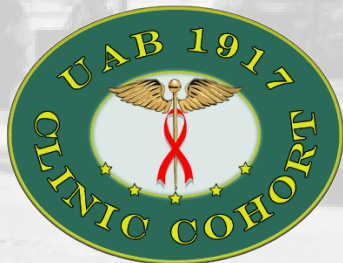
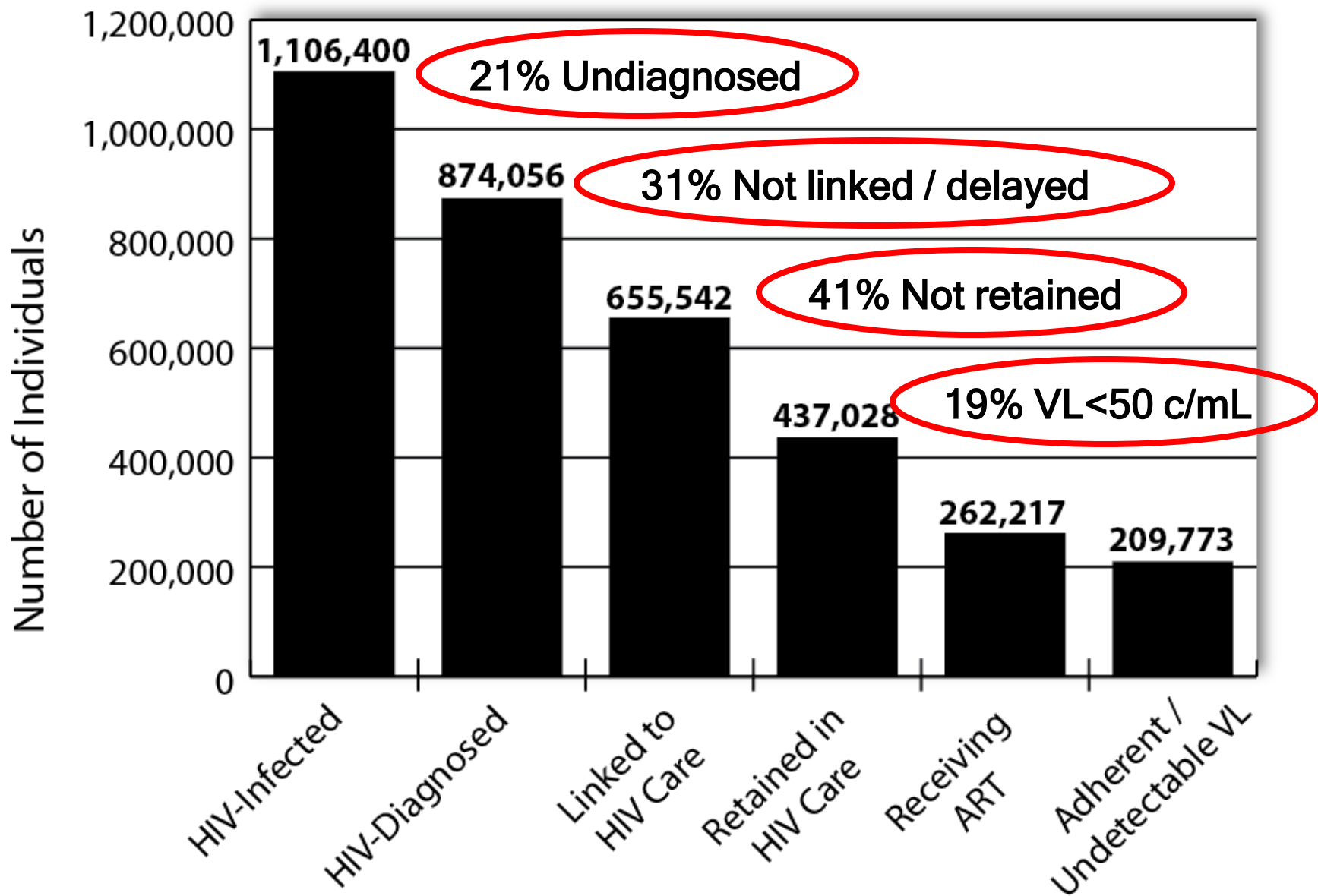


