Evaluating the HIV Continuum of Care within a Large Integrated Health System

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Background
Human Immunodeficiency Virus (HIV)
- Nearly 1 million persons ≥ 13 years of age in the United States are diagnosed and living with HIV¹
- HIV is associated with 12,000 deaths from any cause²
- Antiretroviral therapy (ART) induces viral suppression and allows survival rates of those with HIV to become nearly equivalent to people without HIV³
- Viral suppression is defined by a viral load (VL) < 200 copies/mL

Acquired Immunodeficiency Syndrome (AIDS)
- Untreated HIV may progress to AIDS defined by CD4 count < 200 cells/µL
- 7,000 deaths per year are due directly to AIDS³

HIV Care Continuum
- 2013 Centers for Disease and Control (CDC) initiative⁴
- Aimed to categorize the nation’s HIV-infected population
- Wisconsin performed a statewide evaluation using similar methodology
- In Wisconsin’s study, the proportion of patients diagnosed with concomitant HIV and AIDS decreased from 30% to 18% between 2012 and 2015⁵
- Aurora Health Care (AHC), the largest not-for-profit health system in Wisconsin, sought to perform a similar evaluation within its 16 hospitals and 149 clinics

Objectives
Primary
- To describe the HIV continuum of care within the AHC system

Secondary
- To identify opportunities within the continuum to improve HIV care with a special focus on patients without ART and those not linked to care
- To compare AHC data to national and statewide results

Methods
Patient Inclusion Criteria
- ≥ 13 years of age and still living at the end of the specified time period
- Positive HIV rapid antigen and/or HIV antibody test within AHC between January 1, 2012 and August 1, 2016

Patient exclusion criteria
- Known diagnosis of HIV prior to the positive test within AHC

Data Collection
- All patients categorized below based upon data within one year from diagnosis³

Results
Patient selection
- 211/79,442 (0.27%) patients initially queried had a reactive result
- 66/211 (40.8%) unique patients remained after removing duplicate medical record numbers and those excluded per criteria

Baseline Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Result</th>
<th>Characteristic</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male, n (%)</td>
<td>71 (82.6%)</td>
<td>Caucasian, n (%)</td>
<td>43 (50%)</td>
</tr>
<tr>
<td>Age at diagnosis, (years)</td>
<td>39 (36.4%)</td>
<td>CD4 count (cells/µL), median (IQR)</td>
<td>203 (33, 492)</td>
</tr>
<tr>
<td>Viral load (copies/mL, median)</td>
<td>63,327 (16,952, 228,391)</td>
<td>Lab services not specified collection setting, n (%)</td>
<td>52 (60.4%)</td>
</tr>
</tbody>
</table>

Diagnosed with HIV
- ≥ 13 years of age diagnosed within the time period

Linked to care
- ≥ 1 CD4 or VL obtained within 3 months of HIV diagnosis

Engaged in care
- ≥ 1 CD4 or VL obtained > 3 months after diagnosis

Retained in care
- ≥ 1 CD4 or VL > 3 months after being engaged in care

Prescribed ART
Documentation of prescribed ART in the electronic medical record

Viral suppression
- VL < 40 copies/mL or undetectable by current lab techniques

<table>
<thead>
<tr>
<th>Percent</th>
<th>0</th>
<th>25</th>
<th>50</th>
<th>75</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnosis</td>
<td>100</td>
<td>70</td>
<td>69</td>
<td>65</td>
<td>65</td>
</tr>
<tr>
<td>Linkage</td>
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<td>71</td>
<td>69</td>
<td>65</td>
<td>65</td>
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<tr>
<td>Engaged</td>
<td>100</td>
<td>71</td>
<td>69</td>
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<tr>
<td>Retained</td>
<td>100</td>
<td>71</td>
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<td>65</td>
</tr>
<tr>
<td>Suppressed</td>
<td>100</td>
<td>71</td>
<td>69</td>
<td>65</td>
<td>65</td>
</tr>
</tbody>
</table>

- Of those retained in care, 96.7% were prescribed ART
- 83.3% of patients on ART achieved viral suppression
- Dual diagnoses of HIV and AIDS were found in 43.7% of patients with no difference per annum, p=0.779 (likelihood ratio chi-square)

Secondary Objective
- Linkage to care was comparable to national data but fell below the state of Wisconsin
- 22.1% of all patients were not prescribed ART
- Of these, 11 were referred with no follow-up, 7 lost after diagnosis without referral, and 1 left the state
- 16.3% of the total population did not establish linkage to care within 3 months

Conclusions
- Retention to care was the largest disparity compared to national and state data with a strong correlation to viral suppression
- Current literature suggests improving HIV care via mobile reminders or HIV service coordinator positions, but research is ongoing⁶⁻⁷
- AHC aims to investigate external references and potentially create an internal referral network for newly HIV diagnosed patients

References

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