Strategies to Improve Engagement in Community HIV Care for People Who are Releasing from Prison

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Retrospective Cohort Study of HIV+ People Receiving a Patient Navigation Intervention after Release from Prison

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Disclosures

Nothing to Disclose
Background

HIV Care Continuum Shows Where Improvements are Needed

In the US, 1.2 million people are living with HIV. Of those:

- **Diagnosed**: 86%
- **Engaged in Care**: 40%
- **Prescribed ART**: 37%
- **Virally Suppressed**: 30%

Sources: CDC National HIV Surveillance System and Medical Monitoring Project, 2011.

*Antiretroviral therapy

Achieving Viral Suppression: More People with HIV Need to be in Medical Care

- 30% Virally suppressed
- 70% Not virally suppressed
- 4% In care but not on ART*
- 66% Diagnosed but not in care
- 10% On ART but not virally suppressed
- 20% Not diagnosed

Sources: CDC National HIV Surveillance System and Medical Monitoring Project, 2011.

*Antiretroviral therapy
Background (cont.)

Systems Linkages and Access to Care Initiative

• HRSA “Special Projects of National Significance”

• Grants to health departments in 6 states
  (LA, MA, NY, NC, VA, WI)

• Goal: improve access to and retention in high quality HIV care for hard-to-reach populations who have never been in care, have fallen out of care, or are at risk for falling out of care
Wisconsin’s Strategy

• Linkage to Care Specialist (LTCS)
  • Patient navigator
  • Intensive case management and care coordination services
  • 5 patient populations: newly diagnosed, new to care, out of care, post-incarceration, at-risk of falling out of care

• Goals of LTCS program:
  • increase overall levels of client engagement in medical care, including both timely linkage and retention
  • increase the number of people living with HIV/AIDS in Wisconsin who are virally suppressed

Client Quote: “[My LTCS gave me] information about setting up appointments with the hospital or maybe even with a case manager. That made me feel, like, more confident, like I can get through this a little bit more.”
Wisconsin’s Strategy

- Standardized process to identify & address barriers to HIV care
  - Intake
  - Assessment
  - Service plan development
  - Service plan implementation
  - Transition plan development
  - Discharge

- Time limited (9 months)
- Coordinated at the state (DHS) level
- Started 6/1/2013

Client Quote: “[I] needed somebody that could take care of, you know, the medical part. Like when I got out, I didn’t have my medical insurance or anything; so the Linkage to Care Specialist, you know, they’re dealing with the doctors, they’re making sure that I get my medications...so initially that was what the central focus was for my getting the Linkage to Care Specialist.”
• Prior research has shown that while many patients successfully receive antiretroviral therapy (ART) while incarcerated in U.S. prisons, lapses in treatment and virologic failure are common after patients are released to the community.

• Patient navigation, or community-based intensive case management, has been implemented in many settings to improve utilization of complex health care and reduce health disparities.
Setting

**Wisconsin**: Estimated 2014 population of 5.7 million and an HIV prevalence of 1.4 per 1,000 residents.

**Milwaukee County**: Accounts for 17% of population, but ½ of all cases

Wisconsin also has severe racial disparities in HIV and incarceration
Racial Disparities in HIV Prevalence

Estimated HIV Prevalence, Milwaukee County, 2009

- African American
- Hispanic/Latino
- White

[Graph showing HIV prevalence among different groups: MSM*, Non MSM males, Females]
Racial Disparities in Incarceration

Ten Worst States for Incarceration of African American Men
(2010 U.S. Decennial Census)

<table>
<thead>
<tr>
<th>State</th>
<th>Incarceration Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wisconsin</td>
<td>12.8%</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>9.7%</td>
</tr>
<tr>
<td>Iowa</td>
<td>9.4%</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>9.1%</td>
</tr>
<tr>
<td>California</td>
<td>8.6%</td>
</tr>
<tr>
<td>Indiana</td>
<td>8.4%</td>
</tr>
<tr>
<td>Louisiana</td>
<td>8.2%</td>
</tr>
<tr>
<td>Texas</td>
<td>8.1%</td>
</tr>
<tr>
<td>Colorado</td>
<td>7.7%</td>
</tr>
<tr>
<td>Kansas</td>
<td>7.7%</td>
</tr>
<tr>
<td>U.S. average</td>
<td>6.7%</td>
</tr>
</tbody>
</table>