HIV Testing & Beyond: Linkage & Early Retention in HIV medical care

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University of Alabama at Birmingham
June 1, 2012





Adapted from: Gardner et al. *Clin Infect Dis* 2011;52:793, Greenberg et al. *Health Affairs* 2009;28:1677, Marks et al. *AIDS* 2010;24:2665

HIV testing & Linkage to care

■ HIV Testing

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

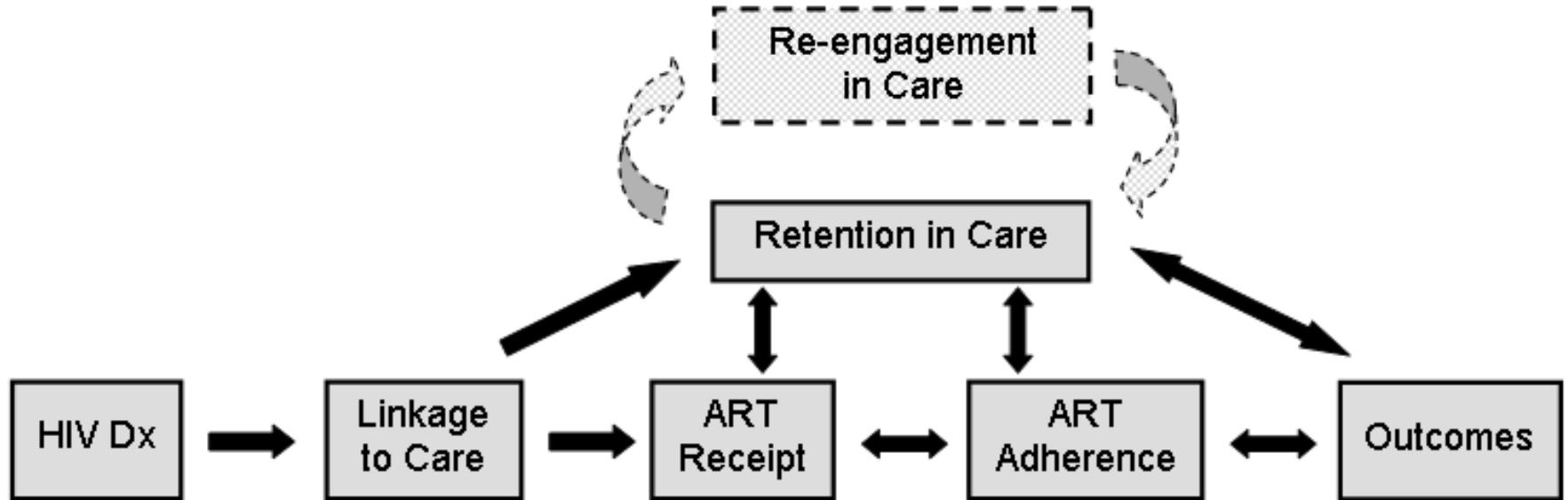
■ Linkage to care

- Integration into HIV testing paradigm
- HIV CTR influence on linkage to care:
 - Rapport, quality of information & counseling provided
 - Active vs. passive referral for services
 - First time testers have greater delays to care entry
 - Delayed linkage seen w/ testing in community settings

CDC ETI: 2007-10

- Nearly 2.8 million HIV tests conducted
 - 90% in clinical settings
 - 51% in ED & STI clinics → 52% of new cases
 - 6% in non-clinical settings → 11% of new cases
- 18,432 new HIV cases identified
 - 91% received test results
 - 75% linked to care

LTC: National HIV/AIDS Strategy



Increase proportion of newly diagnosed pts linked to care w/in 3 mos of HIV diagnosis from 65% to 85% by 2015

Monitoring HIV Care in the United States

Indicators and Data Systems

INSTITUTE OF MEDICINE

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Advising the nation • Improving health

A number of obstacles prevent people with HIV from experiencing optimal health, including late diagnosis, delayed access to care, breaks in care, delayed prescription and intermittent use of life-saving antiretroviral therapy, untreated mental health and substance use disorders, and unmet basic needs.

