Engagement in HIV Care: 2012 Update

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Outline for Talk

• What is Engagement in HIV Care?

• Why is Engagement in HIV Care Important?

• How can we improve engagement in HIV care?
What is Engagement in HIV Care?
HIV Care Continuum

Not in HIV Care  Engaged in HIV Care

Unaware of HIV infection  Aware of HIV infection (not in care)  Receiving some medical care but not HIV care  Entered HIV care but lost to follow-up  Cyclical or intermittent user of HIV care  Fully engaged in HIV care

Adapted from
Eldred et al AIDS Patient Care STDs 2007;21(Suppl1):S1-S2
Model Demonstrating the Spectrum of Engagement in HIV Care in the United States

![Graph showing the spectrum of engagement in HIV care. The graph indicates that there are 1,106,400 HIV-infected individuals.](image)
Model Demonstrating the Spectrum of Engagement in HIV Care in the United States
Model Demonstrating the Spectrum of Engagement in HIV Care in the United States

![Bar chart showing stages of HIV care engagement]

- HIV-Infected: 1,106,400
- HIV-Diagnosed: 874,056
- Linked to HIV Care: 655,542

Stage of Engagement in HIV Care
Model Demonstrating the Spectrum of Engagement in HIV Care in the United States

![Bar graph showing the number of individuals at different stages of engagement in HIV care: HIV-Infected (1,106,400), HIV-Diagnosed (874,056), Linked to HIV Care (655,542), and Retained in HIV Care (437,028).]
Model Demonstrating the Spectrum of Engagement in HIV Care in the United States
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Model Demonstrating the Spectrum of Engagement in HIV Care in the United States

![Graph showing the spectrum of engagement in HIV care in the United States. The stages are:
- HIV-Infected: 1,106,400
- HIV-Diagnosed: 874,056
- Linked to HIV Care: 655,542
- Retained in HIV Care: 437,028
- Need Antiretroviral Therapy: 349,622
- On Antiretroviral Therapy: 262,217
- Adherent/Undetectable: 209,773
- Overall Engagement Rate: 19%]
The HIV Engagement in Care Cascade for HIV-Infected Individuals, Denver, CO, 2005-2009

- HIV+, Previously Undiagnosed Target Population: 770
- HIV+, Diagnosed 2005-09: 616
- Linked to HIV Care in 18 months: 515
- Retained in HIV Care at 18 months: 457
- At least one HIV-RNA <400 copies/ml at 6-18 mo: 238
- HIV-RNA <400 copies/ml at 18 months: 216

Number of Individuals
Other Newer Data for Discussion

• Marks et al. estimated that 29 – 34% of HIV-infected individuals in the U.S. have an undetectable viral load (Clin Infect Dis 2011;53:1168–9)

• Dombrowski et al. estimate that 42 – 45% of HIV-infected individuals in Seattle King County are undetectable (AIDS 2011)
Simulations of the Engagement in HIV Care Spectrum to Account for Inaccuracy in our Engagement Estimates

(a) 19%  (b) 22%  (c) 34%  (d) 28%  (e) 21%  (f) 66%

Number of Individuals

Current  Dx 90%  Engage 90%  Treat 90%  VL<50 in 90%  Dx, Engage, Tx, and VL<50 in 90%

Un-Diagnosed HIV  Not Linked to Care  Not Retained in Care  ART Not Required  ART Not Utilized  Viremic on ART  Undetectable Viral Load
Conclusion – How are we doing?

