Adherence through the Continuum: From Testing to Virologic Suppression... From Individuals to Communities

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University of Alabama at Birmingham
May 1, 2015
Objective

✓ Develop a plan to improve linkage to care, ‘engagement,’ and retention in care for HIV-positive individuals with emphasis on:

- Monitoring & measurement
- Evidence-informed interventions & programs
- Community planning & coordination
US HIV Care Continuum, 2011

50%

MMWR; 63(47);1113-1117, Available at: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6347a5.htm
Case presentation

✓ 21 y/o AAM diagnosed with HIV 06/2009
✓ Established care and started ART 08/2009
✓ Excellent initial response to treatment

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<tr>
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</thead>
<tbody>
<tr>
<td>HIV VL c/mL</td>
<td>115,000</td>
<td>384</td>
<td>&lt;48</td>
<td>&lt;48</td>
</tr>
<tr>
<td>CD4 count</td>
<td>78</td>
<td>251</td>
<td>376</td>
<td>455</td>
</tr>
</tbody>
</table>
Case presentation

✓ Sporadic visits and then lost to care
✓ Re-engaged after lengthy gap...
✓ Cough, weight loss, night sweats, KS lesions

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</thead>
<tbody>
<tr>
<td>HIV VL c/mL</td>
<td>&lt;48</td>
<td>22,700</td>
<td>80,300</td>
<td>200,000</td>
</tr>
<tr>
<td>CD4 count</td>
<td>455</td>
<td>248</td>
<td>108</td>
<td>64</td>
</tr>
</tbody>
</table>
## HRSA Continuum of Care

<table>
<thead>
<tr>
<th>Not in Care</th>
<th>Fully engaged</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unaware of HIV status</td>
<td>Entered HIV medical care but not HIV care</td>
</tr>
<tr>
<td>Aware of HIV status</td>
<td>In and out of HIV care or infrequent user</td>
</tr>
<tr>
<td>May be receiving other medical care but not HIV care</td>
<td>Fully engaged in HIV medical care</td>
</tr>
</tbody>
</table>
FOCUSING THE NATIONAL HIV/AIDS STRATEGY

THE HIV CARE CONTINUUM INITIATIVE

THE WHITE HOUSE
WASHINGTON

Only 1 IN 4
HIV POSITIVE PEOPLE ARE SUCCESSFULLY MAKING IT
THROUGH THE HIV CARE CONTINUUM
& GETTING THE FULL BENEFITS OF TREATMENT

National HIV/AIDS Strategy

Increase HIV serostatus awareness from 79% to 90%

Increase linkage to care w/in 3 months of Dx from 65% to 85%

Increase proportion of HIV Dx’d persons with undetectable VL by 20%

Increase RW clients in continuous care from 73% to 80%

Adapted from: Mugavero et al. Clin Infect Dis 2011;52(S2)
Implications of poor engagement

- Individual Level
  - Delayed ART receipt & ART non-adherence
  - Inferior CD4 count & viral load outcomes
  - Emergence of HIV resistance mutations
  - Increased risk for clinical events & mortality

- Community Level
  - Contributor to health care disparities
  - Role in HIV transmission
    - Change in risk transmission behaviors
    - Impact of ART in reducing transmission

CDC: Disparities on HIV Care Continuum

Over the last 20 years, the average CD4 count at presentation for care among persons recently diagnosed w/ HIV has?

1. Increased significantly
2. Decreased significantly
3. Remained relatively unchanged
Temporal trends in late diagnosis

CD4 = 307.0 + 1.5(year)

Lesko et al. Clin Infect Dis 2013;57
US HIV Care Continuum, 2011

- Diagnosed but not in care: 66%
- On ART but not virally suppressed: 10%
- In care but not on ART: 4%
- Not diagnosed: 20%
- Not virally suppressed: 30%
- Virally suppressed: 70%
Diagnosed but not in HIV care...
Engagement: 3 distinct components
Dear Colleague:

The Division of HIV/AIDS Prevention is pleased to announce a new resource for state and local health departments on the use of HIV surveillance data to support the HIV care continuum. The Data to Care: A Public Health Strategy Using HIV Surveillance Data to Support the HIV Care Continuum toolkit can be accessed under the Public Health Strategies section of www.effectiveinterventions.org.

