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PDF created November 6, 2025, 6:18 pm

Linkage to HIV Care

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Module 1: Screening and Diagnosis
Lesson 5: Linkage to HIV Care

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Background and Goals

Linkage to care is a crucial early step in successful HIV treatment and is typically defined as the completion of a first medical clinic visit after an HIV diagnosis. Linkage to care plays a key early role in the HIV care continuum (Figure 1)—it is a necessary precursor to antiretroviral therapy initiation and viral suppression. Antiretroviral treatment significantly reduces the risk of developing HIV-related complications and dramatically reduces HIV transmission to others.[1,2,3,4] Without timely entry into care, individuals with HIV miss an opportunity to benefit from HIV treatment at the earliest stage feasible.[5,6]

Goals for Linkage to Care

Linkage to care and rapid initiation of antiretroviral therapy after HIV diagnosis is a key pillar of the national initiative, Ending the HIV Epidemic: A Plan for America.[7] In addition, delayed linkage to care is a major barrier to “treatment as prevention” to reduce HIV transmission rates in the United States. Thus, identifying persons with HIV and successfully linking them to care plays a key role in the overall HIV epidemic, both from a treatment and a prevention standpoint (Figure 2). The federal benchmark for successful linkage to care is the completion of a visit with an HIV medical provider within 1 month (30 days) of HIV diagnosis, and the federal year 2025 goal is to have successful linkage to care in at least 95% of persons newly diagnosed with HIV.[8] The following provides a review of the current state of linkage to care in the United States, examines the major barriers to linkage to care, and explores strategies for improving linkage to care.

Process for Estimating and Monitoring Linkage to Care

Metrics Used for Estimating Linkage to Care

In the United States, the established federal benchmark for successful linkage to care is the completion of a visit with an HIV medical provider within 1 month (30 days) of HIV diagnosis.[8] The Centers for Disease Control and Prevention (CDC) surveillance data for linkage to care is based on at least one HIV RNA level (viral load) or CD4 cell count within 1 month of HIV diagnosis as evidence for linkage to care.[9] From a practical standpoint, the laboratory HIV RNA or CD4 cell count test results serve as an easily measurable surrogate marker for a clinic visit for HIV medical care. Using the standard metric for linkage to care, a first visit more than 1 month after HIV diagnosis is considered *failed linkage* or *delayed entry into care*. Linkage to care is considered a one-time event, whereas retention in care reflects ongoing engagement or reengagement in care.

HIV Case and Laboratory Surveillance

In areas where laboratory-based reporting of HIV RNA (viral load) and CD4 cell count results are mandated by law, state and local health departments and the CDC use this information to monitor linkage to care. As of November 2022, a total of 49 states, the District of Columbia, and Puerto Rico have enacted laws (or regulations) that require laboratory reporting of CD4 cell counts and viral load test results.[10] One state—Idaho— and the Virgin Islands do not require reporting.[10] The HIV surveillance programs within state and local health departments also collect sociodemographic data and are able to track differences among groups at risk for HIV acquisition and among different jurisdictions, thus providing an opportunity to develop HIV interventions that are appropriate at the local level.[11] HIV surveillance data has the important advantage of being population-based. Surveillance integrates data across care sites and includes more than 80% of persons with HIV in the United States.[12]

Current State of Linkage to Care in the United States

Estimates of Successful Linkage to Care in the United States

The United States federal benchmark for the year 2025 linkage to care goal is that at least 95% of persons with a new HIV diagnosis are linked to HIV medical care within 30 days of HIV diagnosis.[8] Based on United States reported data from 28,422 persons newly diagnosed with HIV in 2020, the CDC reported that 82.4% of persons newly diagnosed with HIV were linked to HIV medical care within 1 month of HIV diagnosis, which is significantly below the national goal of 95%. The following summarizes the most recent CDC surveillance HIV linkage data (linkage to HIV care within 1 month of HIV diagnosis), including linkage to care data based on selected characteristics; as shown, among people newly diagnosed with HIV, the percentage of people linked to care in 2022 (81.6%) is significantly lower than the national goal of 95%.[9] Rates of linkage to care are similar in men (81.9%) and women (80.1%).[9] Linkage to care rates are lower among younger persons, people who inject drugs, and people who are Black/African American or American Indian/Alaska Native (Figure 3).[9]

Factors Associated with Delayed Linkage to Care

Studies have identified several factors that predict delayed linkage to care, including poverty, housing insecurity, lack of insurance or access to primary care prior to HIV diagnosis, substance use disorders, and mental health conditions.[13,14,15,16,17,18] A 2009 national survey revealed that health care providers more often attributed nonengagement in care to multiple factors, including financial issues, lack of transportation, family care needs, lack of time off from work, and substance use). Persons with HIV more often reported concern about HIV diagnosis confidentiality and medication side effects as important barriers to care.[19] Other barriers, such as inconveniently located medical services, long appointment wait times, and language barriers, also likely contribute to delayed linkage to care. Persons who are required to undergo HIV testing, such as for insurance, employment, or court-ordered purposes, have been found to delay linkage after receiving a diagnosis of HIV, compared with individuals who self-initiate testing or have HIV testing recommended by their medical provider.[20]

Linkage Based on Site of Testing

In a study from New York City involving persons diagnosed with HIV in 2003, investigators reported that persons undergoing routine HIV testing in many nonprimary care settings, such as sexual health clinics, correctional facilities, or community testing sites, are less likely to be linked to care than those who are diagnosed at a site that offers co-located primary medical care.[16] Studies have shown highly variable rates of linkage to care following a diagnosis of HIV when testing is performed in an emergency department setting.[21,22,23] In a systematic review of 31 articles, the overall rate of linkage to care after HIV testing was performed in emergency department settings was 74%, and higher linkage rates correlated with intensive linkage efforts.[23] Although the optimal approach to testing for HIV in a busy emergency department setting remains uncertain, studies have identified strategies to improve linkage to care from the emergency department. For example, a retrospective study of rapid HIV testing in the San Francisco General Hospital emergency department showed that more than 90% of patients were successfully linked to care by a dedicated linkage team from the hospital's associated HIV clinic.[24]