Table 1: Core Indicators for Clinical HIV Care

Proportion of people newly diagnosed with HIV with a CD4+ cell count >200 cells/mm³ and without a clinical diagnosis of AIDS

Rationale: Improve health outcomes by reducing the number of people living with HIV/AIDS (PLWHA) with late diagnosis.

Proportion of people newly diagnosed with HIV who are linked to clinical care for HIV within three months of diagnosis

Rationale: Timely linkage to care improves individual health outcomes and reduces transmission of the virus to others.

Proportion of people with diagnosed HIV infection who are in continuous care (two or more visits for routine HIV medical care in the preceding 12 months at least three months apart)

Rationale: Continuous HIV care results in better outcomes, including decreased mortality, and reduced transmission of the virus to others.

Proportion of people with diagnosed HIV infection who received two or more CD4 tests in the preceding 12 months

Rationale: Regular CD4 testing permits providers to monitor individuals' immune function, determine when to start antiretroviral therapy (ART), and assess the need for prophylaxis for opportunistic infections.

Proportion of people with diagnosed HIV infection who received two or more viral load tests in the preceding 12 months

Rationale: Regular viral load (plasma HIV RNA) testing is important for monitoring clinical progression of the disease and therapeutic response in individuals on ART.

Proportion of people with diagnosed HIV infection in continuous care for 12 or more months and with a CD4+ cell count \geq 350 cells/mm³

Rationale: Achieving and maintaining a CD4+ cell count \geq 350 cells/mm³ reduces the risk of complicating opportunistic infections and cancers.

Proportion of people with diagnosed HIV infection and a measured CD4+ cell count <500 cells/mm³ who are not on ART

Rationale: Appropriate initiation of ART improves individual health outcomes and reduces transmission of the virus to others.

Proportion of people with diagnosed HIV infection who have been on ART for 12 or more months and have a viral load below the level of detection

Rationale: The goal of ART is durable virologic suppression, which improves health outcomes and reduces transmission of the virus.

All cause mortality rate among people diagnosed with HIV infection

Rationale: Mortality rate is the ultimate outcome measure for people diagnosed with HIV infection. Mortality among PLWHA should be inversely related to the quality of overall care delivered.

Annals of Internal Medicine

Established in 1927 by the American College of Physicians

Guidelines for Improving Entry Into and Retention in Care and Antiretroviral Adherence for Persons With HIV: Evidence-Based Recommendations From an International Association of Physicians in AIDS Care Panel

Melanie A. Thompson, MD; Michael J. Mugavero, MD, MHSc; K. Rivet Amico, PhD; Victoria A. Cargill, MD, MSCE; Larry W. Chang, MD, MPH; Robert Gross, MD, MSCE; Catherine Orrell, MBChB, MSc, MMed; Frederick L. Altice, MD; David R. Bangsberg, MD, MPH; John G. Bartlett, MD; Curt G. Beckwith, MD; Nadia Dowshen, MD; Christopher M. Gordon, PhD; Tim Horn, MS; Princy Kumar, MD; James D. Scott, PharmD, MEd; Michael J. Stirratt, PhD; Robert H. Remien, PhD; Jane M. Simoni, PhD; and Jean B. Nachega, MD, PhD, MPH



Appendix Table 1. Summary of Recommendations With Scores for Quality of the Body of Evidence and Strength of Recommendation*