Two key goals of the National HIV/AIDS Strategy are to reduce new HIV infections and to improve the continuum of care. The Division of HIV/AIDS Prevention strongly encourages state and local health departments to use HIV case surveillance data to improve the continuum of care in their communities, including the use of individual-level data to offer linkage and re-engagement to care services when appropriate. The Data to Care toolkit is one resource to assist programs in moving forward with these activities. The Division of HIV/AIDS Prevention will continue to provide resources and technical assistance to assist you in these efforts.

Sincerely,

/Janet C. Cleveland/

Janet C. Cleveland, M.S.
Deputy Director for Prevention Programs
Division of HIV/AIDS Prevention
National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention
Centers for Disease Control and Prevention

/Amy Lansky/

Amy Lansky, Ph.D., MPH
Deputy Director for Surveillance, Epidemiology and Laboratory Sciences
Division of HIV/AIDS Prevention
National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention
Centers for Disease Control and Prevention

Figure. Kaplan-Meier survival curve for time from HIV diagnosis to viral suppression, by entry to care within 3 months of HIV diagnosis.

Hall HI, et al. (2013); PLoS ONE 8(12): e84318. doi:10.1371/journal.pone.0084318
http://www.plosone.org/article/info:doi/10.1371/journal.pone.0084318
Which of the following factors best predicts long-term mortality among persons initiating outpatient HIV care?

1. Viral load at care entry
2. Missed (no show) visits in 1st year
3. ART initiation in 1st year
4. CD4 count at care entry
5. 1 and 3
6. 2 and 4
Early missed visits and mortality

Study of UAB 1917 Clinic patients initiating outpatient HIV care, 2000 - 2005 (N=543)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>HR (95%CI)(^a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>“No show” visit in 1(^{st}) year</td>
<td>2.90 (1.28-6.56)</td>
</tr>
<tr>
<td>Age (HR per 10 years)</td>
<td>1.58 (1.12-2.22)</td>
</tr>
<tr>
<td>CD4 count &lt;200 cells/(\mu)L</td>
<td>2.70 (1.00-7.30)</td>
</tr>
<tr>
<td>Log(_{10}) plasma HIV RNA</td>
<td>1.02 (0.75-1.39)</td>
</tr>
<tr>
<td>ART started in 1(^{st}) year</td>
<td>0.64 (0.25-1.62)</td>
</tr>
</tbody>
</table>

\(^a\) Cox proportional hazards (PH) analysis also adjusts for sex, race/ethnicity, insurance, affective mental health disorder, alcohol abuse, and substance abuse.

Mugavero et al. *Clin Infect Dis* 2009;48
<table>
<thead>
<tr>
<th>Measure</th>
<th>Missed visit data?</th>
<th>Ease of calculating</th>
<th>Follow-up time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Missed visit</td>
<td>Yes</td>
<td>Easy</td>
<td>~1 day</td>
</tr>
<tr>
<td>Appointment adherence</td>
<td>Yes</td>
<td>Moderate</td>
<td>~1 yr</td>
</tr>
<tr>
<td>No-show rate</td>
<td>Yes</td>
<td>Moderate</td>
<td>~1 yr</td>
</tr>
<tr>
<td>Constancy: Visit per 3, 4 or 6 mo intervals</td>
<td>No</td>
<td>Moderate</td>
<td>~1 yr</td>
</tr>
<tr>
<td>Gaps</td>
<td>No</td>
<td>Easy</td>
<td>~1 yr</td>
</tr>
<tr>
<td>HRSA/HAB</td>
<td>No</td>
<td>Moderate-to-difficult</td>
<td>1 yr</td>
</tr>
<tr>
<td>DHHS</td>
<td>No</td>
<td>Moderate-to-difficult</td>
<td>2 yrs</td>
</tr>
</tbody>
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Cross-tab of HRSA HAB & Missed Visit Measures, CNICS n~4000

<table>
<thead>
<tr>
<th>HRSA HAB Quality Indicator</th>
<th>Missed “No Show” Visits</th>
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<tbody>
<tr>
<td></td>
<td>Retained (Zero “no show”)</td>
</tr>
<tr>
<td>Retained</td>
<td>1725 (41%)</td>
</tr>
<tr>
<td>Not Retained</td>
<td>251 (6%)</td>
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Mortality by cross-tab of HRSA HAB & Missed Visit Measures, CNICS n~4000