Interventions to Improve Linkage to Care

Although a multitude of barriers to HIV care have been identified, few randomized, controlled trials have evaluated interventions to overcome these barriers. Moreover, published studies that have evaluated linkage to care interventions have not used standardized outcomes, making comparisons between studies problematic.[25]

Expert Panel Recommendations

In 2015, an expert panel from the International Association of Physicians in AIDS Care published evidence-based recommendations for improving the HIV care continuum.[26] The following summarizes key panel recommendations that are specific to improving linkage to care:[26]

- For persons newly diagnosed with HIV, immediately refer to HIV care
- Use case managers and patient navigators to assist in this process
- Proactively engage persons who miss their initial clinic appointments, including provision of intensive outreach for those not engaged in care within 1 month of a new HIV diagnosis,
    - Use of case management to engage persons lost to follow-up
    - Provide transportation support for persons with HIV to attend their clinic visit

Monitoring Linkage to Care

Monitoring linkage to care provides data essential to the development, tracking, and evaluation of cost-effective linkage interventions. The responsibility to ensure successful entry into HIV care primarily falls on the medical provider (or another staff member) at the site where the diagnosis of HIV is made, although local health departments and HIV clinics would ideally also be involved in this process. It is incumbent upon each local community to define roles and accountability for the linkage to care process. Integrating data and surveillance systems is also important in coordinating linkage to care. It is important to recognize that linkage to care does not ensure retention in care, and clinics and health departments should also develop systems to maximize retention in care.

Strengths-Based Case Management

Strengths-based case management is one of the few interventions that have been tested in a controlled study. Strengths-based case management employs the technique of asking individuals to identify their internal strengths and skills in order to attain needed resources such as medical coverage, transportation to appointments, housing, mental health treatment, or addiction treatment. The ARTAS and ARTAS-II studies, taken together, showed increased rates of linkage to care with intensive strengths-based case management compared to standard procedures (78 to 79% versus 60% within 6 months); this led to the recommendation to use strengths-based case management for improving linkage to care. The primary barrier to the widespread implementation of the findings from ARTAS is that the intervention is relatively resource intensive.

- **ARTAS:** The Antiretroviral Treatment Access Study (ARTAS) was a randomized, controlled trial in 11 United States cities that examined the impact of strengths-based case management on linkage to care rates.[27] Investigators randomized individuals with recently diagnosed HIV to receive either standard of care passive referral (patients were given information about HIV and local resources) or intensive case management support with linkage to nearby HIV clinics. Intensive case management consisted of up to 5 contacts over 90 days with a case manager who emphasized strengths-based techniques. The results of the study showed the intensive management group had significantly higher rates of receiving HIV care within 6 months compared with the standard of care group (78% versus 60%).
- **ARTAS-II:** In a follow-up nonrandomized study, ARTAS-II, all persons recently diagnosed with HIV

received case management (up to 5 contacts).[28] Of the individuals newly diagnosed with HIV, 79% received HIV clinical care within 6 months of enrolling in the study.

Intensive Outreach

The important role for early and intensive outreach efforts was demonstrated in the U.S. Special Projects of National Significance (SPNS) Outreach Initiative, a 5-year initiative to enhance service delivery strategies to engage and retain persons with HIV in primary medical care. This program consisted of nonrandomized interventions at 10 urban areas across the United States and implemented various combinations of strategies. Most interventions included components of outreach and support services in different forms, such as appointment reminders, health system navigation, health literacy training, and provision of food and transportation. Inclusion criteria and program staff training varied by site.[29] All sites focused on individuals considered to be underserved or marginalized by the health care system (such as women, youth, and people with a history of substance use or mental health conditions); each newly diagnosed person with HIV received an average of 19 contacts over 12 months, with an average contact time of 15 minutes per contact. Within 6 months of enrollment, 92% of newly diagnosed study participants attended medical appointments, rates of virologic suppression in the study population improved from 14% at baseline to 45% after 12 months of follow-up, and participants reported an overall reduction in structural, financial, and personal barriers to care.[30]

Patient Navigators

Navigators are concerned with the individual patient rather than the health care system as a whole.[31] Although acceptance of the patient navigator model is widespread, there is little empirical evidence related to the effectiveness of this intervention. The California Bridge Project concluded that the characteristics of the persons responsible for recruiting and linking the patient to HIV care strongly influenced the success of linkage to care efforts.[32] Persons with HIV are often uniquely qualified to assist individuals newly diagnosed with HIV as they try and navigate the health care system; trained peers (individuals with established HIV) often have shared characteristics and circumstances as well as direct disease-relevant experience and knowledge of local community strengths, challenges, and resources.[33] One randomized control trial of peer navigation, as compared to standard case management, of individuals with HIV released from jail in the United States demonstrated greater linkage to care within 30 days of release.[34]

HIV Partner Services

The term “HIV partner services” encompasses a variety of services that health departments may offer to persons newly diagnosed with HIV and to their sex and needle-sharing partners.[35,36,37] An important goal of partner services is to detect persons with previously undiagnosed HIV and prevent further HIV transmission by helping persons newly diagnosed with HIV to notify their partners and connect the partners with testing services. Partner services can also assist in linking these individuals newly diagnosed with HIV, as well as any newly diagnosed partners, to HIV medical care. Health departments across the United States vary widely in the extent to which they conduct HIV partner services, but they are increasingly using surveillance data to guide partner services and increasingly include linkage to care as a key goal. Health departments have reported improved rates of linkage to care after implementation of public health partner services and improved linkage to care within 30 days among individuals who receive partner services.[35,38] The CDC promotes the use of HIV partner services to improve linkage to care.

