Engagement in Outpatient Care for Patients Living with HIV (PLWH)

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Background

- The HIV cascade illustrates HIV patients’ varying level of engagement within the stages of HIV care

- Certain subgroups of PLHW demonstrate lower engagement in the various stages of HIV care and are also less likely to achieve viral suppression
  - Racial/ethnic minorities, males, younger patients
Prior studies that have applied the HIV cascade to various populations focused on patients receiving care in HIV medical care facilities

These data are not representative of care received by PLWH throughout the United States, as not all PLWH receive care in HIV clinics

Study Objective: To estimate engagement in outpatient care for PLWH, beyond facilities that specialize in HIV

Dombrowski et al. JAIDS 2013
Skarbinski et al. CROI 2013
Study Overview

- **Study Design:**
  - This was a nationally representative, retrospective, cross-sectional, observational study
  - Patient data were retrieved from the National Hospital Ambulatory Medical Care Survey (NHAMCS)

**Inclusion Criteria:**
- Clinic visits between 2009-2010
- ICD-9-CM code for HIV

**Exclusion Criteria:**
- Age <18 years at clinic visit

ICD-9-CM = International Classification of Diseases, 9th Revision, Clinical Modification
### Study Definitions - HIV

<table>
<thead>
<tr>
<th>Disease/Condition</th>
<th>ICD-9-CM Code</th>
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</thead>
<tbody>
<tr>
<td>HIV Disease</td>
<td>042</td>
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<tr>
<td>Asymptomatic HIV Infection</td>
<td>V08</td>
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<tr>
<td>HIV-2 illness</td>
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</table>
## Study Definitions - Levels of Care

<table>
<thead>
<tr>
<th>Level of Care</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Receiving any care</td>
<td>≥1 clinic visit for a PLWH</td>
</tr>
<tr>
<td>Receiving HIV care</td>
<td>≥1 clinic visit with a primary ICD-9-CM code for HIV</td>
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<tr>
<td>Established in care</td>
<td>Patient previously seen within the clinic</td>
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<tr>
<td>Engaged in care</td>
<td>≥2 clinic visits in the past year</td>
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<tr>
<td>Prescribed ARV</td>
<td>Documentation of ≥1 ARV medication</td>
</tr>
</tbody>
</table>

ARV = Antiretroviral
Statistical Analysis

- Survey weights were incorporated to compute national estimates of outpatient clinic visits

- Covariates:
  - Patient demographics (age, race/ethnicity, sex, insurance status), visit characteristics (clinic geographic region in the United States, year of visit)

- Survey logistic regression model predicting ARV prescription based on relevant characteristics

- SAS version 9.2 (SAS Institute, Cary, NC)
  - SURVEYFREQ, SURVEYMEANS, SURVEYLOGISTIC
Results - Levels of Engagement

- ~2.6 million outpatient clinic visits for PLWH
- Of these visits:
  - 90% were receiving HIV-related care
  - 86% were established in care
  - 75% were engaged in care
  - 65% were prescribed ARV
Weighted Outpatient Visits for PLWH

- Receiving any care: 2,593,000
- Receiving HIV care: 2,326,000
- Established care: 2,237,000
- Engaged in care: 1,932,000
- Prescribed antiretroviral therapy: 1,684,000
| Age (years) | Sex | Race/Ethnicity |  
|------------|-----|----------------|---
|            |     | White | Black | Hisp. | Other |  
| 18-29      | 84.9| 90.5  | 86.5  | 94.1  | 81.3  | n.s.  
| 30-49      | 89.2| 90.5  | 86.5  | 94.1  | 81.3  | n.s.  
| ≥50        | 92.3| 90.5  | 86.5  | 94.1  | 81.3  | n.s.  

| HIV-Related Care, % * | Sex | Race/Ethnicity |  
|-----------------------|-----|----------------|---
|                       |     | White | Black | Hisp. | Other |  
| Established in Care among PLWH Receiving HIV Care, % * | 78.7| 88.5  | 84.1  | 87.5  | 80.8  | n.s.  
| Engaged in Care among PLWH Established in Care, % ‡ | 75.8| 90.5  | 86.6  | 80.6  | 100   | <0.001  
| Prescribed ARV among PLWH Established in Care, % ‡ | 57.4| 81.0  | 67.1  | 80.2  | 83.3  | n.s.  

n.s. = not significant  
* Number of visits meeting study criteria was used as the denominator  
‡ Number of visits for PLWH established in care was used as the denominator
<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Sex</th>
<th>Race/Ethnicity</th>
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<td>75.8</td>
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Factors associated w/ ARV Prescription

- Type of provider seen at time of clinic visit was associated with ARV prescription
  - OR=0.27, 95% CI=0.15-0.51

- Routine engagement in care was not associated with ARV prescription (≥2 clinic visits in the past year)
  - OR=0.99, 95% CI=0.96-1.03
Discussion

- Engagement in HIV care decreased with progressing levels of care

- Fewer PLWH receiving HIV-related care were prescribed ARV compared to other studies
  - This may be a reflection of low ARV treatment utilization in non-specialty clinics

- Younger adults were less likely to be engaged in care or to be prescribed ARV compared to older adults
  - Need for targeted interventions
Discussion

- No. of visits in the past year was not associated with ARV prescription
  - Routine clinic visits may be missed opportunities to promote ARV use for PLWH

- Limitations:
  - Lack of objective laboratory markers
  - Cross-sectional study, engagement in care can fluctuate

- Conclusion:
  - Many PLWH lack ARV coverage, underscoring the significance of the missed opportunities in outpatient care to initiate ARV
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  - Lu Mao, MS

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Questions?