Identifying Best Practices for Promoting Linkage to, Retention, and Re-engagement in HIV Care: Findings from a Systematic Review

Darrel H. Higa, Nicole Crepaz, Cindy Lyles, for the Prevention Research Synthesis Team
Prevention Research Branch
Division of HIV/AIDS Prevention

9th International Conference on HIV Treatment and Prevention Adherence
6/10/14
Disclosures

• No conflict of interest
Today’s Presentation

- Background
- Criteria Development
- Inclusion/Exclusion Criteria
- Evaluation Criteria
- Evidence-based LRC Interventions (EBIs)
- Evidence-informed LRC interventions (EIs)
- Challenges
- Next Steps
Background

- Increased focus on HIV care continuum
- NHAS goals
Criteria Development Process

- Reviewed seminal LRC studies
- Drafted evaluation criteria
- Conducted 3 CDC internal consultations
- Conducted 2 external consultations at IAPAC 2012 and 2013
- Received DHAP input
Consultants

**CDC**
- Jason Craw
- Nicole Crepaz
- Lytt Gardner
- Cindy Lyles
- Gary Marks
- Janet Heitgerd
- Luke Shouse
- Linda Koenig
- David Purcell
- Arin Freeman
- Raekiela Taylor

**NIMH**
- Cyndi Grossman
- Michael Stirratt

**External**
- Rivet Amico
- Tom Giordano
- Lisa Hightow-Weidman
- Lisa Metsch
- Michael Mugavero
- Stephen Safren
- Amy Wohl
Review Inclusion Criteria

• All types of LRC interventions
• Study design
  – U.S. based: RCT or non-RCT; 1-group pre-post
  – International: RCT
• Published between 1996 – Feb 2013
• Focused on people diagnosed with HIV
• Relevant LRC outcomes reported
  – linkage, retention, re-engagement
• Used relevant measures
  – HIV med visits documented in medical or agency records or surveillance reports
  – HIV viral loads and/or CD4 counts as proxies for HIV med visits in above reports
  – Self-reports validated by med or agency records, or surveillance reports
Review Exclusion Criteria

• Health care utilization
• Outcomes not specific to HIV care
• Self-reported outcomes
• Lack of pre-intervention data for one-group studies
Evaluation Criteria by Study Design

Study Design
Does the study have a comparison arm?

Yes
Between-groups comparison
Evaluate using Evidence-Based (EB) Criteria
Determined to be Evidence-Based (EB)

No
Within-groups comparison
Evaluate using Evidence-Informed (EI) Criteria
Determined to be Evidence-Informed (EI)
Evidence-based Criteria

• Studies evaluated on:
  – Study design quality
  – Study implementation quality
  – Appropriateness of analysis
  – Strength of evidence
  – Other limitations

• Significant positive intervention effects based on between group comparisons on relevant outcomes
• No significant negative intervention effects
Evidence-informed Criteria

• Significant positive pre-post intervention changes for relevant LRC outcomes

• No significant negative pre-post intervention changes for relevant LRC outcomes
LRC Systematic Search (Jan 1996-Feb 2013)

- Records identified through database searching (n=10,724)
- Additional records identified through other sources (n=84)

Studies excluded after review of titles and abstracts (n=10,314)

- Non-interventions (n=315)
- Studies excluded after full review (n=132)

LRC-related data (n=467)

- Full reports reviewed (n=152)

Unique LRC Interventions (n=20)
Reviewed with EB criteria (n=13)
Reviewed with EI criteria (n=7)
## LRC Evidence-Based Interventions (EBIs)