Financial Incentives

The use of financial incentives for linkage to care was studied as a component of HPTN-065 (“TLC-Plus”), a feasibility study evaluating an enhanced testing, linkage to care, and treatment strategy in the United States. The linkage to care component of the study was a randomized intervention involving 37 HIV test sites (18 in the Bronx, New York, and 19 in Washington, D.C.) to determine whether financial incentives (gift cards) improved linkage to care. Results presented in 2015 showed that financial incentives did not increase linkage

to care, but did increase regular clinic attendance and viral suppression.[39] Results from the viral suppression component of the study indicated that most individuals with HIV found the use of financial incentives to be acceptable and helpful.[40,41]

Strategies for Clinics to Improve Linkage to Care

Clinics that provide HIV clinical care can also play a role in ensuring that successful linkage to care occurs, thereby improving the likelihood that patients will engage in continuous HIV care. There are limited evidence-based studies that have analyzed interventions that may improve linkage to care, but several examples from HIV clinics can provide insights for improving linkage to care. In addition, the CDC maintains an online Compendium of Evidence-Based Interventions for HIV Prevention that includes information on promoting linkage to, retention in, and reengagement in care.[42]

Shorten Wait Times for Initial Appointment

Very short wait times for new patient visits may increase the likelihood of appointment completion. In a study at the University of Alabama at Birmingham (UAB) 1917 Clinic, among patients who called to establish HIV care from 2004 to 2006, 31% failed to attend a clinic visit within 6 months of their initial call.[43] To address this problem, the UAB 1917 Clinic launched Project CONNECT (Client-Oriented New Patient Navigation to Encourage Connection to Treatment), which established a clinic standard of scheduling an intake and orientation appointment for all new patients within 5 days of an initial request for a new appointment.[44] The orientation visit includes an intake questionnaire, baseline laboratory testing, case manager visit, initiation of opportunistic infection prophylactic medication if needed, and referrals to services for mental health and substance-use disorders, when indicated.[44] The initial visit no-show rate decreased from 31% at baseline to 19% after the implementation of Project CONNECT.[44]

Follow-up After Missed Initial Appointment

Calling or otherwise conducting outreach to follow up with patients who do not show up for their first scheduled HIV care visit should ideally be part of an HIV clinic protocol. Certain patient characteristics have been associated with higher “no-show” rates, including minority race/ethnicity (especially minority women) and having public health insurance or no health insurance.[44] Specific strategies, such as improving the initial clinic orientation process, implementing reminder phone calls, using peer navigators, and accompanying patients to medical appointments should be implemented at the clinic level to engage populations at risk for higher no-show rates.[45]

Summary Points

- Linkage to care is the first step in engaging in HIV care and is typically defined as the completion of a first medical clinic visit within 1 month after an HIV diagnosis.
- For persons newly diagnosed with HIV, ensuring rapid linkage to care and starting antiretroviral therapy, ideally within 7 days, is a key pillar of the national initiative, Ending the HIV Epidemic: A Plan for America.
- The benchmark for successful linkage to HIV care is the completion of a visit with an HIV medical provider within 1 month after HIV diagnosis. The United States national goal for linkage to care is 95%.
- For the year 2022, the CDC estimates that approximately 82% of persons were linked to care within 1 month of HIV diagnosis.
- Key factors for delayed linkage include substance use, lack of medical insurance, lack of access to primary care prior to HIV diagnosis, and residence in a high-poverty area.
- Linkage to care rates are lower among younger persons, and people who are Black/African American or American Indian/Alaska Native, and people who inject drugs.
- Ensuring linkage to care is a crucial part of any HIV testing program, and active assistance with linkage to care is more effective than a passive approach.
- The Antiretroviral Treatment Access Study (ARTAS) intervention, which includes multiple sessions of strengths-based counseling, is an evidence-based linkage to care model.
- Assisting persons with linkage to HIV care is a primary goal of public health HIV partner services.
- HIV clinical programs can increase rates of linkage to care by shortening their wait times for new clinic visits, conducting outreach to persons who no-show to their first scheduled visit, and conducting case management intake for new clients prior to the HIV medical provider visit.

Citations

1. Kitahata MM, Gange SJ, Abraham AG, et al. Effect of early versus deferred antiretroviral therapy for HIV on survival. N Engl J Med. 2009;360:1815-26.
[PubMed Abstract] -

2. INSIGHT START Study Group, Lundgren JD, Babiker AG, Gordin F, et al. Initiation of Antiretroviral Therapy in Early Asymptomatic HIV Infection. N Engl J Med. 2015;373:795-807.
[PubMed Abstract] -

3. Cohen MS, Chen YQ, McCauley M, et al. Prevention of HIV-1 infection with early antiretroviral therapy. N Engl J Med. 2011;365:493-505.
[PubMed Abstract] -

4. McNairy ML, El-Sadr WM. Antiretroviral therapy for the prevention of HIV transmission: what will it take? Clin Infect Dis. 2014;58:1003-11.
[PubMed Abstract] -

5. Coffey S, Bacchetti P, Sachdev D, et al. RAPID antiretroviral therapy: high virologic suppression rates with immediate antiretroviral therapy initiation in a vulnerable urban clinic population. AIDS. 2019;33:825-832.
[PubMed Abstract] -

6. Robertson M, Laraque F, Mavronicolas H, Braunstein S, Torian L. Linkage and retention in care and the time to HIV viral suppression and viral rebound - New York City. AIDS Care. 2014;27:260-7.
[PubMed Abstract] -

