Effect of peer mentoring to improve retention in HIV care and HIV viral load in hospitalized, out-of-care patients

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June 29, 2015
Background:

The HIV Treatment Cascade

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Background: Harris Health System

- Thomas Street Health Center opened in 1989, provides HIV care, and served >5300 unique patients in 2014
- TSHC has had a volunteer peer mentoring program since 2005
- Mentors work with new patients during the first visit to TSHC to increase knowledge about the clinic, navigate, and increase comfort with the staff, facility, and living with HIV
- Preliminary data: mentoring increased short-term retention after the first visit
- Ben Taub General Hospital, tertiary hospital
- Preliminary data: about 45% of persons discharged from Ben Taub General Hospital were retained in TSHC care in the next 180 days
Aim and Outcomes

- **Aim**: to improve engagement after discharge from BTGH

- **Primary composite outcome (6 months)**:
  - Attend $\geq 1$ HIV primary care visit within 30 days of discharge
  - Attend $\geq 1$ HIV primary care visit between 31 and 180 days of discharge
  - If ART indicated by guidelines, achieve a $\geq 1$ log10 decrease in HIV VL or maintain VL <400 c/mL at 180 days after discharge

- **Secondary outcomes**:
  - Components of the primary outcome
  - Hospitalization, emergency department, use of ART, CD4 cell count, VL<400, health related quality of life (HRQOL)
Methods: Peer Mentor Intervention

- Semi-structured intervention included:
  - Telling their story to the patient to model success (focus on overcoming stigma, fear, substance use, “death sentence” mentality)
  - Increasing information by discussing importance of HIV care and providing educational HIV literature and information about TSHC
  - Increasing motivation by motivating patient to increase their assessment of the importance of care and their ability to seek outpatient HIV care
  - Increasing behavioral skills by assessing barriers to care and developing an action plan to access sources of support for care and access outpatient care after discharge

- 3-5 mentors selected for extra training on study intervention:
  - 6 weeks of training: group and one-on-one sessions, manuals, role play
  - Standardized patients to certify quality of intervention every 4-6 months

- Attention control: safe sex (RESPECT), given by health educators
Methods: Intervention, Evaluation

Hospital

Intervention

- 2 sessions with mentor/educator

Evaluation

- Baseline survey
- 1, 2, 4, 6, 10 - week phone calls
- 3-month survey, CD4, HIV VL
- 6-month survey, CD4, HIV VL

Medical record review; electronic data transfer (1 yr before through 1.5 yrs after enrollment)

- Analysis plan: modified Intent to Treat (mITT), removing persons who moved out of area, withdrew consent, and were incarcerated
Methods: Recruitment

- Participants enrolled while hospitalized at Ben Taub General Hospital from August, 2010 to August, 2013

Inclusion Criteria

- Age ≥ 18 years
- Able to provide consent
- English or Spanish speaking
- Expected to be hospitalized ≥ 1 more night
- Not expected to be discharged to an institutional setting
- Referred to TSHC for follow-up care
- Out of care, defined as not “in care:”
  - In care: ≥ 3 consecutive VL <400 over > 6 months AND have completed HIV primary care visits in ≥ 3 of the last 4 quarter-year periods
  - Out of care: persons not “in care,” including persons diagnosed <1 year or transferring to TSHC
Results: Enrollment

Screened (n=1,804)

Eligible (n=778)
(43% of screened patients)

- Ineligible (n=1,026)
  (57% of screened patients)
  - Not intending to use TSHC (n=344)
  - “In Care” (n=227)
  - Expected to be discharged too soon (n=113)
  - Unable to provide consent (n=110)
  - Died or sent to hospice/institution (n=106)
  - Previously enrolled (n=63)
  - Did not speak English or Spanish (n=24)
  - Declined screening (n=20)
  - Enrolled in another study (n=19)

- Not enrolled (n=318)
  (41% of eligible patients)
  - Discharged before enrollment (n=270)
  - Declined enrollment (n=23)
  - No Spanish speaking interventionist (n=21)
  - Other (n=4)

Enrolled (n=460)
(59% of eligible patients)
Results: Randomization

Enrolled (n=460)

Randomized to mentor (n=225)
Received any intervention (n=219)

Excluded from analysis (n=23)
Jailed (n=9)
Moved (n=5)
Withdrew consent (n=9)

mITT Analysis (n=202)
(90% of mentored patients)

Randomized to control (n=235)
Received any intervention (n=232)

Excluded from analysis (n=20)
Jailed (n=6)
Moved (n=5)
Withdrew consent (n=9)

mITT Analysis (n=215)
(92% of controlled patients)
## Baseline Characteristics: The Modified Intent-to-Treat Population

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Mentored Arm n=202</th>
<th>Control Arm n=215</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td>0.94</td>
</tr>
<tr>
<td>&lt;30</td>
<td>26 (13%)</td>
<td>26 (13%)</td>
<td></td>
</tr>
<tr>
<td>30-39</td>
<td>53 (26%)</td>
<td>61 (28%)</td>
<td></td>
</tr>
<tr>
<td>40-49</td>
<td>73 (36%)</td>
<td>73 (34%)</td>
<td></td>
</tr>
<tr>
<td>≥50</td>
<td>50 (25%)</td>
<td>55 (26%)</td>
<td></td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
<td>0.34</td>
</tr>
<tr>
<td>Black</td>
<td>131 (65%)</td>
<td>147 (68%)</td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>45 (22%)</td>
<td>36 (17%)</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>26 (13%)</td>
<td>32 (15%)</td>
<td></td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
<td>0.54</td>
</tr>
<tr>
<td>Male</td>
<td>145 (72%)</td>
<td>160 (74%)</td>
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</tr>
<tr>
<td>Female</td>
<td>57 (28%)</td>
<td>55 (26%)</td>
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</table>
## Baseline Characteristics:
The Modified Intent-to-Treat Population