• The best estimates of engagement in care suggest that < 50% of individuals achieve optimal outcomes
  – Most estimates suggest just 20 – 30% undetectable
• In order to vastly improve outcomes there will need to be improvement in the entire spectrum of engagement in HIV care
• Poor engagement in HIV Care poses great challenges to ‘Test and Treat’ strategies for HIV prevention
What factors are associated with Engagement in HIV Care?
Factors associated with poor engagement in HIV Care

- Younger Age
- Illicit drug use
- Higher CD4 counts
- Real and perceived stigma
- Depression
- Lack of social support
- Homelessness
- Lack of health insurance
- Living far from your place of HIV care
- Competing needs (food, shelter, clothing, etc.)
- Poor patient-provider relationship
- Feeling Healthy
- Transitions in care
  - Release from incarceration
  - Moving
  - Loss/gain of insurance
Why is Engagement in HIV Care Important?
What are some ‘individual’ goals for HIV care?
What are some ‘individual’ goals for HIV care?

• Maintaining good quality of life
• Staying healthy
• Staying out of the hospital
• Able to work
• Able to contribute to family and society
• Able to plan for the future
• Maintain financial stability
• Not transmitting HIV to others
• Staying alive
What are some ‘population’ goals for HIV care?
What are some ‘population’ goals for HIV care?

• Decreasing transmission of HIV to others
• Decreasing stigma of HIV infection
• Maintaining public health
• Maintaining life expectancy
How does poor engagement in care directly impact important population and individual outcomes?
Forward HIV Transmission from those Unaware of HIV Infection

• It’s estimated that 21% of HIV-infected individuals in the U.S. are unaware

• In Denver men who have sex with other men, a recent study found that 20% were unaware of their infection
  – 3rd Lowest Nationally
  – Highest was Baltimore, 73% of MSM unaware of their infection
    • Prevalence was 38%
<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Total no. tested</th>
<th>HIV prevalence</th>
<th>Unaware of HIV Infection</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No. (%)</td>
<td>(95% CI)</td>
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<tr>
<td><strong>Age group (yrs)</strong></td>
<td></td>
<td></td>
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<tr>
<td>18–19</td>
<td>423</td>
<td>28 (7)</td>
<td>(4–9)</td>
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<tr>
<td>20–24</td>
<td>1,466</td>
<td>170 (12)</td>
<td>(10–13)</td>
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<tr>
<td>25–29</td>
<td>1,529</td>
<td>223 (15)</td>
<td>(13–17)</td>
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<tr>
<td>40–49</td>
<td>1,712</td>
<td>474 (28)</td>
<td>(26–30)</td>
</tr>
<tr>
<td>≥50</td>
<td>792</td>
<td>197 (25)</td>
<td>(22–28)</td>
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<tr>
<td><strong>Race/Ethnicity†</strong></td>
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<tr>
<td>American Indian/Alaska Native</td>
<td>45</td>
<td>8 (18)</td>
<td>(8–32)</td>
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<tr>
<td>Asian</td>
<td>185</td>
<td>14 (8)</td>
<td>(4–12)</td>
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<tr>
<td>Black, non-Hispanic</td>
<td>1,895</td>
<td>539 (28)</td>
<td>(26–31)</td>
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<tr>
<td>Hispanic</td>
<td>2,045</td>
<td>358 (18)</td>
<td>(16–19)</td>
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<tr>
<td>Native Hawaiian/Pacific Islander</td>
<td>62</td>
<td>11 (18)</td>
<td>(9–30)</td>
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<tr>
<td>White, non-Hispanic</td>
<td>3,580</td>
<td>560 (16)</td>
<td>(15–17)</td>
</tr>
<tr>
<td>Other‡</td>
<td>336</td>
<td>72 (21)</td>
<td>(17–26)</td>
</tr>
</tbody>
</table>
HIV - Unaware

• Why is this population so important?
  – Although only 21% of individuals in the U.S. are HIV Unaware, it is estimated that 50 – 67% of new HIV transmissions come from this group (Hall H et al. AIDS 2012; published ahead of print)
  – For every 10 people who become aware of their HIV infection, there is 1 less HIV transmission event per year
Risk Behavior Decreases After Diagnosis

• Meta-analysis of 50 studies looking at behavior changes after HIV testing (+ or -)
  – MSM: reduction in ‘risky behavior’
  – IDU: decreased drug use and risky sex
  – Hetero: decreased risk behavior in sero-discordant couples
    • Higgins et al. JAMA 1991;266:2419-29.