7. Fauci AS, Redfield RR, Sigounas G, Weahkee MD, Giroir BP. Ending the HIV Epidemic: A Plan for the United States. JAMA. 2019;321:844-845.
[PubMed Abstract] -

8. The White House. 2021. National HIV/AIDS Strategy for the United States 2022–2025. Washington, DC
[The White House: Washington] -

9. Centers for Disease Control and Prevention. Monitoring selected national HIV prevention and care objectives by using HIV surveillance data—United States and 6 territories and freely associated states, 2022. *HIV Surveillance Supplemental Report* 2024; 29(No. 2). Published May 21, 2024
[CDC] -

10. Centers for Disease Control and Prevention. State Laboratory Reporting Laws: Viral Load and CD4 Requirements.
[CDC] -

11. Gray KM, Cohen SM, Hu X, Li J, Mermin J, Hall HI. Jurisdiction level differences in HIV diagnosis, retention in care, and viral suppression in the United States. J Acquir Immune Defic Syndr. 2014;65:129-32.
[PubMed Abstract] -

12. Hall HI, Song R, Gerstle JE 3rd, Lee LM. Assessing the completeness of reporting of human immunodeficiency virus diagnoses in 2002-2003: capture-recapture methods. Am J Epidemiol. 2006;164:391-7.
[PubMed Abstract] -

13. Dombrowski JC, Simoni JM, Katz DA, Golden MR. Barriers to HIV Care and Treatment Among Participants in a Public Health HIV Care Relinkage Program. AIDS Patient Care STDS. 2015;29:279-87.
[PubMed Abstract] -

14. Ulett KB, Willig JH, Lin HY, et al. The therapeutic implications of timely linkage and early retention in HIV care. AIDS Patient Care STDS. 2009;23:41-9.
[PubMed Abstract] -

15. Tripathi A, Gardner LI, Ogbuanu I, et al. Predictors of time to enter medical care after a new HIV diagnosis: a statewide population-based study. AIDS Care. 2011;23:1366-73.
[PubMed Abstract] -

16. Torian LV, Wiewel EW, Liu KL, Sackoff JE, Frieden TR. Risk factors for delayed initiation of medical care after diagnosis of human immunodeficiency virus. Arch Intern Med. 2008;168:1181-7.
[PubMed Abstract] -

17. Dombrowski JC, Kent JB, Buskin SE, Stekler JD, Golden MR. Population-based metrics for the timing of HIV diagnosis, engagement in HIV care, and virologic suppression. AIDS. 2012;26:77-86.
[PubMed Abstract] -

18. Centers for Disease Control and Prevention. Monitoring Selected National HIV Prevention and Care Objectives by Using HIV Surveillance Data United States and 6 Dependent Areas, 2018 HIV Surveillance Supplemental Report. 2020;25(No. 2):1-104. Published May 2020.
[CDC] -

19. Mayer KH. Introduction: Linkage, engagement, and retention in HIV care: essential for optimal individual- and community-level outcomes in the era of highly active antiretroviral therapy. Clin Infect Dis. 2011;52 Suppl 2:S205-7.
[PubMed Abstract] -

20. Robertson M, Wei SC, Beer L, et al. Delayed entry into HIV medical care in a nationally representative sample of HIV-infected adults receiving medical care in the USA. AIDS Care. 2016;28:325-33.
[PubMed Abstract] -

21. Rothman RE, Kelen GD, Harvey L, et al. Factors associated with no or delayed linkage to care in newly diagnosed human immunodeficiency virus (HIV)-1-infected patients identified by emergency department-based rapid HIV screening programs in two urban EDs. Acad Emerg Med. 2012;19:497-503.
[PubMed Abstract] -

22. Marks G, Gardner LI, Craw J, Crepaz N. Entry and retention in medical care among HIV-diagnosed persons: a meta-analysis. AIDS. 2010;24:2665-78.
[PubMed Abstract] -

23. Menon AA, Nganga-Good C, Martis M, et al. Linkage-to-care methods and rates in U.S. emergency department-based HIV testing programs: a systematic literature review brief report. Acad Emerg Med. 2016;23:835-42.
[PubMed Abstract] -

24. Christopoulos KA, Kaplan B, Dowdy D, et al. Testing and linkage to care outcomes for a clinician-initiated rapid HIV testing program in an urban emergency department. AIDS Patient Care STDS. 2011;25:439-44.
[PubMed Abstract] -

25. Risher KA, Kapoor S, Daramola AM, et al. Challenges in the Evaluation of Interventions to Improve Engagement Along the HIV Care Continuum in the United States: A Systematic Review. AIDS Behav. 2017;21:2101-2123.
[PubMed Abstract] -

26. International Advisory Panel on HIV Care Continuum Optimization. IAPAC Guidelines for Optimizing the HIV Care Continuum for Adults and Adolescents. J Int Assoc Provid AIDS Care. 2015;14 Suppl 1:S3-S34.
[PubMed Abstract] -

27. Gardner LI, Metsch LR, Anderson-Mahoney P, et al. Efficacy of a brief case management intervention to link recently diagnosed HIV-infected persons to care. AIDS. 2005;19:423-31.
[PubMed Abstract] -

28. Craw JA, Gardner LI, Marks G, et al. Brief strengths-based case management promotes entry into HIV medical care: results of the antiretroviral treatment access study-II. J Acquir Immune Defic Syndr. 2008;47:597-606.
[PubMed Abstract] -

29. Rajabiun S, Cabral H, Tobias C, Relf M. Program design and evaluation strategies for the Special Projects of National Significance Outreach Initiative. AIDS Patient Care STDS. 2007;21 Suppl 1:S9-19.
[PubMed Abstract] -

30. Naar-King S, Bradford J, Coleman S, Green-Jones M, Cabral H, Tobias C. Retention in care of persons newly diagnosed with HIV: outcomes of the Outreach Initiative. AIDS Patient Care STDS. 2007;21 Suppl 1:S40-8.
[PubMed Abstract] -