Entry into and retention in HIV medical care

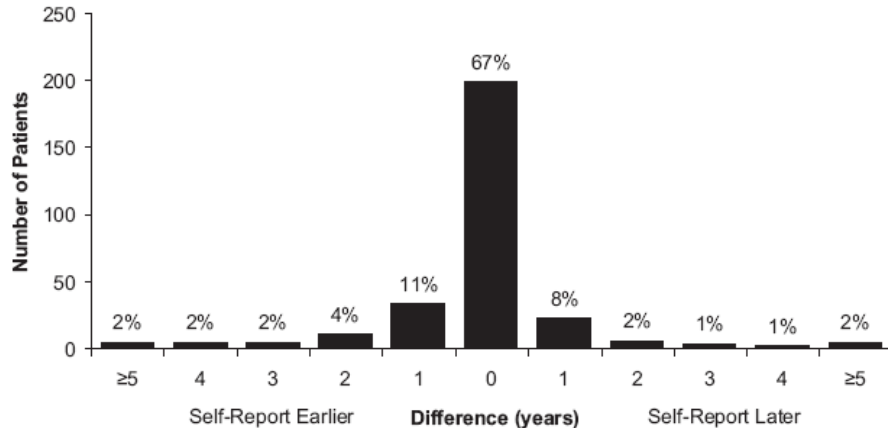
1. Systematic monitoring of successful entry into HIV care is recommended for all individuals diagnosed with HIV (II A).
2. Systematic monitoring of retention in HIV care is recommended for all patients (II A).
3. Brief, strengths-based case management for individuals with a new HIV diagnosis is recommended (II B).
4. Intensive outreach for individuals not engaged in medical care within 6 months of a new HIV diagnosis may be considered (III C).
5. Use of peer or paraprofessional patient navigators may be considered (III C).

<http://www.annals.org/content/early/2012/03/05/0003-4819-156-11-201206050-00419.full>

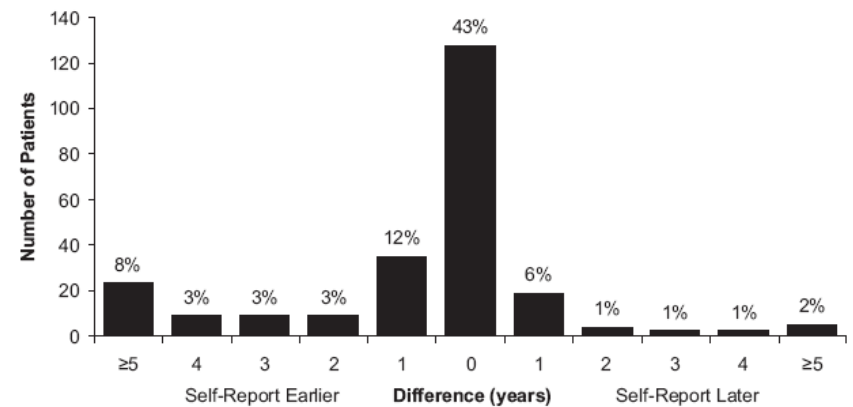
Variability of the Date of HIV Diagnosis: A Comparison of Self-Report, Medical Record, and HIV/AIDS Surveillance Data

SANDRA I. McCoy, PhD, BILL JONES, MPH, PETER A. LEONE, MD, SONIA NAPRAVNIK, PhD, E. BYRD QUINLIVAN, MD, JOSEPH J. ERON, MD, AND WILLIAM C. MILLER, MD, PhD

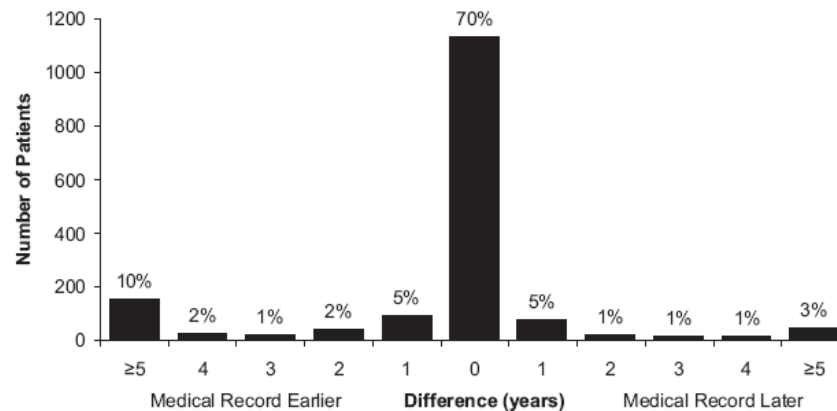
A Patient Report vs. Medical Record



B Patient Report vs. HIV/AIDS Reporting System



C Medical Record vs. HIV/AIDS Reporting System



Using surveillance data to monitor entry into care of newly diagnosed HIV-infected persons: San Francisco, 2006–2007

