

HIV Testing and Beyond: Promoting Linkage, Retention, and Adherence to HIV Care

Satellite Conference and Live Webcast
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Disclosures

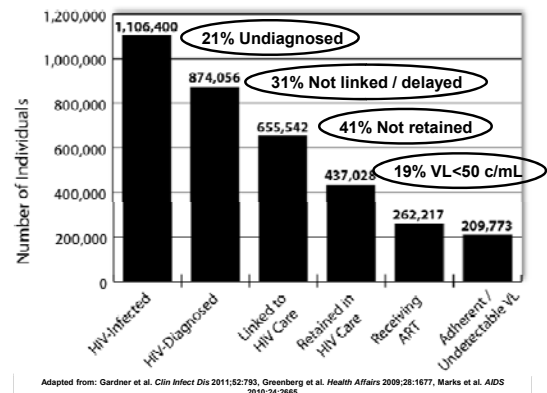
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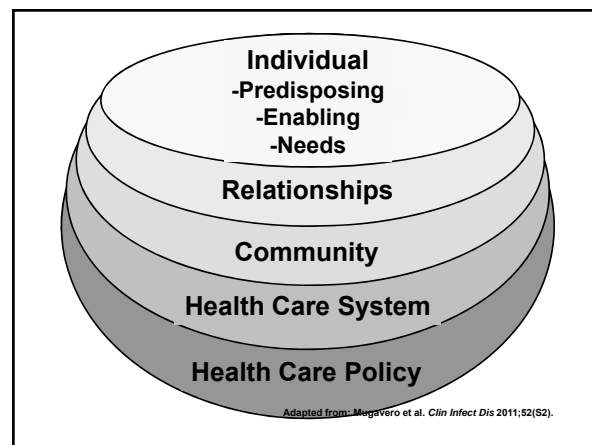
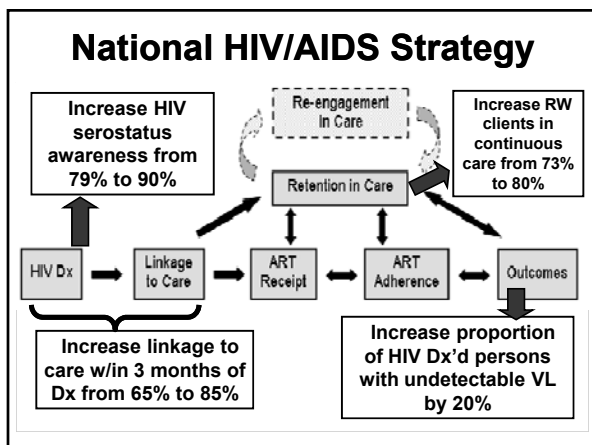
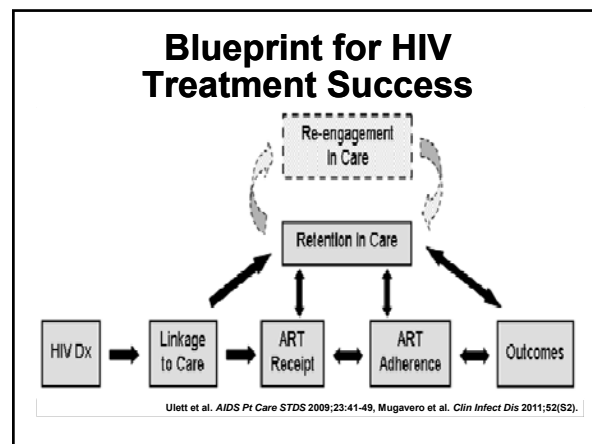
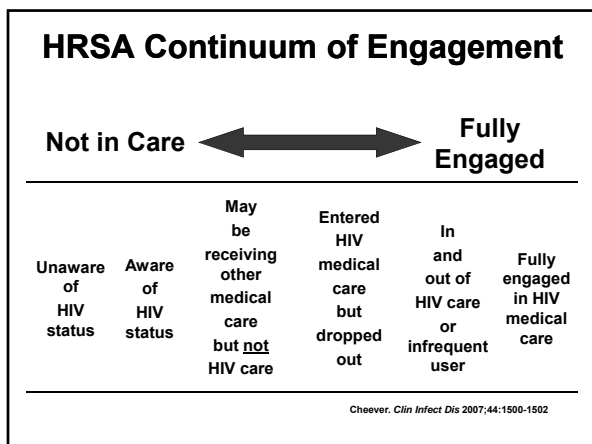
Learning Objectives

