



Deborah Porterfield, MD, MPH^{1,2}* Caroline Husick, MPH¹ Christine A. Bevc, PhD, MA¹ Lori Bilello, PhD, MBA, MHS³ Sara Jacobs, PhD¹ M. Maximillion Wilson, PhD⁴

Background

Lack of integration among public health, social services, and health care organizations has been identified as a primary factor contributing to delayed linkage into care after being screened positive for HIV and poor retention in care for significant numbers of persons living with HIV/AIDS (PLWHA) (Mugavero et al., 2011; Penner & Leone, 2007). Despite policy recommendations to "(e)stablish a seamless system to immediately link people to continuous and coordinated quality care when they learn they are infected with HIV" (ONAP, 2010, p. 25), little research has been done to determine what a system of care for PLWHA is and how to improve its function. Focusing on one specific step in care for PLWHA that depends on a well-integrated system, providing formal linkage services (defined as "the process of assisting HIVdiagnosed persons to enter medical care" where "levels of assistance vary according to need" (CDC, 2011) has been shown to increase the entry of patients screened with HIV into clinical care.

Study Objective

The objective of this overall study is to apply network analysis to measure HIV service integration within four regional systems of HIV care in Florida, and examine potential access to and distribution of services associated with linkage to care and continuous care. The objective of this specific analysis is to understand the connections between organizations testing for HIV and those providing clinical care in order to understand the processes of linkage to care in four regional service areas in Florida.

Methods

Population Studied

Systems of care for persons living with HIV/AIDS can be defined as the regional service areas created by the Florida Department of Health. In the four areas participating, there was a range of 1–13 counties and the total population ranged from 1.4–2.6 million persons per county in 2015. Entities included in the system of care met the study definition of an organization that contributed to the key outcomes of diagnosis, linkage to care, and continuous care. This analysis included only organizations reporting conducting HIV testing.

Study Design

The methods included a cross-sectional, web-based survey of organizations included in the HIV/AIDS systems of care in four services areas in Florida. The study was conducted in collaboration with the Florida Public Health Practice-Based Research Network and key community partner organizations in each area. Organizations in the system of care were identified via in-person group meetings (9–15 persons attending/area), interviews with key informants (3–5) in each area, and input from key community partner organizations. The size of the systems of care ranged from 44–81 organizations. The webbased survey program, PARTNER, was administered by the University of Colorado and collected organizational and relational data about each organization.

The survey was emailed to a contact in 163 total organizations (out of the 279 listed on the four surveys, as contacts were not uniformly available).

Overall, 67 organizations responded to the survey (RR=41.1%); response rates in individual areas varied from 31.8% to 55.9%, with an average response rate of 44.2%.

Figure 1 and **Table 1** display the characteristics of 45 organizations that reported providing HIV testing services. Figure 1 displays the distribution of organization types across all four networks. The most common organization types were community-based organizations and county health departments. Other organization types offering HIV testing included federally qualified health centers (FQHCs), a private practice, a prison, and a mental health provider.

Table 1. Characteristics of organizations providing HIV testing services (n=45)

