>
</table>
Retention in Care and Suppressed VL Post-RTC, by Race/ethnicity, 2008-2012

Continuous care

Year 1 Year 2 Year 3 Year 4 Year 5
Black, non-Hispanic 86 76 68 67 58
Hispanic 93 84 69 70 52
White 84 76 69 70 52

Suppressed VL at ≤400 copies/ML

Year 1 Year 2 Year 3 Year 4 Year 5
Black, non-Hispanic 50 51 54 52 52
Hispanic 52 58 63 61 48
White 51 54 63 61 52

Race/ethnicity
- Black, non-Hispanic
- Hispanic
- White
Retention in Care and Suppressed VL Post-RTC, by Age Group, 2008-2012

Continuous care post-RTC

<table>
<thead>
<tr>
<th>Years post-RTC</th>
<th>14-29 years</th>
<th>30-39 years</th>
<th>40-49 years</th>
<th>≥50 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>86%</td>
<td>94%</td>
<td>81%</td>
<td>79%</td>
</tr>
<tr>
<td>Year 2</td>
<td>75%</td>
<td>86%</td>
<td>72%</td>
<td>72%</td>
</tr>
<tr>
<td>Year 3</td>
<td>67%</td>
<td>75%</td>
<td>72%</td>
<td>78%</td>
</tr>
<tr>
<td>Year 4</td>
<td>67%</td>
<td>75%</td>
<td>72%</td>
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<tr>
<td>Year 5</td>
<td>67%</td>
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<td>72%</td>
<td>78%</td>
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Suppressed VL at ≤400 copies/mL

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<tr>
<td>Year 1</td>
<td>54%</td>
<td>64%</td>
<td>61%</td>
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</tr>
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<td>65%</td>
</tr>
</tbody>
</table>

Age groups:
- 14-29 years
- 30-39 years
- 40-49 years
- ≥50 years
Limitations

• Care status and lab reports obtained only from NYC surveillance registry

• Persons may have moved or died in other jurisdictions
Conclusions

- OOC patients were receptive to public health effort to re-engage in care
- Many patients were sustained in care and achieved suppressed viral load post-RTC
- Male sex, age ≥40 years, and Hispanic race were associated with care retention or suppressed VL
- Public health and community provider efforts to engage and retain patients in care are warranted
Thank you!

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Appendix
Technical notes and definitions

• “Estimated HIV-infected”: equal to the number of persons diagnosed with and presumed living with HIV in NYC at the end of 2013 (PLWHA), divided by the estimated proportion of all HIV-infected persons in NYC who have been diagnosed. CDC and a recent local emergency room serosurvey estimated this proportion to be 86%. Sources:

• “HIV diagnosed”: PLWHA as of 12/31/2013, per surveillance case reporting.

• “Ever linked to HIV care”: Any viral load (VL) or CD4 count drawn in the years 2001-2013 and received after HIV diagnosis following a 7-day lag, and reported to DOHMH HIV surveillance.

• “Retained in HIV care in 2013”: VL or CD4 count or CD4 percent drawn in 2013, and reported to DOHMH HIV surveillance.

• “Presumed ever started on ART”: Suppressed VL (≤200 copies/mL) reported to DOHMH HIV surveillance at any point from 2001-2013.

• “Suppressed viral load in 2013”: Most recent VL drawn in 2013 and reported to NYC DOHMH HIV surveillance was ≤200 copies/mL.