- Explain the individual and public health benefits across the continuum of HIV care, including testing and engagement in care
- Distinguish and illustrate the processes of engagement in care:
 - Linkage, retention, and re-engagement in care

Learning Objectives

- Describe National HIV/AIDS Strategy measures and goals for HIV testing, linkage, and retention in care





- ### HIV Testing
- HIV testing
 - 2006 CDC recommends routine opt-out HIV testing
 - NAS
 - ↑ Serostatus awareness 79% to 90% by 2015

- ### HIV Testing
- Rationale?
 - 21% undiagnosed and unaware
 - Number of new HIV Dx stable at 56K(!) / year in U.S.
 - Considerable stigma associated with HIV testing

HIV Testing

- HIV risk behaviors often NOT disclosed
 - Late diagnosis of HIV infection very common
 - Upwards of 50% with CD4<200 at diagnosis

– CDC. MMWR 2006;55(RR14);1-17

HIV Testing Scale Up in DC

- Testing campaign:
 - >50 provider partners
 - Rapid test expansion
 - Partnership with DC jail

HIV Testing Scale Up in DC

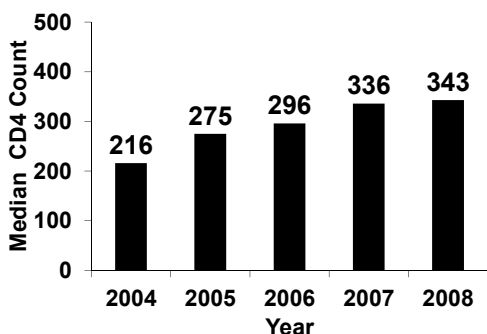
- Publicly funded HIV tests:
 - 2004-05: 20,000 / year
 - 2006-07: 40,000 / year
 - 2008-09: 80,000 / year

HIV Testing Scale Up in DC

- New HIV cases:
 - 2004-05: 1,020 / year
 - 2006-07: 1,213 / year

– Castel et al. CROI 2010; Abstract 34, Greenberg et al. Health Affairs 2009;28:1677-87

HIV Testing Scale Up in DC



Castel et al. CROI 2010; Abstract 34, Greenberg et al. Health Affairs 2009;28

Case Presentation

- 21yr male has positive rapid HIV test at CBO-sponsored outreach event
- Notified of preliminary positive result with post-test counseling, has blood drawn for confirmatory ELISA / WB
- Appointment is scheduled for 4 weeks at local HIV clinic
- Confirmatory ELISA / WB (+), HD notified and DIS officer assigned

Question?

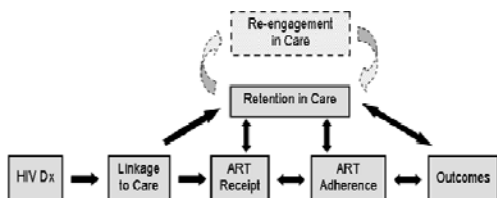
- Which entity bears most responsibility for facilitating linkage to HIV medical care?
 - A. Community based organization
 - B. HIV clinic
 - C. Health department
 - D. None of the above

Case Presentation

- DIS officer conducts patient interview within 2 weeks of confirmatory test
- Two weeks later, HIV clinic appointment date approaches...
 - The patient does not attend
 - Clinic attempts to reschedule appointment... “telephone not in service”