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<tr>
<td>HR=1.01;0.54-1.87</td>
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Mortality by cross-tab of HRSA HAB & Missed Visit Measures, CNICS n~4000
### Mortality by cross-tab of HRSA HAB & Missed Visit Measures, CNICS n~4000

#### Missed “No Show” Visits

<table>
<thead>
<tr>
<th>HRSA HAB Quality Indicator</th>
<th>Retained (Zero “no show”)</th>
<th>Not Retained (≥1 “no show”)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retained</td>
<td>1725 (41%)</td>
<td>1753 (42%)</td>
</tr>
<tr>
<td>Referent</td>
<td></td>
<td>HR=1.72;1.33-2.21</td>
</tr>
<tr>
<td>Not Retained</td>
<td>251 (6%)</td>
<td>433 (10%)</td>
</tr>
<tr>
<td></td>
<td>HR=1.01;0.54-1.87</td>
<td>HR=1.48;1.33-1.65</td>
</tr>
</tbody>
</table>
All of the following are evidence-based approaches to improve linkage and/or retention in HIV care except?

1. Patient/peer navigation
2. Contingency management (p4p)
3. Intensive outreach
4. Linkage case management (ARTAS)
<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Strength/Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitor entry into HIV care</td>
<td>IIA</td>
</tr>
<tr>
<td>Monitor retention in HIV care</td>
<td>IIA</td>
</tr>
<tr>
<td>Brief, strength-based CM for linkage (ARTAS model)</td>
<td>IIB</td>
</tr>
<tr>
<td>Intensive outreach for retention</td>
<td>IIIC</td>
</tr>
<tr>
<td>Peer of paraprofessional patient navigation for retention</td>
<td>IIIC</td>
</tr>
</tbody>
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Guidelines: Engagement in Care

Thompson MA et al. *Ann Intern Med* 2012;156
Compendium of Evidence-Based Interventions and Best Practices for HIV Prevention

- NEW Linkage to, Retention in, and Re-engagement in HIV Care (LRC) Chapter
- Risk Reduction (RR) Chapter

NEW Linkage to, Retention in, and Re-engagement in HIV Care (LRC) Chapter

- Background
- LRC Best Practices Review Methods
- LRC Best Practices Criteria
- Complete List of LRC Best Practices
- Stratified List of All LRC Best Practices, by Characteristic
Clinic Flowchart

1. Complete the Clinic Readiness Assessment

2. Check out the Additional Resources tool for help improving your clinic’s capacity

3. Do you know which engagement in care interventions are right for your clinic?
   - Yes
     - Click on the appropriate engagement in care intervention for resources and more information
   - No
     - Check out the Engagement in Care Interventions Chart

http://aidsetc.org/engagement-toolkit
Back to our case...

- Resumed ART & chemo with good response
- VL rebound & no show visit → personal call
- Improved retention, sustained VL suppression, triathlon summer 2014!

<table>
<thead>
<tr>
<th>Date</th>
<th>HIV VL c/mL</th>
<th>CD4 count</th>
</tr>
</thead>
<tbody>
<tr>
<td>04/2013</td>
<td>200,000</td>
<td>64</td>
</tr>
<tr>
<td>07/2013</td>
<td>79</td>
<td>253</td>
</tr>
<tr>
<td>12/2013</td>
<td>525</td>
<td>226</td>
</tr>
<tr>
<td>03/2014</td>
<td>&lt;20</td>
<td>365</td>
</tr>
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</table>
Questions for practice & research...

✓ Is there an optimal depiction of the “Continuum”?

✓ Can we achieve consensus on how ‘engagement’ and related terms are defined operationally?

✓ How best to utilize “arrived” and “missed” visit measures of retention?

✓ What are best practices for implementation of ‘Data to Care’ programs?

✓ Coordination across community & clinical agencies?

✓ Role of Continuum in next 5 years of NHAS?
ACTHIV 2015: A State-of-the-Science Conference for Frontline Health Professionals

Activity Code FM923