31. Bradford JB, Coleman S, Cunningham W. HIV System Navigation: an emerging model to improve HIV care access. AIDS Patient Care STDS. 2007;21 Suppl 1:S49-58.
[PubMed Abstract] -

32. Molitor F, Waltermeyer J, Mendoza M, et al. Locating and linking to medical care HIV-positive persons without a history of care: findings from the California Bridge Project. AIDS Care. 2006;18:456-9.
[PubMed Abstract] -

33. Simoni JM, Nelson KM, Franks JC, Yard SS, Lehavot K. Are peer interventions for HIV efficacious? A systematic review. AIDS Behav. 2011;15:1589-95.
[PubMed Abstract] -

34. Myers JJ, Kang Dufour MS, Koester KA, et al. The Effect of Patient Navigation on the Likelihood of Engagement in Clinical Care for HIV-Infected Individuals Leaving Jail. Am J Public Health. 2018;108:385-92.
[PubMed Abstract] -

35. Bocour A, Renaud TC, Udeagu CC, Shepard CW. HIV partner services are associated with timely linkage to HIV medical care. AIDS. 2013;27:2961-3.
[PubMed Abstract] -

36. CDC and Prevention. Recommendations for partner services programs for HIV infection, syphilis, gonorrhea, and chlamydial infection. MMWR Recomm Rep. 2008;57:1-83.
[PubMed Abstract] -

37. Centers for Disease Control and Prevention. Effective Interventions—HIV Prevention that Works: Partner Services.

[CDC and Prevention] -

38. Hood JE, Katz DA, Bennett AB, et al. Integrating HIV Surveillance and Field Services: Data Quality and Care Continuum in King County, Washington, 2010-2015. Am J Public Health. 2017;107:1938-43.
[PubMed Abstract] -

39. El-Sadr WM, Donnell D, Beauchamp G, et al. Financial Incentives for Linkage to Care and Viral Suppression Among HIV-Positive Patients: A Randomized Clinical Trial (HPTN 065). JAMA Intern Med. 2017;177:1083-1092.
[PubMed Abstract] -

40. Greene E, Pack A, Stanton J, et al. "It Makes You Feel Like Someone Cares" acceptability of a financial incentive intervention for HIV viral suppression in the HPTN 065 (TLC-Plus) study. PLoS One. 2017;12:e0170686.
[PubMed Abstract] -

41. Shelus V, Taylor J, Greene E, et al. It's all in the timing: Acceptability of a financial incentive intervention for linkage to HIV care in the HPTN 065 (TLC-Plus) study. PLoS One. 2018;13:e0191638.
[PubMed Abstract] -

42. Centers for Disease Control and Prevention. Compendium of Evidence-Based Interventions and Best Practices for HIV Prevention
[CDC] -

43. Mugavero MJ, Lin HY, Allison JJ, et al. Failure to establish HIV care: characterizing the 'no show' phenomenon. Clin Infect Dis. 2007;45:127-30.
[PubMed Abstract] -

44. Mugavero MJ. Improving engagement in HIV care: what can we do? Top HIV Med. 2008;16:156-61.
[PubMed Abstract] -

45. Liau A, Crepaz N, Lyles CM, et al. Interventions to promote linkage to and utilization of HIV medical care among HIV-diagnosed persons: a qualitative systematic review, 1996-2011. AIDS Behav. 2013;17:1941-62.
[PubMed Abstract] -

References

- Alexander TS. Human Immunodeficiency Virus Diagnostic Testing: 30 Years of Evolution. Clin Vaccine Immunol. 2016;23:249-53.
[PubMed Abstract] -

- Beltrami J, Dubose O, Carson R, Cleveland JC. Using HIV Surveillance Data to Link People to HIV Medical Care, 5 US States, 2012-2015. Public Health Rep. 2018;133:385-91.
[PubMed Abstract] -

- Centers for Disease Control and Prevention. Behavioral and Clinical Characteristics of Persons with Diagnosed HIV Infection—Medical Monitoring Project, United States, 2018 Cycle (June 2018–May 2019). HIV Surveillance Special Report 25:1-38.Published May 2020.
[CDC] -

- Centers for Disease Control and Prevention. Monitoring Selected National HIV Prevention and Care Objectives by Using HIV Surveillance Data United States and 6 Dependent Areas, 2019 HIV

Surveillance Supplemental Report. 2021;26(No. 2):1-158. Published May 2021.
[CDC] -

- Centers for Disease Control and Prevention. Monitoring Selected National HIV Prevention and Care Objectives by Using HIV Surveillance Data United States and 6 Dependent Areas, 2020 HIV Surveillance Supplemental Report. 2022;27(No. 3):1-138. Published August 2022.
[CDC] -

- Centers for Disease Control and Prevention. Monitoring selected national HIV prevention and care objectives by using HIV surveillance data--United States and 6 U.S. dependent areas, 2014. HIV Surveillance Supplemental Report. 2016;21(No. 4):1-87. Published July 2016.
[CDC] -

- Centers for Disease Control and Prevention. Monitoring Selected National HIV Prevention and Care Objectives by Using HIV Surveillance Data—United States and 6 Dependent Areas, 2021. HIV Surveillance Supplemental Report. 2023;28(No. 4). Published May 2023.
[CDC] -

- Centers for Disease Control and Prevention. Monitoring selected national HIV prevention and care objectives by using HIV surveillance data—United States and 6 U.S. dependent areas, 2016. HIV Surveillance Supplemental Report. 2018;23(No. 4):1-51. Published June 2018.
[CDC] -