Engagement in Care

- Linkage to care
- Retention in care
- Re-engagement in care



Implications of Engagement in Care

- Individual level
 - ART receipt and adherence
 - CD4 count and viral load outcomes
 - HIV resistance mutations
 - Clinical events and survival

Implications of Engagement in Care

- Population level
 - Mediator of health care disparities
 - Role in transmission
 - Change in risk transmission behaviors
 - Impact of ART in reducing transmission

*Kenny et al. *AIDS* 2002;16:1001-1010; Henders et al. *JAMA* 2007;297:2111; Giordano et al. *Clin Infect Dis* 2007;44:1000-1005; Muganyizi et al. *JAMA* 2009;301:1000-1005; Marks et al. *AIDS* 2006;20:1000-1005; Metch et al. *Clin Infect Dis* 2008;47:1000-1005; Cohen et al. *N Engl J Med* 2011;365:1000-1005

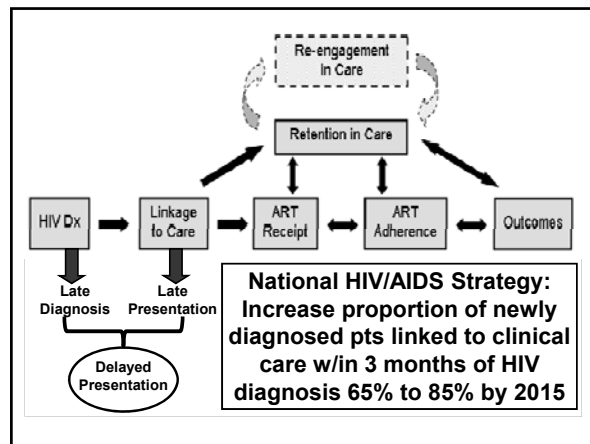
Linkage to Care

- Integration into HIV testing paradigm
- HIV testing influences on linkage to care:
 - Rapport, information and counseling provided
 - Active vs. passive referral for services

Linkage to Care

- First time testers have greater delays
- Delayed linkage seen with testing in community

- Garland et al. *AIDS Education and Prevention* 2011;23:117-27, Hightow-Weidman et al. *AIDS Pt Care and STDs* 2011;51:S31-38, Reed et al. *AIDS Pt Care and STDs* 2009;23:760-73, Torian et al. *Arch Intern Med* 2008;168:1161-67



Overcoming Delayed Presentation

- CDC ARTAS: Multi-site RCT to test a case management (CM) intervention to improve linkage to care
 - Empowerment and self efficacy
 - Asks clients to identify internal strengths and assets
 - Up to 5 CM contacts allowed in 90 days

Overcoming Delayed Presentation

- ARTAS II effectiveness study at health departments and CBOs with similar effect size

- Gardner et al. *AIDS* 2005;19, Crew et al. *J Acquir Immune Defic Syndr* 2008;47

Overcoming Delayed Presentation

- Outcome: 1 HIV provider visit attended within:

	Case Management	Standard of Care	P-value
6 months	78%	60%	<0.01
↓	↓	↓	↓
12 months	64%	49%	<0.01

- Intervention is efficacious, but additional steps needed to promote linkage to care...

Gardner et al. *AIDS* 2005;19

Linkage to Care: UAB 1917 Clinic

- Problem identified
 - Scheduled new patient visits often not attended
 - “No show”
- Study of patients calling to establish HIV care at UAB 1917 Clinic, 2004-2006

Linkage to Care: UAB 1917 Clinic

- 31% of patients (160 of 522) failed to attend a clinic visit within 6 months of initial call