Tota you Rec

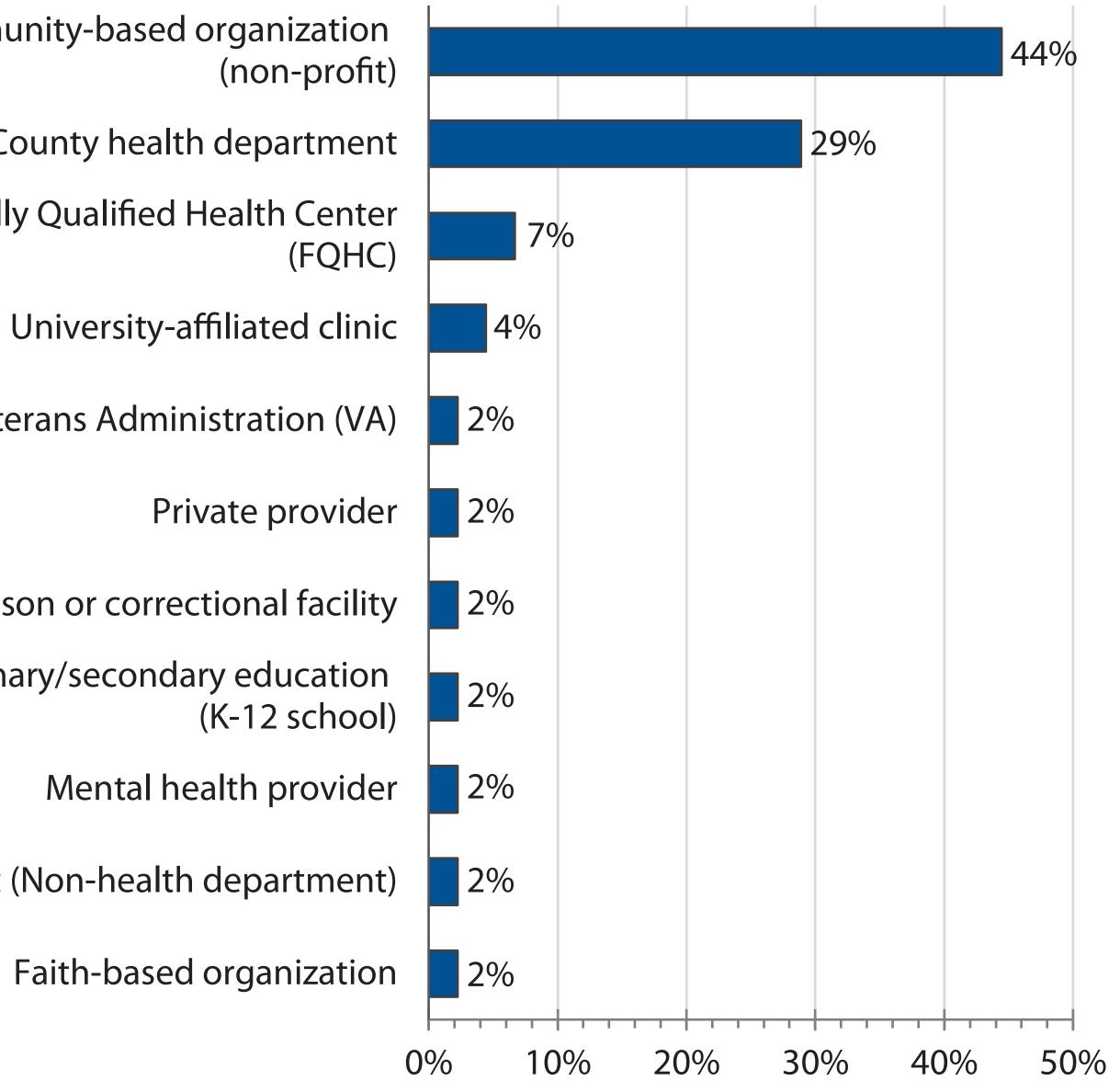
(n = 45)

Integrating to Improve: Examining Linkages Across **Regional HIV Systems of Care**

Findings

	N (%) or median (range)
egory of organization (n = 38)	
Public	14 (36.8%)
Private	0 (0%)
Non profit	22 (57.9%)
Other	2 (5.3%)
al number of HIV-positive clients/patients seen by ur organization in 2015 (median, range) (n = 33)	214 (1-3,000)
ceived Ryan White funding (n = 45)	
Yes	23 (51.1%)
No	22 (48.9%)
gistered testing site (n = 45)	
Yes	31 (68.9%)
No	14 (31.1%)

Figure 1. Organization type of organizations providing HIV testing services



Community-based organization (non-profit) County health department Federally Qualified Health Center (FQHC) University-affiliated clinic 4% Veterans Administration (VA) 2% Private provider 2% Prison or correctional facility 2% Primary/secondary education (K-12 school) Mental health provider 2% HIV clinic (Non-health department) 🛛 2%

To evaluate the **process of linking persons screened and found positive for** HIV to clinical care, we asked: among organizations that report doing HIV testing, to what extent are those clients able to access formal linkage services?