Pawasarat & Quinn: Wisconsin’s Mass Incarceration of African American Males: Workforce Challenges of 2013
Racial Disparities in Incarceration

Levels of Incarceration by Age: African American Males of Milwaukee County

Pawasarat & Quinn: Wisconsin’s Mass Incarceration of African American Males: Workforce Challenges of 2013
Setting

Intervention offered to all HIV+ clients in WI prison system who plan to live in Milwaukee or Madison after release.
Referrals

DOC notifies UW Inmate Social Worker (UW SW) of client’s release date

UW SW offers referral to LTCS for eligible clients before release from DOC

Client accepts referral and signs release of information allowing contact with LTCS

UW SW provides LTCS with client information no more than 6 months before release date

LTCS writes letter to client within two weeks of receiving information from UW SW

LTCS continues communication with client while incarcerated to coordinate first post-release LTC meeting and other needed services

LTCS meets face-to-face with client within one week of release from DOC and formally offers services

Client enrolls in LTC and signs service agreement

LTCS informs UW SW that client accepted services within 48 hours

LTCS facilitates referral to PS if needed *

LTCS informs UW SW when client attends first HIV medical appointment within 48 hours of attendance

Client declines referral

UW SW continues efforts to link client to medical care

Client declines LTC services

LTCS informs UW SW that client declined LTC services within 48 hours

LTCS informs UW SW when client attends first HIV medical appointment within 48 hours of attendance

UW SW continues efforts to link client to medical care
Objectives

1. To assess the impact of a multi-site patient navigation program on post-incarceration linkage to HIV care.

2. To assess the impact of the patient navigation program on viral suppression among people prescribed ART after release from prison.

3. To determine whether engagement in HIV care for criminal justice-involved adults has improved over time in Wisconsin.
Methods

We conducted a retrospective cohort study including all HIV-infected patients receiving ART and released from a Wisconsin state prison between 2011 and 2015.

We analyzed data from three sources:

1. A public health surveillance database (eHARS)
2. A hospital-based electronic health records system (Epic)
3. An IRB-approved prospective cohort study (Wisconsin Transitions Study)
Methods (cont.)

The Wisconsin Transitions Study

• An NIH-funded, observational cohort study (K23DA032306)

• All HIV+ patients residing in a WI DOC facility since 2013 are invited to participate (>98% consent to participate)

• Data collection occurs before and after release from prison

• A waiver of informed consent was obtained to review charts of incarcerated patients released between 2011-13

<table>
<thead>
<tr>
<th></th>
<th>Electronic Health Record</th>
<th>HIV Surveillance (eHARS)</th>
<th>Pre- &amp; Post-Release Interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Retrospective Cohort (2011-13)</strong></td>
<td>♦</td>
<td>♦</td>
<td></td>
</tr>
<tr>
<td><strong>Prospective Cohort (2013-16)</strong></td>
<td>♦</td>
<td>♦</td>
<td>♦</td>
</tr>
</tbody>
</table>
Methods (cont.)

• We searched the Wisconsin AIDS/HIV program database (eHARS), which captures HIV-related laboratory data through mandatory electronic reporting, to determine whether participants (1) were linked to care and (2) maintained HIV viral suppression during the first 6 months after their release date.

The 2 outcomes were defined as follows:

  **Linkage to Care:** Evidence of any HIV RNA test reported to eHARS during the first 6 months after release

  **Viral Suppression:** A participant was linked to care AND had HIV RNA<200 copies/mL
Methods (cont.)

- We compared frequency of the 2 HIV care outcomes each time a person was released from prison and fell into one of two categories:

  **Intervention**: Participated in LTC intervention at the time of release from prison (2013-15)
  **Control**: Did not receive LTC intervention:
  - Released in 2011-13
  - Lived outside of intervention catchment area
  - Declined to participate in the program

- Using logistic regression with generalized estimating equations to account for intra-individual correlation, we compared post-release outcomes between individuals who received the patient navigation intervention to those who did not.
## Results