– Mugavero et al. Clin Infect Dis 2007; 45:127-130

“No Show” Phenomenon

Characteristic	“Show” Group (n=362, 69%)	“No Show” Group (n=160, 31%)	OR (95%CI) for “No Show”
Age (years)	39.3 ± 9.6	37.1 ± 9.5	0.84 (0.68-1.04)
White male	125 (80%)	32 (20%)	1.0 (Reference)
Minority male	154 (67%)	76 (33%)	1.75 (1.05-2.91)
White female	31 (61%)	20 (39%)	2.72 (1.30-5.68)
Minority female	52 (62%)	32 (38%)	2.39 (1.27-4.52)
Private insurance	127 (83%)	26 (17%)	1.0 (Reference)
Public insurance	77 (69%)	34 (31%)	1.91 (1.03-3.54)
Uninsured	158 (61%)	100 (39%)	2.62 (1.56-4.39)
Days from call to appointment	25.6 ± 13.8	30.2 ± 13.4	1.32 (1.14-1.53)

Data presented as mean ± SD or n (row %)
Age OR per 10 years, Days from call OR per 10 days

Mugavero et al. Clin Infect Dis 2007;45:127-130

Project CONNECT

- Client
- Oriented
- New patient
- Navigation to
- Encourage
- Connection to
- Treatment

Project CONNECT

- Program launched January 1, 2007
- New patient orientation within 5 days of call to clinic
- Coordinated by Social Work services
 - Replaced intake visit conducted on date of first medical visit

Project CONNECT

- Semi-structured interview, psychosocial questionnaire, and baseline labs
- Expedited referral for SA / MH services

CONNECT: Program Evaluation

Time Period	“No Show”	Unadjusted OR (95%CI)	Adjusted OR (95%CI) ^a
Pre-CONNECT (n=522)	30.7%	1.0	1.0
Post-CONNECT (n=361)	17.7%	0.48 (0.35-0.68)	0.54 (0.38-0.76)

^a Multivariable model controls for age, race, sex, insurance, location of residence, and time from call to scheduled visit

Linkages to Care for Newly Diagnosed Individuals Who Test HIV+ in Nonprimary Care Settings

- Case study of 7 LTC programs in 5 jurisdictions
- Barriers
 - System/community
 - Organizational
 - Clinician/staff
 - Individual/client

Linkages to Care for Newly Diagnosed Individuals Who Test HIV+ in Non-primary Care Settings

“One of the key findings of this study is that LTC programs vary widely based on the needs, resources, partnerships, organizational structures, leadership, target populations, and policies of each setting.”

– Boyd Gilman, PhD; Julia Hidalgo, ScD; Cicely Thomas MS; Melanie Au, MPP; Margaret Hargreaves, PhD
– Gilman. AIDS Pt Care STDS 2012; e-pub

LTC: Testing in Nonprimary Care Settings

Key characteristics

Low cost	Paraprofessional staff
Intensive	Significant time investment
Time-limited	LTC services of short duration
Unique	Distinct from medical case management
Flexible	Tailored to community needs/resources

Gilman. AIDS Pt Care STDS 2012; e-pub

LTC: Testing in Nonprimary Care Settings

Core Components

Dedicated linkage staff	Training in MI counseling, HIV, and local healthcare and HIV resources
Active referral	Client education and skill building, assistance scheduling/attending visits
Person centered	Focus on client “assets”
Cultural concordance	Cultural and linguistic concordance of linkage workers with population served

Gilman. AIDS Pt Care STDS 2012; e-pub

LTC: Testing in Non-primary Care Settings

Operational Factors

Protocol adherence	Developing/adhering to LTC protocol
Selection of LTC staff	Personality, cultural background, experience, and interpersonal skills
Execution of LTC program	Coordination and integration of services across and within organizations
Program sustainability	Coordination of federal, state, local resources from multiple funders

Gilman. AIDS Pt Care STDS 2012; e-pub

Retention in Care

- First year of outpatient HIV medical care is a dynamic, formative, and vulnerable time
- Poor early retention in care associated with:
 - Delayed / failed antiretroviral therapy (ART) receipt