- Centers for Disease Control and Prevention. Monitoring selected national HIV prevention and care objectives by using HIV surveillance data—United States and 6 U.S. dependent areas, 2017. HIV Surveillance Supplemental Report. 2019;24(No. 3):1-74. Published June 2019.
[CDC] -

- Centers for Disease Control and Prevention. National HIV Prevention Progress Report, 2015
[CDC] -

- Dombrowski JC, Buskin SE, Bennett A, Thiede H, Golden MR. Use of multiple data sources and individual case investigation to refine surveillance-based estimates of the HIV care continuum. J Acquir Immune Defic Syndr. 2014;67:323-30.
[PubMed Abstract] -

- El-Sadr W, Branson B, Hall HI, et al. Effect of Financial Incentives on Linkage to Care and Viral Suppression: HPTN 065. Presented at the 22nd Conference on Retroviruses and Opportunistic Infections, Seattle, February 23-26, 2015. Abstract 29.
[CROI] -

- FitzHarris LF, Hollis ND, Nesheim SR, Greenspan JL, Dunbar EK. Pregnancy and linkage to care among women diagnosed with HIV infection in 61 CDC-funded health departments in the United States, 2013. AIDS Care. 2017:1-8.
[PubMed Abstract] -

- Flash CA, Pasalar S, Hemmige V, et al. Benefits of a routine opt-out HIV testing and linkage to care program for previously diagnosed patients in publicly funded emergency departments in Houston, TX. J Acquir Immune Defic Syndr. 2015;69 Suppl 1:S8-15.
[PubMed Abstract] -

- Gardner EM, McLees MP, Steiner JF, Del Rio C, Burman WJ. The spectrum of engagement in HIV care and its relevance to test-and-treat strategies for prevention of HIV infection. Clin Infect Dis. 2011;52:793-800.

[PubMed Abstract] -

- Giordano TP, Hallmark CJ, Davila JA, et al. Assessing HIV testing and linkage to care activities and providing academic support to public health authorities in Houston, TX. J Acquir Immune Defic Syndr. 2013;64 Suppl 1:S7-13.
  [PubMed Abstract] -

- Giordano TP, Visnegarwala F, White AC Jr, et al. Patients referred to an urban HIV clinic frequently fail to establish care: factors predicting failure. AIDS Care. 2005;17:773-83.
  [PubMed Abstract] -

- Hall HI, Frazier EL, Rhodes P, et al. Differences in human immunodeficiency virus care and treatment among subpopulations in the United States. JAMA Intern Med. 2013;173:1337-44.
  [Pub Med Abstract] -

- Hall HI, Tang T, Westfall AO, Mugavero MJ. HIV care visits and time to viral suppression, 19 U.S. jurisdictions, and implications for treatment, prevention and the national HIV/AIDS strategy. PLoS One. 2013;8:e84318.
  [PubMed Abstract] -

- Hightow-Weidman LB, Smith JC, Valera E, Matthews DD, Lyons P. Keeping them in "STYLE": finding, linking, and retaining young HIV-positive black and Latino men who have sex with men in care. AIDS Patient Care STDS. 2011;25:37-45.
  [PubMed Abstract] -

- Institute of Medicine. Monitoring HIV Care in the United States, Report Brief 2012. Published October 2012.
  [Institute of Medicine] -

- Johns Hopkins Hospital Emergency Department HIV Screening and Linkage-to-Care Team, Negoita S, Signer D, et al. Linkage to Care, Antiretroviral Treatment Initiation, and Viral Suppression of Acute HIV-Infected Individuals Identified From an Emergency Department-Based HIV Screening and Linkage-to-Care Program. Ann Emerg Med. 2018;72:621-623.
  [PubMed Abstract] -

- Karch DL, Dong X, Shi J, Hall HI. Trends in Care and Treatment for Persons Aged ≥13 Years with HIV Infection 17 U.S. Jurisdictions, 2012-2015. Open AIDS J. 2018;12:90-105.
  [PubMed Abstract] -

- Keller S, Jones J, Erbelding E. Choice of Rapid HIV testing and entrance into care in Baltimore City sexually transmitted infections clinics. AIDS Patient Care STDS. 2011;25:237-43.
  [PubMed Abstract] -

- McGoy SL, Pettit AC, Morrison M, et al. Use of Social Network Strategy Among Young Black Men Who Have Sex With Men for HIV Testing, Linkage to Care, and Reengagement in Care, Tennessee, 2013-2016. Public Health Rep. 2018;133:43S-51S.
  [PubMed Abstract] -

- Metsch LR, Feaster DJ, Gooden L, et al. Effect of Patient Navigation With or Without Financial Incentives on Viral Suppression Among Hospitalized Patients With HIV Infection and Substance Use: A Randomized Clinical Trial. JAMA. 2016;316:156-70.
  [PubMed Abstract] -

- Mugavero MJ, Amico KR, Horn T, Thompson MA. The state of engagement in HIV care in the United

States: from cascade to continuum to control. Clin Infect Dis. 2013;57:1164-71.
[PubMed Abstract] -

- Mugavero MJ, Lin HY, Willig JH, et al. Missed visits and mortality among patients establishing initial outpatient HIV treatment. Clin Infect Dis. 2009;48:248-56.
[PubMed Abstract] -

- Mugavero MJ, Westfall AO, Zinski A, et al. Measuring retention in HIV care: the elusive gold standard. J Acquir Immune Defic Syndr. 2012;61:574-80.
[PubMed Abstract] -

- Naar-King S, Bradford J, Coleman S, Green-Jones M, Cabral H, Tobias C. Retention in care of persons newly diagnosed with HIV: outcomes of the Outreach Initiative. AIDS Patient Care STDS. 2007;21 Suppl 1:S40-8.
[PubMed Abstract] -

- Rumptz MH, Tobias C, Rajabiun S, et al. Factors associated with engaging socially marginalized HIV-positive persons in primary care. AIDS Patient Care STDS. 2007;21 Suppl 1:S30-9.
[PubMed Abstract] -