■ 31 (68.9%) of testing organizations offer linkage services.

– Of these, 9 also refer clients to organizations that provide linkage.

■ 3 (6.7%) refer clients to other organizations that offer linkage services. 11 (24.4%) testing organizations reported they do not provide linkage services or report referring clients to any organizations that provide linkage services.

To evaluate the **direct connections between organizations conducting** testing and those providing clinical care, we asked: how many HIV testing organizations also provide clinical care? For those that do not, do they refer clients to organizations that do provide care? We measured the number of referrals to organizations providing care in two ways, including to organizations that responded to the survey (and indicated that they provide primary care) and to organizations listed in the survey and categorized as a county health department, FQHC, university-affiliated clinic, VA, hospital (clinic), other medical provider, private provider, or HIV clinic.

Figure 2. Proportion of HIV testing organizations that provide or refer clients for clinical care

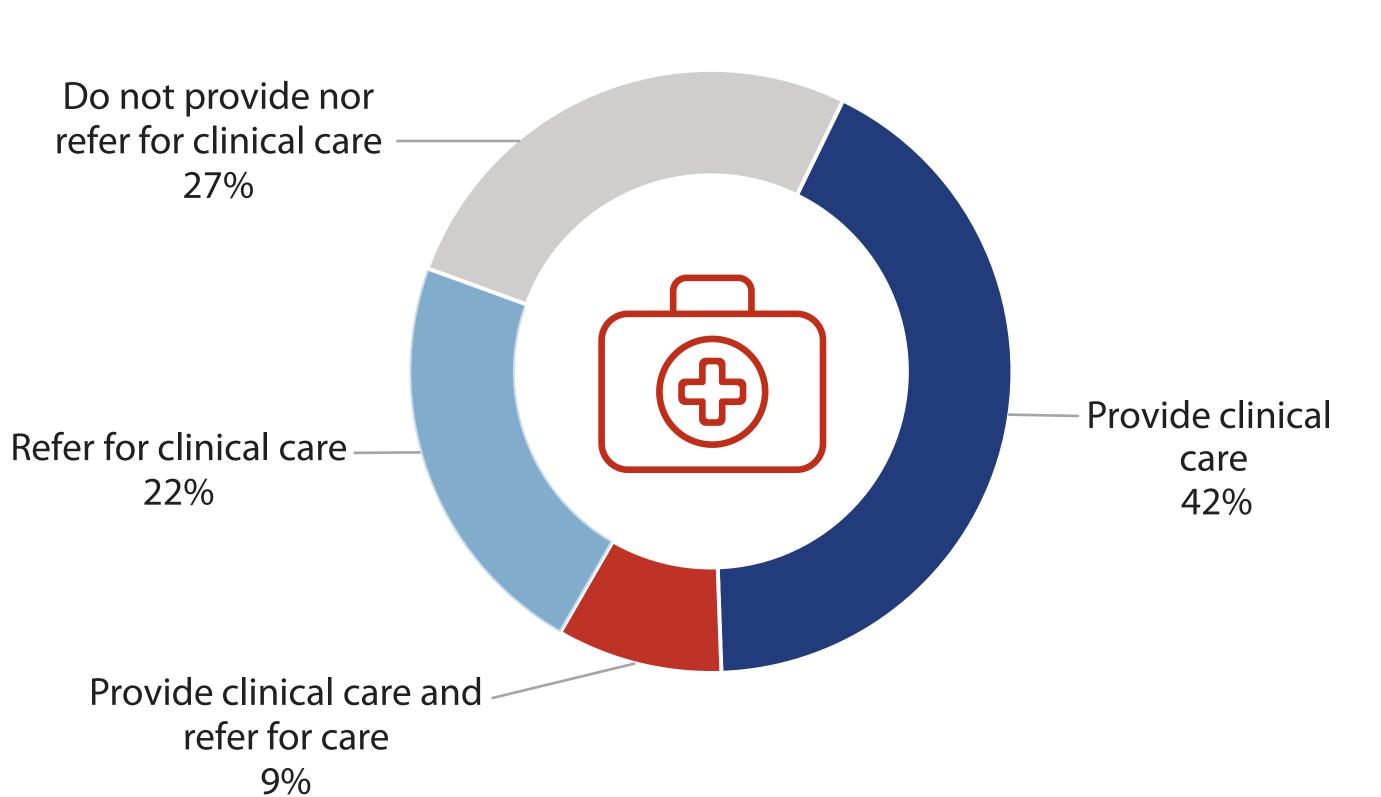


Figure 2 shows that:

23 (51.1%) of HIV testing organizations also provide clinical care.