Retention in Care

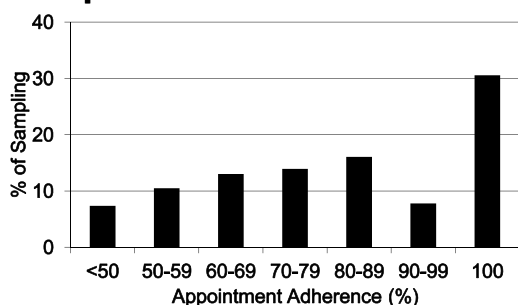
- Delayed time to VL suppression and greater cumulative HIV burden
- Increased sexual risk transmission behaviors
- Increased risk of long-term adverse clinical events

Retention in Care

- Worse ART adherence, CD4 and VL response and increased long-term mortality following ART start

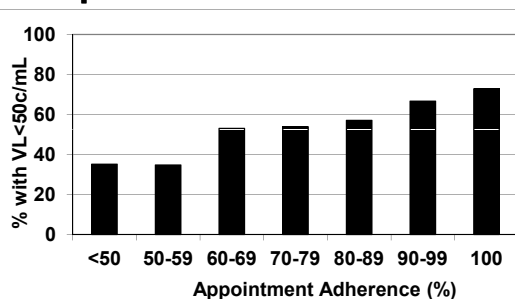
- Ulett et al. *AIDS Pt Care STDS* 2009;23, Giordano et al. *JAIDS* 2003;32, Metsch et al. *Clin Infect Dis* 2006;47, Mugavero et al. *Clin Infect Dis* 2009;48, Giordano et al. *Clin Infect Dis* 2007;44

Expanding the Spectrum of Adherence



Mugavero. *Top HIV Med* 2008;16:156-61

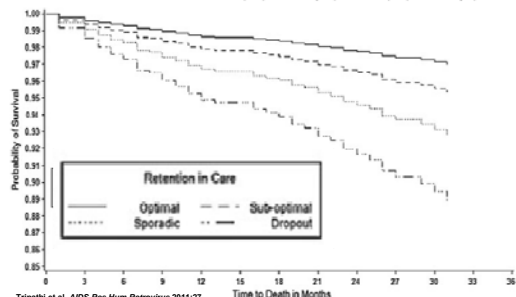
Expanding the Spectrum of Adherence



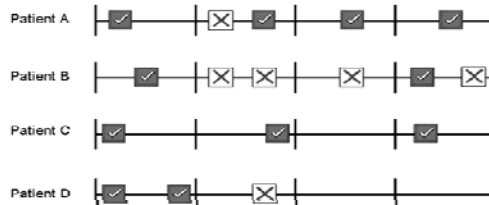
Mugavero. *Top HIV Med* 2008;16:156-61

TABLE 3. CHARACTERISTICS OF SOUTH CAROLINA NEWLY DIAGNOSED HIV INFECTED ADULTS AND ADOLESCENTS BY PROPORTION OF VISITS EVERY 6-MONTH INTERVAL OVER 2 YEARS FOLLOW-UP AFTER LINKAGE TO CARE

	Total	"Optimal" (4 visits in 4 intervals)	"Suboptimal" (3 visits in 4 intervals)	"Sporadic" (1-2 visits in 4 intervals)	"Dropout" (No visits in 4 intervals)	p-value
Total	2197	1092 (49.7)	406 (18.5)	487 (22.2)	212 (9.7)	



Tripathi et al. *AIDS Res Hum Retrovirus* 2011;27



	Missed Visits	Appt. Adherence	Visit Constancy	Gap in Care	HRSA HAB Measure
Patient A	Yes; 1	80%	100%	No	Yes
Patient B	Yes; 4	33%	50%	Yes	Yes
Patient C	No; 0	100%	75%	No	Yes
Patient D	Yes; 1	67%	25%	Yes	No

Mugavero, Davis, Nevin & Giordano. *AIDS Pt Care STDS* 2010;24

Re-engagement in Care

- Most challenging aspect of engagement
- Less well studied than linkage and retention
- Typically focuses on patients with prior HIV care lost to follow-up

Re-engagement in Care

- Other priority populations for re-engagement
 - Recently incarcerated
 - Recently hospitalized