- Samji H, Cescon A, Hogg RS, et al. Closing the gap: increases in life expectancy among treated HIV-positive individuals in the United States and Canada. PLoS One. 2013;8:e81355.
[PubMed Abstract] -

- Schrantz SJ, Babcock CA, Theodosis C, et al. A targeted, conventional assay, emergency department HIV testing program integrated with existing clinical procedures. Ann Emerg Med. 2011;58:S85-8.e1.
[PubMed Abstract] -

- Thompson MA, Mugavero MJ, Amico R, et al. 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. Ann Intern Med. 2012;156:817-33.
[PubMed Abstract] -

- Tucker JD, Tso LS, Hall B, et al. Enhancing Public Health HIV Interventions: A Qualitative Meta-Synthesis and Systematic Review of Studies to Improve Linkage to Care, Adherence, and Retention. EBioMedicine. 2017;17:163-171.
[PubMed Abstract] -

- White House Office of National AIDS Policy. National HIV/AIDS Strategy for the United States: Updated to 2020. Washington, DC. July 2015.
[The White House: Washington] -

- Wohl AR, Ludwig-Barron N, Dierst-Davies R, et al. Project Engage: Snowball Sampling and Direct Recruitment to Identify and Link Hard-to-Reach HIV-Infected Persons Who Are Out of Care. J Acquir Immune Defic Syndr. 2017;75:190-197.
[PubMed Abstract] -

- Wohl DA, Scheyett A, Golin CE, et al. Intensive case management before and after prison release is no more effective than comprehensive pre-release discharge planning in linking HIV-infected prisoners to care: a randomized trial. AIDS Behav. 2011;15:356-64.
[PubMed Abstract] -

- Xia Q, Zhong Y, Wiewel EW, Braunstein SL, Torian LV. Linkage to Care After HIV Diagnosis in New York City: Better Than We Thought. J Acquir Immune Defic Syndr. 2017;76:e18-e21.