### Baseline characteristics of study sample

<table>
<thead>
<tr>
<th></th>
<th>Ever received patient navigation intervention (N=48)</th>
<th>Received no intervention (N=97)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (mean ± sd)†</td>
<td>40.4 ± 10.4</td>
<td>43.9 ± 9.2</td>
<td>0.26</td>
</tr>
<tr>
<td>Female gender</td>
<td>6 (12.50)</td>
<td>5 (5.15)</td>
<td>0.12</td>
</tr>
<tr>
<td>Race/ethnicity</td>
<td></td>
<td></td>
<td>0.16</td>
</tr>
<tr>
<td>African-American</td>
<td>29 (61.7)</td>
<td>55 (57.9)</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>11 (23.4)</td>
<td>32 (33.7)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>7 (14.9)</td>
<td>8 (8.4)</td>
<td></td>
</tr>
<tr>
<td>Receiving HIV care prior to incarceration</td>
<td>35 (74.5)</td>
<td>52 (55.3)</td>
<td>0.028</td>
</tr>
<tr>
<td>HIV risk factors‡</td>
<td></td>
<td></td>
<td>0.59</td>
</tr>
<tr>
<td>Injection drug use</td>
<td>7 (25.0)</td>
<td>15 (29.4)</td>
<td></td>
</tr>
<tr>
<td>Male-to-male sexual contact</td>
<td>6 (21.4)</td>
<td>12 (23.5)</td>
<td></td>
</tr>
<tr>
<td>Heterosexual contact only</td>
<td>13 (46.4)</td>
<td>23 (45.1)</td>
<td></td>
</tr>
<tr>
<td>Hepatitis C infected</td>
<td>9 (19.2)</td>
<td>19 (20.0)</td>
<td>0.90</td>
</tr>
<tr>
<td>Alcohol use disorder</td>
<td>5 (10.6)</td>
<td>6 (6.3)</td>
<td>0.36</td>
</tr>
<tr>
<td>Opioid use disorder</td>
<td>4 (8.5)</td>
<td>11 (11.6)</td>
<td>0.58</td>
</tr>
</tbody>
</table>

† All data presented are N (%), unless otherwise specified

‡ Risk factor data missing/unknown for 20 individuals in the navigation group, 46 individuals in the no intervention group.
Results

Individual patients and release events

• Between January 2011 and June 2015, 145 individuals were released from prison a total of 184 times.
  
  42 releases: Received patient navigation intervention
  142 releases: Standard case management only

• Overall, participants were more likely to be linked to care within six months (92.8% vs 65.5%, p< 0.001) and were more likely to have viral suppression (85.7% vs 45.1%, p<0.001) if they received the patient navigation intervention at the time of release from prison.
Results

Linkage to care within 6 months of prison release

- **Overall**
- **Intervention**
- **Control**
Results

Time elapsed between release and linkage to community-based HIV care

Median time to linkage after release
Patient Navigation Group: **9 days**
No Intervention Group: **77 days**
Results

Documented viral suppression (HIV RNA < 200 copies/ML) during first 6 months after release from prison

![Graph showing viral suppression percentages over years.](graph.png)
Results

Multiple logistic regression results

Factors associated with HIV suppression during first six months after prison release (N=184)

<table>
<thead>
<tr>
<th>Participant characteristics</th>
<th>Adjusted Odds Ratio</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (per 1 year)</td>
<td>1.02</td>
<td>0.98 – 1.06</td>
</tr>
<tr>
<td>Past injection drug use</td>
<td>0.73</td>
<td>0.35 – 1.51</td>
</tr>
<tr>
<td>Black/African-American race</td>
<td>1.04</td>
<td>0.52 – 2.07</td>
</tr>
<tr>
<td>Received HIV care before incarceration</td>
<td>0.61</td>
<td>0.30 – 1.24</td>
</tr>
<tr>
<td><strong>Received patient navigation intervention</strong></td>
<td><strong>7.42</strong></td>
<td><strong>2.99 – 18.43</strong></td>
</tr>
</tbody>
</table>
Discussion

• Patient navigation appears to significantly improve linkage to community-based HIV care and viral suppression after release from prison

• This was not a randomized trial. Interpretation of the findings should take into consideration the possibility that unmeasured confounders influenced the superior outcomes observed when participants received patient navigation.

• Ongoing qualitative analysis of interviews conducted with participants before and after release will yield additional insights into the specific barriers encountered by people living with HIV, and how interventions such as patient navigation can be best implemented to facilitate optimal HIV care outcomes.
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