Nicola M Zetola^{1,3}, Kyle Bernstein^{2,3}, Katherine Ahrens^{2,3}, Julia L Marcus^{2,3}, Susan Philip^{2,3}, Giuliano Nieri^{2,3}, Diane Jones^{4,3}, C Bradley Hare^{4,3}, Ling Hsu^{2,3}, Susan Scheer^{2,3} and Jeffrey D Klausner*^{1,2,3}

- SFDPH: Enhanced surveillance for entry to care
 - Self report, Clinic record, CD4/VL (not ED or hospital)
- New Dx at STD clinic, county hospital, 13 CBC
- Among 160 pts, entry to care in 79% (n=126):
 - 63% (n=101) by self or clinic report (all had CD4/VL)
 - Add'l 25 pts identified by CD4/VL
- 69% entered care w/in 3 months

Research & practice considerations

- Data sources for diagnosis and entry to care?
 - 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?
 - Prior HIV medical care?
 - New to clinic vs. new to care?
 - Integration of surveillance, clinic and other data sources to improve measurement?
-

Promoting linkage to care: ARTAS

- CDC ARTAS: Multi-site RCT to test a case management (CM) intervention to improve linkage to care
 - Empowerment & self efficacy
 - Asks clients to identify internal strengths & assets
 - Up to 5 CM contacts allowed in 90 days
- ARTAS II effectiveness study at health departments & CBOs with similar effect size

CDC ARTAS

- Outcome: 1^o HIV provider visit attended w/in:

| | 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...

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

“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

Project CONNECT

Client-

Oriented

New Patient

Navigation to

Encourage

Connection to

Treatment



Project CONNECT



- Program launched January 1, 2007
- New pt orientation w/in 5 days of initial call to clinic
- Coordinated by SW services: replaced intake visit conducted on date of 1st medical visit
- Semi-structured interview, psychosocial questionnaire & baseline labs
- Prophylactic antibiotics initiated more quickly
- 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 Positive in Nonprimary Care Settings

Boyd Gilman, Ph.D.,¹ Julia Hidalgo, Sc.D.,² Cicely Thomas, M.Sc.,³
Melanie Au, M.P.P.,⁴ and Margaret Hargreaves, Ph.D.¹

- Case study of 7 LTC programs in 5 jurisdictions
- Barriers: System/Community, Organizational, Clinician/Staff, Individual/Client

“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”

LTC: testing in non-primary 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

LTC: testing in non-primary care settings

Core components:

| | |
|--------------------------------|--|
| Dedicated linkage staff | Training in MI counseling, HIV, & 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 |
|-----------------------------|---|

LTC: testing in non-primary care settings

Operational factors:

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

Early retention in care

- First year of outpatient HIV medical care is a dynamic, formative & vulnerable time
- Poor early retention in care associated with:
 - Delayed / failed antiretroviral therapy (ART) receipt
 - Delayed time to VL suppression & greater cumulative HIV burden
 - Increased sexual risk transmission behaviors
 - Increased risk of long-term mortality