[PubMed Abstract] -

Figures

Figure 1 HIV Care Continuum

Source: Adapted from HRSA. HIV Care Continuum

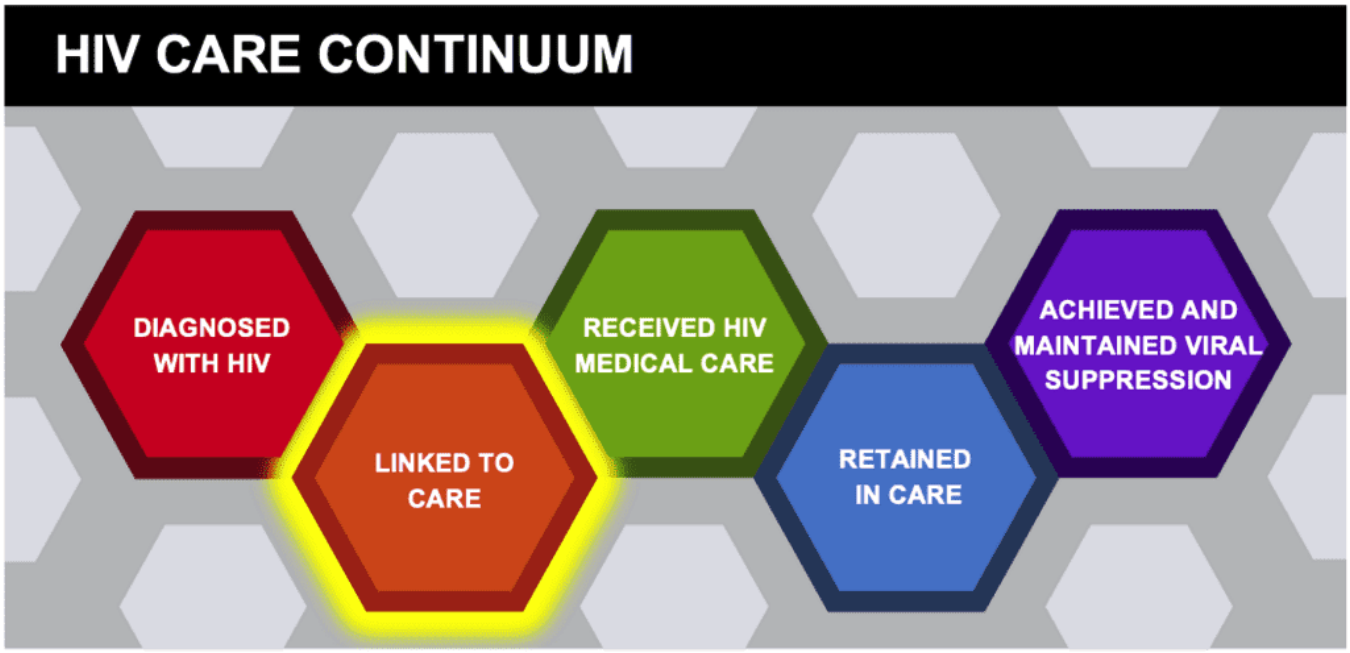


Figure 2 Linkage to HIV Care: Main Goals

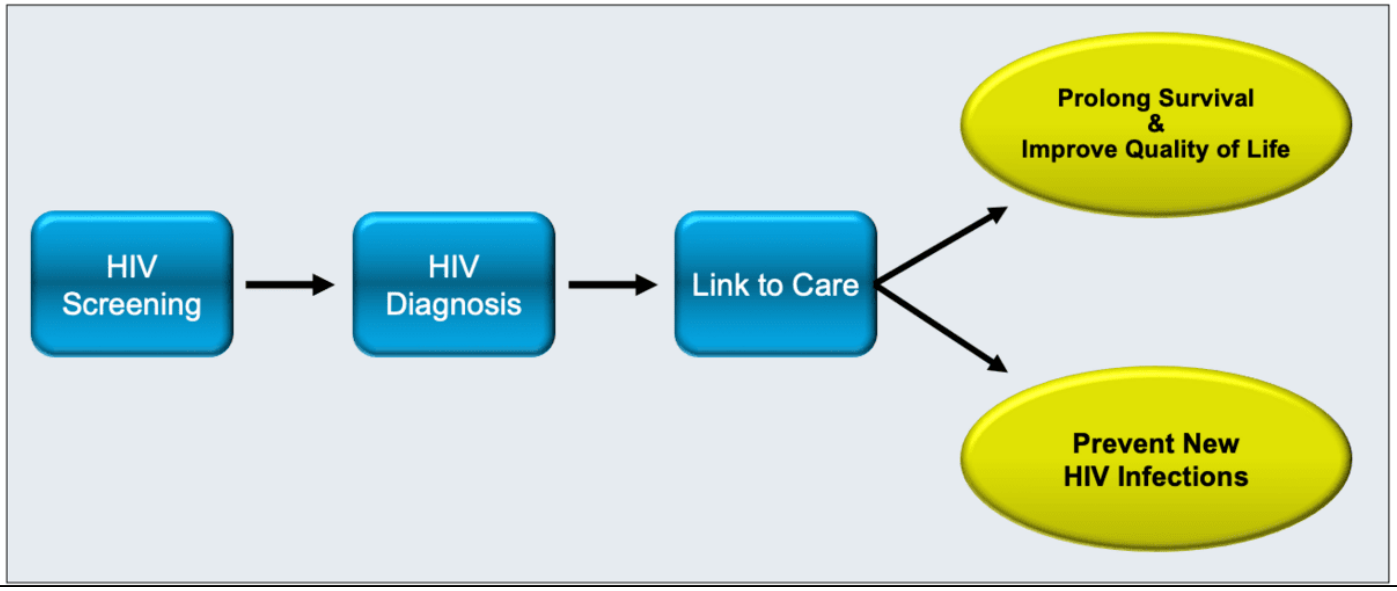
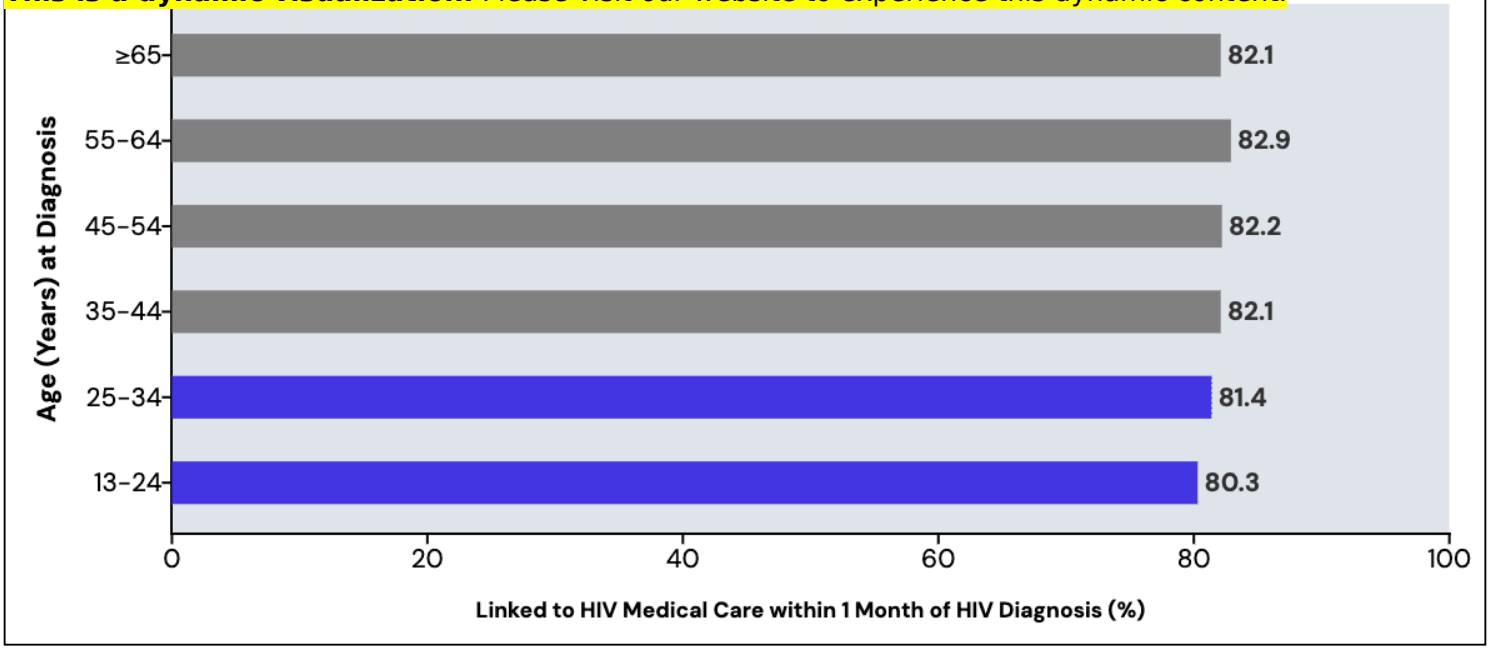


Figure 3 Linkage to HIV Medical care

Source: Centers for Disease Control and Prevention. Monitoring selected national HIV prevention and care objectives by using HIV surveillance data—United States and 6 territories and freely associated states, 2022. *HIV Surveillance Supplemental Report* 2024; 29(No. 2). Published May 21, 2024

This is a dynamic visualization. Please visit our website to experience this dynamic content.