Find your patient...
and keep them coming back

Bill G. Kapogiannis, MD
National Institute of Child Health and Human Development

Thanks to Michael J. Mugavero, MD, MHSc
University of Alabama at Birmingham
Learning objectives

After attending this presentation, participants will be better able to:

• Describe conceptual frameworks for the continuum of HIV care ("treatment cascade")
• Identify the individual & population health implications of HIV care engagement across the continuum
• Utilize approaches to measuring engagement in care in clinical settings
• Adapt your clinical setting to integrate evidence based approaches proven to improve engagement in care
## Case presentation

- 21 y/o 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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<tbody>
<tr>
<td><strong>HIV VL c/mL</strong></td>
<td>115,000</td>
<td>384</td>
<td>&lt;48</td>
<td>&lt;48</td>
</tr>
<tr>
<td><strong>CD4 count</strong></td>
<td>78</td>
<td>251</td>
<td>376</td>
<td>455</td>
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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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<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>
HIV Treatment Cascade

20% Undiagnosed

50%

# 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 dropped out</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

National HIV/AIDS Strategy: 2020 Goals

Increase HIV serostatus awareness to at least 90%

Increase linkage to care w/in 1 month of Dx to at least 85%

Increase proportion of persons diagnosed with viral suppression to at least 80%

Increase retention among persons diagnosed to at least 90%

Adapted from: Mugavero et al. Clin Infect Dis 2011;52(S2)
CDC: HIV Care Continuum, 2011

Diagnosed: 100%
Engaged in care: 40%
Prescribed ART: 30%
Virally suppressed: 30%

MMWR; 63(47);1113-1117, Available at: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6347a5.htm
Engagement in care: 3 distinct components
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

• Population Level
  ➢ Mediator of health care disparities
  ➢ Role in transmission
    • Change in risk transmission behaviors
    • Impact of ART in reducing transmission

~60% of HIV Transmissions in 2009 in the US

Skarbinski et al. *JAMA Intern Med* 2015;175
UAB 1917 Clinic: Linkage to care

• Problem identified: Scheduled new patient visits often “no show”

• Study of patients calling to establish HIV care at UAB 1917 Clinic, 2004-2006

• 31% of patients (160 of 522) failed to attend a clinic visit within 6 mos. of initial call
  ➢ Average time 28 days from call to scheduled visit

Mugavero et al. Clin Infect Dis 2007;45
Project CONNECT

Client-Oriented

New Patient Navigation to Encourage Connection to Treatment

New Challenges

Identify a Need

Emerge

Name It

Make a plan

Empower Others to Join You

Celebrate
### Project CONNECT: Program evaluation

<table>
<thead>
<tr>
<th>Time Period</th>
<th>“No Show”</th>
<th>Unadjusted OR (95%CI)</th>
<th>Adjusted OR (95%CI)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-CONNECT (n=522)</td>
<td>30.7%</td>
<td>1.0</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>Post-CONNECT (n=361)</td>
<td>17.7%</td>
<td>0.48 (0.35-0.68)</td>
<td>0.54 (0.38-0.76)</td>
<td></td>
</tr>
</tbody>
</table>

*a Multivariable model controls for age, race, sex, insurance, location of residence and time from call to scheduled visit.*
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\textsuperscript{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/\textmu 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\textsuperscript{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>
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</tbody>
</table>

Missed visits and disparities in viral suppression

Zinski A et al. Am J Public Health 2015;105
## Guidelines: Linkage and Retention Interventions

<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>
</table>

Thompson MA et al. *Ann Intern Med* 2012;156
Data to Care (D2C): Surveillance for engagement

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.

CDC/HRSA RIC Intervention

• Phase I. Clinic-wide intervention
  - Posters & brochures: Waiting rooms & exam rooms
  - Brief messages: From all clinic staff
  - Pre-intervention vs. post-intervention evaluation

• Phase II. Pt-centered behavioral intervention
  - Enhanced contact: Personal reminder calls
    - 7- and 2- days before visits, w/in 24-48 hrs of missed visits
  - Skill building modules: problem solving, provider communication and organizational skills
  - Randomized-controlled trial
How to Stay Connected

- Keep all of your scheduled clinic appointments.
- Work as a team with your health care providers.
- Talk openly and honestly with your health care team.
- Ask questions that are important to you.

Why Is It Important to Keep All of Your Clinic Appointments?

Your Health Depends on It!

At your appointments

- We can check your health and make changes to your treatment plan if needed.
- We can give you the best medical care.
- You can take control of your health.

In one large study, people with HIV who attended all of their clinic appointments lived longer.
Source: Clinical Infectious Diseases, 2007.

Remember—it is important to come to all of your clinic appointments whether you feel sick or feel well.

Ways to Remember Your Clinic Appointments

- Write all of your appointments in a calendar.
- Put reminders or alerts in your cell phone.
- Put your reminder card in a place where you will see it often.
- Make sure we have your correct telephone number and address.
- Let us know right away if your telephone number or address changes.

If something comes up and you can’t keep a clinic appointment, please call us at least 2 days in advance. It is important to reschedule if you miss an appointment.
RIC Phase I: Improved visit adherence

Overall: 3.0%
New or Re-engaging: 7.6%
Detectable viral load: 5.5%
CD4<350: 5.1%

RIC Phase II: Improved visit adherence

Gardner LI et al. *Clin Infect Dis* 2014;59
Compendium of Evidence-Based Interventions and Best Practices for HIV Prevention

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

This new chapter of the Compendium categorizes the best practices in promoting Linkage to, Retention in, and Re-engagement in HIV Care among people living with HIV, one of the priorities outlined in the U.S. National HIV/AIDS Strategy. Additional details about the LRC Chapter or the Prevention Research Synthesis (PRS) Project can be obtained by contacting PRS.
Complete the Clinic Readiness Assessment

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

Do you know which engagement in care interventions are right for your clinic?

Click on the appropriate engagement in care intervention for resources and more information

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…remains in care with sustained VS!

<table>
<thead>
<tr>
<th></th>
<th>04/2013</th>
<th>07/2013</th>
<th>12/2013</th>
<th>03/2014</th>
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<tbody>
<tr>
<td>HIV VL c/mL</td>
<td>200,000</td>
<td>79</td>
<td>525</td>
<td>&lt;20</td>
</tr>
<tr>
<td>CD4 count</td>
<td>64</td>
<td>253</td>
<td>226</td>
<td>365</td>
</tr>
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</table>
Take Home Points

• Engagement across the continuum of HIV care is dynamic and impacts individual & population health

• Systematic monitoring at individual-level is foundational
  ➢ Prognostic value of missed visits - personal calls
  ➢ Data to Care: Surveillance to inform engagement

• Evidence-based interventions for engagement in care amenable to clinical settings

• Partnerships with public health & community agencies essential to find patients...and keep them coming back
ACTHIV 2016: A State-of-the-Science Conference for Frontline Health Professionals