<table>
<thead>
<tr>
<th>Author (Pub. Year)</th>
<th>Intervention Name</th>
<th>Intervention Effect</th>
<th>Primary Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gardner (2005)</td>
<td>ARTAS</td>
<td>Linkage</td>
<td>Strengths-based case management</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Retention</td>
<td></td>
</tr>
<tr>
<td>Robbins (2011)</td>
<td>Virology FastTrack</td>
<td>Retention</td>
<td>Interactive notification system for providers</td>
</tr>
<tr>
<td>Lucas (2010)</td>
<td>Clinic-based Buprenorphine (BUP)</td>
<td>Retention</td>
<td>Co-location of drug Tx and HIV med care</td>
</tr>
<tr>
<td>Muhamadi (2010)</td>
<td>Extended Counseling</td>
<td>Linkage</td>
<td>Counselor training &amp; home visits by peers</td>
</tr>
</tbody>
</table>
LRC Studies that failed EB Criteria

- 9 studies: 7 U.S., 2 International
- Majority focused on retention in care
- Most common reasons:
  - No statistically significant positive findings (n=9)
  - Sample size < 40 (n=3)
  - Non-appropriate comparison arm (n=2)
  - LRC outcome did not occur within required time point (n=2)
  - Biased allocation to arms (n=2)
<table>
<thead>
<tr>
<th>Author (Pub. Year)</th>
<th>Intervention Name</th>
<th>Intervention Effect</th>
<th>Primary Strategies</th>
</tr>
</thead>
</table>
| Gardner (2012)   | Stay Connected            | Retention           | • Brochures/posters in exam & waiting rooms  
                          • Brief verbal messages                                      |
| Hightow-Weidman (2011) | STYLE                     | Retention           | • Case management  
                          • Counseling/support  
                          • Appointment scheduling                                      |
| Davila (2013)    | Centralized HIV Services  | Retention           | Addition of health care staff specializing in youth to HIV clinic                    |
| Enriquez (2010)  | Bilingual Care Team       | Retention           | Addition of bilingual health care staff to HIV clinic                                   |
| Mugavero (2008)  | Project CONNECT           | Linkage             | Scheduling orientation visit 5 days after call to clinic                               |
LRC Studies that failed EI Criteria

- 2 U.S. studies
- Focused on HIV testing and linkage to care
- No significant positive findings pre to post
Summary

- 4 EBIs and 5 EIs identified
- Most common reason for failing PRS criteria
  - not having significant positive findings
- Most delivered in the clinic setting
- Majority focused on retention in care
  - EBs: 2 retention, 1 linkage, 1 linkage/retention
  - EIs: 4 out of 5 focus on retention outcomes
- Various intervention strategies
- No re-engagement interventions met criteria
Challenges

How to …

• systematically review evaluation reports that are not available in peer-review journals
• prevent conflation of EBs and EIs
• collect high impact prevention-related data (e.g., cost, sustainability) not readily reported to inform research translation
Next Steps

- Add new LRC chapter to PRS compendium
- Evaluate 2013 LRC studies
- Publish findings in peer-review journal
- Translate intervention strategies into practice
- Identify promising approaches
- Explore non-peer reviewed reports
Acknowledgments

PRS Project
- Nicole Crepaz
- Addie Adegbite
- Brittney Baack
- Terrika Barham
- Julia DeLuca
- Emiko Kamitani
- Mary Mullins
- Nicole Pitts
- Theresa Sipe
- Malu Tungol
- Waverly Vosburgh
- Christina White
- Cindy Lyles (former PRS member)
Mahalo (Thank you)

Contact information:
Darrel Higa
DHiga@cdc.gov

For more information please contact Centers for Disease Control and Prevention

1600 Clifton Road NE, Atlanta, GA 30333
Telephone: 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348
E-mail: cdcinfo@cdc.gov  Web: http://www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.
## ARTAS

<table>
<thead>
<tr>
<th>Target Population</th>
<th>Intervention Components</th>
<th>Intervention Effect</th>
</tr>
</thead>
</table>
| Recently diagnosed HIV+ patients           | • Strengths-based approach  
• Up to 5 visits with case manager  
• Informational packets  
• Case manager encouraged contact with a clinic and accompanied patient | **Linkage to care:**  
† 1\textsuperscript{st} HIV care visit in 6 months over 12 mos.  
**Retention in care:**  
† at least 1 HIV care visit in each of 2 consecutive 6-month follow-up periods over 12 mos. |