• Denver Health – more seropositives than matched negatives reported using condoms
  • Cohn et al. 4th Intl. AIDS Conf, Stockholm, Sweden, 1988

• NYC – Two weeks after HIV status notification self-reported ‘unsafe sexual behaviors’ decreased
Risk Behavior Decreases During Treatment

Burman WJ. JAIDS 2008; 49:142-50
San Francisco Community Viral Load and HIV Incidence

As viral loads go down, so do new HIV diagnoses

Das M et al. PLoS One 2010;5:e11068
HIV Treatment as Prevention

HPTN-052
96% reduction in HIV incidence

No. at Risk
Early: 893 658 298 79 31 24
Delayed: 882 655 297 80 26 22

Poor Engagement in HIV-care is associated with increased:

– HIV-Risk transmission behavior
– Adherence to Therapy
– Hospitalization
– Progression to AIDS
– Opportunistic Illness
– Death
Receipt of and Adherence to Antiretroviral Therapy

- Individuals with poor engagement in HIV care are less likely to be offered and to utilize antiretroviral therapy
- Poor engagement is directly related to poor adherence to therapy
  - In a large VA study engagement over one year was correlated with adherence:
    - 100% engagement: 79% adherence
    - 75% engagement: 74% adherence
    - 50% engagement: 68% adherence
    - 25% engagement: 59% adherence

Giordano T. Clin Infect Dis. 2007; 44:1493–9
Poor engagement in HIV care is associated with poor treatment outcomes

- Poor clinic visit attendance is associated with decreased likelihood of achieving virologic suppression
  - In one study the risk of virologic failure increased by 10% for each missed visit in the prior year
  - Even after adjusting for adherence
- Poor attendance also decreases the likelihood of having CD4 count improvement
  - The risk of immunologic failure increased by 14% for each missed visit in the prior year

*Berg. AIDS Care 2005; 17:902-7.*
Poor engagement in care is a common predisposing factor for opportunistic illnesses

• 1996 – 2006, 134 cases of PCP (pneumocystis pneumonia) in a London hospital
  – 60 (45%) were unaware of HIV status
  – 59 (44%) were HIV diagnosed – not in care
  – 15 (11%) were HIV diagnosed – in care
Kaplan-Meier plot of cumulative survival grouped by the number of quarters with an HIV primary care visit during the first year after the index visit ($P = .02$)

Missed visits in the first year of care increased risk of dying.

Kaplan-Meier survival for patients establishing initial HIV care at the University of Alabama at Birmingham 1917 HIV/AIDS Clinic categorized by missed visits

Missed visits in the first year of care increased risk of dying.


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How can we improve engagement in HIV care?
Improving HIV Diagnosis

- Universal screening of adults and adolescents
- Targeted screening of at risk individuals
- Decreasing the stigma of HIV testing
- Decreasing HIV stigma
How do we improve linkage?

- Strengths-based case management

Figure 3. Linkage outcomes 2005-2011; 2011 data is incomplete.
How do we improve engagement?

- Substance abuse counseling and treatment services
- Mental Health diagnosis and care
- Universal Health Care (?)
- End homelessness
- Decrease competing needs
- Improve the system of health care delivery

• THIS IS WHAT RYAN WHITE DOES
What are the ultimate goals of improving retention in HIV care?

• Improved personal health outcomes
• Improved quality of life
• Decrease complications of HIV and co-morbidities
• Improve public health outcomes
Conclusions

• Poor engagement in HIV care is common
• Poor engagement in HIV care directly impacts individual and public health outcomes
• Research and development of engagement in care interventions is just beginning but is a growing field

• Improving engagement in HIV care will be a major focus of community based HIV care for the foreseeable future
Thank You

Questions?