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<th>Characteristic</th>
<th>Mentored Arm n=202</th>
<th>Control Arm n=215</th>
<th>P</th>
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<tbody>
<tr>
<td>Initial CD4</td>
<td></td>
<td></td>
<td>0.11</td>
</tr>
<tr>
<td>&lt;200</td>
<td>132 (66%)</td>
<td>137 (64%)</td>
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</tr>
<tr>
<td>200-349</td>
<td>19 (10%)</td>
<td>37 (17%)</td>
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</tr>
<tr>
<td>350-500</td>
<td>13 (7%)</td>
<td>12 (6%)</td>
<td></td>
</tr>
<tr>
<td>&gt;500</td>
<td>36 (18%)</td>
<td>29 (13%)</td>
<td></td>
</tr>
<tr>
<td>Initial VL</td>
<td></td>
<td></td>
<td>0.16</td>
</tr>
<tr>
<td>&lt;400</td>
<td>44 (22%)</td>
<td>41 (19%)</td>
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</tr>
<tr>
<td>400-100,000</td>
<td>70 (35%)</td>
<td>60 (28%)</td>
<td></td>
</tr>
<tr>
<td>&gt;100,000</td>
<td>86 (43%)</td>
<td>111 (52%)</td>
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<table>
<thead>
<tr>
<th>HIV Diagnosis</th>
<th>Mentored Arm n=202</th>
<th>Control Arm n=215</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>New</td>
<td>24 (12%)</td>
<td>23 (11%)</td>
<td>0.76</td>
</tr>
<tr>
<td>Previous</td>
<td>178 (88%)</td>
<td>192 (89%)</td>
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<tr>
<td>HIV diagnosis</td>
<td></td>
<td></td>
<td>0.51</td>
</tr>
<tr>
<td>&lt; 1 year</td>
<td>57 (28%)</td>
<td>54 (25%)</td>
<td></td>
</tr>
<tr>
<td>&gt; 1 year</td>
<td>145 (72%)</td>
<td>161 (75%)</td>
<td></td>
</tr>
<tr>
<td>On or should be on ART</td>
<td></td>
<td></td>
<td>0.52</td>
</tr>
<tr>
<td>Yes</td>
<td>191 (95%)</td>
<td>200 (93%)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>11 (5%)</td>
<td>15 (7%)</td>
<td></td>
</tr>
</tbody>
</table>
Primary and Secondary Outcomes:

- Primary Outcome: Success
  - Mentor (n=202):
  - Control (n=215):
  - 28% Success

$p=0.94$
Primary and Secondary Outcomes:

Mentor (n=202)  
Control (n=215)  

- **Primary Outcome Success**: 28% (Mentor) vs. 28% (Control), p=0.94
- **Visit <31 days**: 49% (Mentor) vs. 48% (Control), p=0.90
- **Visit 31-180 days**: 67% (Mentor) vs. 71% (Control), p=0.46
- **Retention in Care**: 40% (Mentor) vs. 40% (Control), p=0.93
- **VL <400**: 46% (Mentor) vs. 39% (Control), p=0.18
- **VL Improve**: 54% (Mentor) vs. 48% (Control), p=0.18
Secondary Outcomes:

- Hospital Visit: Mentor 43% vs. Control 40%, p=0.46
- ER Visit: Mentor 29% vs. Control 33%, p=0.29
- CD4 >350: Mentor 26% vs. Control 22%, p=0.35
- Taking ART: Mentor 61% vs. Control 61%, p=0.93

- No significant differences in change in Health Related Quality of Life
Post hoc Analyses: VL Improvement

Full dose:
2 Sessions
3 phone calls
(n = 218)
Mentor (n=124)
Control (n=94)

Initial VL ≥400
(n = 327)
Mentor (n=156)
Control (n=171)
Post hoc Analyses:
Length of Stay on VL Improvement

- **Interaction significant** ($p<0.05$) in logistic regression model
Hospitalization represents an opportunity to find and engage out-of-care patients for both service delivery and research.

Mentoring, while promising, may not be potent enough to overcome systemic and some of the more significant barriers to care (eg, substance use and mental health problems).

Attention control may have provided too much support.

Mentoring appeared to have some effect in persons hospitalized for a shorter time, while persons hospitalized for a longer time did better regardless of mentoring.

- Mentoring may be beneficial for persons with less severe disease or who get less support from social services providers based at the hospital.
- Additional qualitative and quantitative analyses are underway.

VL outcomes 6% - 7% higher in the mentor arm (P=0.18), and adherence was slightly higher in the mentored arm.

- If this is a real effect, number needed to treat ~15 persons.
Conclusions

- The mentoring intervention did not have a statistically significant or clinically meaningful effect on outcomes, including re-establishing care, VL improvement, HRQOL, and health care utilization.
- Enhanced or intensified interventions warrant further study.
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[Logos of VA Health Care, IQuEST, and Harris Health System]