# Virology FastTrack

<table>
<thead>
<tr>
<th>Target Population</th>
<th>Intervention Components</th>
<th>Intervention Effect</th>
</tr>
</thead>
</table>
| HIV+ clinic patients | Interactive alerts notified providers of missed appointments or adverse events via:  
  - provider’s electronic medical record (EMR) “home page”  
  - patient-specific EMR page  
  - biweekly emails | Retention in care:  
↓ Missed HIV care appointments (no completed appointment for > 6 months over a 12-month period) |

## Clinic-Based Buprenorphine (BUP)

<table>
<thead>
<tr>
<th>Target Population</th>
<th>Intervention Components</th>
<th>Intervention Effect</th>
</tr>
</thead>
</table>
| Opioid dependent HIV+ clinic patients | Clinic-based BUP  
• BUP induction and dose titration  
• Urine drug testing  
• Individual counseling | Retention in care:  
↑ # of HIV care visits over 12 months |

## Extended Counseling

<table>
<thead>
<tr>
<th>Target Population</th>
<th>Intervention Components</th>
<th>Intervention Effect</th>
</tr>
</thead>
</table>
| Newly diagnosed HIV+ patients | • Post-test counseling by trained counselors  
• Monthly home visits by community support agents (e.g., influential community volunteers, peers) | *Linkage to care:*  
↑ 1<sup>st</sup> HIV care visit measured over 5 months |

### Stay Connected

<table>
<thead>
<tr>
<th>Target Population</th>
<th>Intervention Components</th>
<th>Intervention Effect</th>
</tr>
</thead>
</table>
| HIV+ clinic patients | • Print reminder materials: brochures, exam and waiting room posters  
• Brief verbal messages delivered by all clinic staff | Retention in care:  
↑ Kept 2 consecutive HIV care visits over 12 mos.  
↑ Proportion of all scheduled HIV care visits kept over 12 mos. |

## STYLE

<table>
<thead>
<tr>
<th>Target Population</th>
<th>Intervention Components</th>
<th>Intervention Effect</th>
</tr>
</thead>
</table>
| Young HIV+ Black or African American and Hispanic or Latino MSM | • Social marketing campaign  
• Outreach  
• Increased HIV testing services  
• Support group meetings  
• Case management  
• Help with appointment scheduling | Retention in care: ↑ At least 1 HIV care visit per 4-month period over 24 mos. |

## Bilingual/Bicultural Care Team

<table>
<thead>
<tr>
<th>Target Population</th>
<th>Intervention Components</th>
<th>Intervention Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV+ Hispanic or Latino clinic patients</td>
<td>• Comprised of bilingual nurse practitioner, Ryan White case manager, peer educator</td>
<td>Retention in care: ↑ mean # of scheduled and kept visits over 12 months</td>
</tr>
<tr>
<td></td>
<td>• Patient education and case management materials in Spanish</td>
<td></td>
</tr>
</tbody>
</table>

## Centralized HIV Services

<table>
<thead>
<tr>
<th>Target Population</th>
<th>Intervention Components</th>
<th>Intervention Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young HIV+ black or African-American and Hispanic or Latino clinic patients</td>
<td>Multidisciplinary youth clinic staffed by youth-focused health care providers, social workers, and case managers</td>
<td>Retention in care: ↑ Having 3 or more quarters with at least 1 visit in 12 mos. ↓ 6-mos gap in care during 12 mos.</td>
</tr>
</tbody>
</table>

# Project CONNECT

<table>
<thead>
<tr>
<th>Target Population</th>
<th>Intervention Components</th>
<th>Intervention Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV+ clinic patients</td>
<td>Scheduled orientation visit within 5 days of initial call to clinic</td>
<td>Linkage to care: ↓ No shows for first clinic visit over 6 months</td>
</tr>
<tr>
<td></td>
<td>• Semi-structured interview</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Psychosocial survey</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Baseline lab testing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Meeting with social worker if uninsured</td>
<td></td>
</tr>
</tbody>
</table>