 Of these, 4 (8.9% of total) also refer clients to organizations that provide clinical care.

An additional 10 (22.2%) HIV testing organizations refer clients to organizations that provide clinical care.

 Each testing organization reported referrals in a range of 1–5 organizations, with a median of 3 referrals, that responded to the survey and reported providing clinical care. Alternatively, each organization made referrals to a range of 4–28 and a median of 13 organizations listed in the survey and categorized as likely providers of clinical care.

12 (26.6%) of HIV testing organizations reported that they did not provide clinical care services nor did they refer clients to any other organization that provides clinical care.

Finally, we explored bivariate associations between providing linkage services and the organizational characteristics shown in Table 1. None of these characteristics were found to be associated with providing linkage services.

Within four HIV systems of care in Florida, the integration of testing and linkage services and testing and referral was common but not universal. Access to formal linkage services needs to be improved. Some organizations may be providing HIV testing services without the support of strong referral networks to enable linkage and/or continuous care.

Although our response rate was low, this does not threaten the internal validity as organizations were provided a list of organizations in their service area to report referrals. Our methods to identify all service providers in each area may have missed some providers that serve as significant sources of clinical care, but this is unlikely. As in all surveys, findings may have measurement error based on respondents understanding our questions. In our case, respondents may have experienced survey fatigue and not reported all possible connections to other organizations.

Our findings underscore the importance of response rate when attempting to understand the adequacy of connections among agencies for linkage and referral using network analysis methods.

References

pdi

Author Affiliations

¹ RTI International, Research Triangle Park, NC ² University of North Carolina at Chapel Hill School of Medicine, Chapel Hill, NC

Acknowledgments

More Information

*Presenting author: Deborah Porterfield 919.630.0532 dporterfield@rti.org





Conclusions and Limitations

Implications for Policy and Practice

Baseline descriptions of systems of care can inform directions for improvement. Findings have relevance for policy-making and funding agencies in HIV/AIDS prevention and control, which have called for integration to achieve national goals towards linkage to care and continuous care.

Centers for Disease Control and Prevention, Division of HIV/AIDS Prevention. (2011). *Linkage to and retention* in care. Available at http://www.nastad.org/Docs/044303_NASTAD%20Webinar%2011_16_11%20Final.

Mugavero, M. J., Norton, W. E., & Saag, M. S. (2011). Health care system and policy factors influencing engagement in HIV medical care: Piecing together the fragments of a fractured health care delivery system. Clinical Infectious Diseases, 52(Suppl 2), S238–S246. Review.

Office of National AIDS Policy (ONAP). (2010). National HIV/AIDS strategy for the United States. Retrieved from http://www.whitehouse.gov/administration/eop/onap/nhas.

Penner, M., & Leone, P. A. (2007). Integration of testing for, prevention of, and access to treatment for HIV infection: State and local perspectives. *Clinical Infectious Diseases*, 45(Suppl 4), S281–S286.

> ³ University of Florida College of Medicine-Jacksonville, Jacksonville, FL

⁴ Florida Department of Health Area 4, Tallahassee, FL

Funded by a PHSSR grant (#72451) from the Robert Wood Johnson Foundation.

RTI International 3040 E. Cornwallis Road Research Triangle Park, NC 27709

Presented at: the AcademyHealth Annual Research Meeting, New Orleans, LA, June 25–27, 2017

www.rti.org

RTI International is a registered trademark and a trade name of Research Triangle Institute. The RTI logo is a registered trademark of Research Triangle Institute.