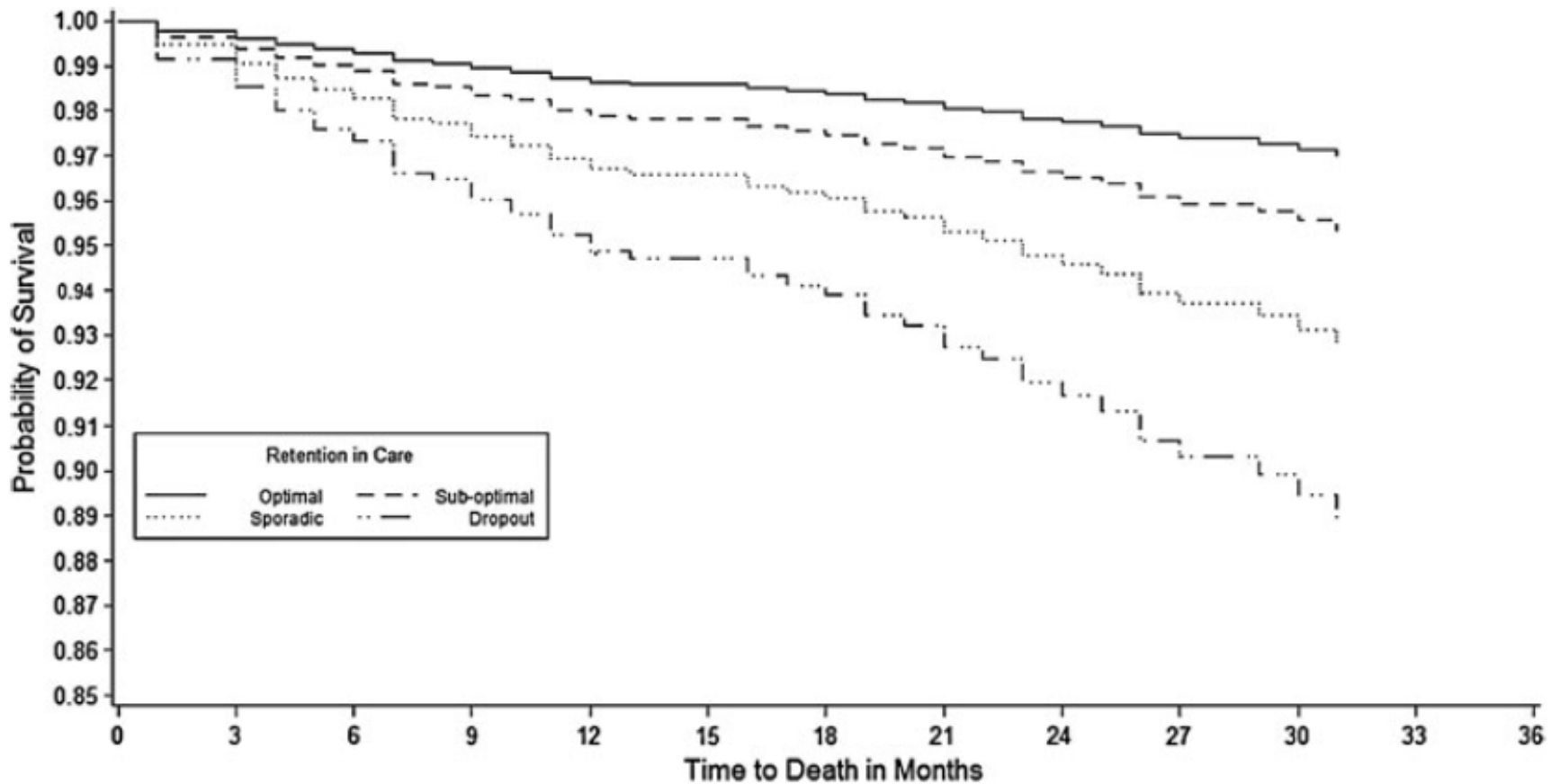
The Impact of Retention in Early HIV Medical Care on Viro-Immunological Parameters and Survival: A Statewide Study

Avnish Tripathi,¹ Eren Youmans,¹ James J. Gibson,² and Wayne A. Duffus^{2,3}

- SC HIV state surveillance database (eHARS)
- Mandatory reporting of CD4 and VL used as proxy for clinical visit
- Visit constancy over first 2 years among patients diagnosed with HIV, 2004-07
 - ≥ 1 “visit” per 6 month interval

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



Key points

- Integration of LTC into HIV testing paradigm
 - HIV CTR experience / program influence successful linkage to care
 - Effective linkage programs, core components & operational strategies provide framework
 - Beyond testing: linkage and early retention in care a critical challenge
 - Interventions needed that span care continuum
-