– Ziller, J Health Care Poor Underserved 2000;15, Draine AIDS Care 2011;23, Wohl et al. AIDS Behav 2011;15, Metsch et al. AJPW 2009;99,

Accessing ART After Prison Release

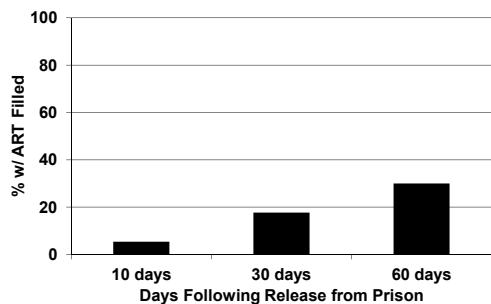
- Study of 1,215 HIV-infected inmates in Texas on ART at time of release (January 2004 – December 2007)
 - 10 day supply of ART
 - List of HIV providers in home community
 - Copy of recent HIV labs

Accessing ART After Prison Release

- ADAP application form and toll-free phone number
- ADAP medication certification signed by physician
- Evaluated proportion of patients with ART filled at 10, 30, and 60 days following release

– Baillargeon et al. JAMA 2009; 301

Accessing ART After Prison Release



HRSA SPNS Outreach Initiative

- 10 demonstration projects
 - Non-randomized design without comparison or control groups in most studies
 - Focus on linkage to care, retention of sporadic users and re-engagement of patients LTFU

HRSA SPNS Outreach Initiative

- **Factors associated with loss to HIV care**
 - **Illicit drug use and alcohol use**
 - **Unstable housing**
 - **Unmet needs including mental health and substance use treatment**

– Tobias et al. *AIDS Pt Care STDS* 2007;21:53, Rajabulin et al. *AIDS Pt Care STDS* 2007;21:59

HIV System Navigation

- **Patient navigation shares features with advocacy, health education, and case management**
- **Distinctive features:**
 - **Concerned with individuals vs. system as a whole**
 - **Less pro-active in addressing knowledge gaps**

HIV System Navigation

- **Use principles of CM but don't have a "home agency"**
- **Usually do not have nursing or SW degrees, although apply strengths-based principles**
- **Navigators often peers or near-peers with shared cultural background**

– Bradford. *AIDS Pt Care STDS* 2007;21:549

Research and Practice Considerations

- **Data sources to measure NAS goals?**
 - **Reliability, role and agreement**
 - **Surveillance vs. patient self-report vs. clinic (cohort) data**
- **Use of publicly reported HIV biomarkers as proxy for outpatient HIV medical care?**

Research and Practice Considerations

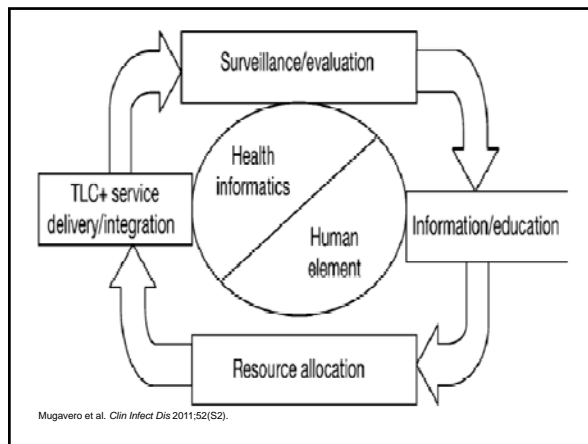
- **Integration of surveillance and clinic (cohort) data to improve measurement?**

Key Points

- **Beyond HIV testing**
 - **Importance of integration of engagement in care in the testing paradigm**
- **Engagement in care**
 - **Linkage, retention and re-engagement**

Key Points

- **Effective programs, core components, and operational strategies provide a framework**
- **National HIV/AIDS Strategy provides goals**
 - **Integration essential for our collective success**



National HIV/AIDS Strategy

