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Improving Linkage, Retention, and Reengagement in HIV Care in 12 Metropolitan Areas

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Abstract

The Centers for Disease Control and Prevention developed the Enhanced Comprehensive HIV Prevention Planning (ECHPP) project to support 12 health departments' improvement of their HIV prevention and care portfolios in response to new national guidelines. We systematically analyzed 3 years of progress reports to learn how grantees put into practice local intervention strategies intended to link people to, and keep them in, HIV care. All grantees initiated seven activities to support these strategies: (1) improve surveillance data systems, (2) revise staffing duties and infrastructures, (3) update policies and procedures, (4) establish or strengthen partnerships, (5) identify persons not in care, (6) train personnel, and (7) create ways to overcome obstacles to receiving care. Factors supporting ECHPP grantee successes were thorough planning, attention to detail, and strong collaboration among health department units, and between the health department and external stakeholders. Other jurisdictions may consider adopting similar strategies when planning and enhancing HIV linkage, retention, and reengagement efforts in their areas. ECHPP experiences, lessons learned, and best practices may be relevant when applying new public health policies that affect community and health care practices jurisdiction-wide.

Keywords

program planning and evaluation; HIV/AIDS; medical care; qualitative evaluation; partnerships/coalitions

INTRODUCTION

To achieve the goal of reducing HIV rates in the United States, it is essential for local health departments and their community partners to assist persons living with HIV infection (PLWH) receive effective medical care. High adherence to antiretroviral therapy can substantially lower a person's viral load. This improves his or her personal health and

significantly decreases his or her potential for transmitting the virus to uninfected persons (Cohen et al., 2011; Insight Start Study Group et al., 2015; Rodger et al., 2016).

Achieving viral suppression requires a sequence of steps called the "continuum of HIV care" (Cheever, 2007; Skarbinski et al., 2015). Step 1 is for undiagnosed PLWH to be tested for HIV and become aware of their status. Next, they must be referred to and begin HIV medical care (i.e., linkage). Finally, they must remain in care (i.e., retention), be prescribed antiretroviral therapy, have access to the drugs, and adhere to their prescribed regimens. Unfortunately, many PLWH have not completed each step, some discontinuing their medication or care. In areas of the United States with complete reporting, viral suppression was 54.7% among PLWH aged 13 or older who were diagnosed with HIV by year end 2012 and alive at year end 2013 (Centers for Disease Control and Prevention [CDC], 2016). Health departments and their community partners nation-wide are thus obliged to identify and implement the most effective strategies suitable for their local epidemic to maximize the number of PLWH who achieve viral suppression.

BACKGROUND

In 2010, the White House published the National HIV/AIDS Strategy (NHAS) guide to HIV prevention, care, and treatment improvement, and an update in 2015 (The White House Office of National AIDS Policy, 2010, 2015). Following the initial NHAS release, CDC launched the Enhanced Comprehensive HIV Prevention Planning (ECHPP) project (CDC, 2012; Flores et al., 2016). ECHPP was a 3-year demonstration project (October 2010-September 2013) that funded health departments serving 12 Metropolitan Statistical Areas (MSAs) with the highest AIDS prevalence in the United States in 2007 (CDC, 2010). The 12 MSAs were Atlanta, GA; Baltimore, MD; Chicago, IL; Dallas, TX; Houston, TX; Los Angeles, CA; Miami-Dade, FL; New York City, NY; Philadelphia, PA; San Francisco, CA; San Juan, PR; and Washington, D.C. ECHPP required participating health departments to review and revise local HIV prevention plans and increase alignment with NHAS goals throughout their MSA. ECHPP included 14 required and 10 optional but recommended broad intervention areas (e.g., "promotion of retention or reengagement of PLWH in care"; Carey et al., 2015; CDC, 2012; Fisher, Hoyte, Flores, et al., 2016; Fisher, Hoyte, Purcell, et al., 2016; Flores et al., 2016). Considerable latitude was given to each grantee to develop locally tailored activities and strategies designed to help grantees make progress in each intervention area (Flores et al., 2016).

ECHPP provided an opportunity for participating health departments to develop and implement plans that aligned resources with local needs to meet national HIV prevention goals. In the first 6 months of the project, grantees assessed their current local HIV prevention, care, and treatment needs; created locally tailored plans that incorporated evidence-based, high-impact programs and approaches; and developed jurisdiction-specific goals, objectives, and strategies for implementing each of the ECHPP interventions in their plans (Flores et al., 2016). After this initial planning period was completed, most grantees began implementation efforts in April 2011.

We will describe how grantees implemented two required interventions that increase the percentage of PLWH who achieve viral suppression (CDC, 2016). These interventions are "strengthening linkage of newly diagnosed persons to care" and "promotion of retention or re-engagement of PLWH in care" (Flores et al., 2016). Additionally, by identifying grantees' most common activities, successes, and challenges for each intervention, we address the questions "which interventions and programs related to linkage, retention, and reengagement were provided" and "what successes and challenges related to planning and implementation were experienced " (Fisher, Hoyte, Flores, et al., 2016). We also examine grantees' practice-related issues and solutions over time (Flores et al., 2016).

METHODS

We selected methods to identify the most common activities, successes, and challenges related to grantees' linkage, retention, and reengagement efforts. The following describes our data sources, data preparation, and analytic techniques.

Data Sources

Our data came from 6-month progress reports written by the 12 ECHPP grantees to describe their activities, successes, and challenges. Each grantee submitted reports for five consecutive 6-month periods during the project's implementation phase, April 2011 through September 2013. This means we had 60 documents in our data set (12 grantees × 5 reports per grantee; CDC, 2012; Flores et al., 2016).

Data Preparation

We copied blocks of text from the progress reports into five "CDC EZ-Text" software databases, one per reporting period. This software helps researchers organize, code, and analyze semistructured qualitative data (Carey et al., 2008). Each database held 12 records, one for each grantee. Each record included two blocks of text: one containing the grantees' write-up describing their linkage-related work and the other their retention and reengagement work.

Data Coding and Analysis

There are numerous ways to code and analyze qualitative data, each with different strengths and limitations (Leech & Onwuegbuzie, 2007). Using different analysis methods strengthens results (Onwuegbuzie & Teddlie, 2003). Our first method was content analysis. This allowed us to code and enumerate the grantees' activities, successes, and challenges and to identify the most frequent patterns shared among the 12 jurisdictions (Leech & Onwuegbuzie, 2007; Miles & Huberman, 1994).

To begin the content analysis after reading the original reports, we collaborated to create a codebook to classify and tag the data (Carey & Gelaude, 2008; MacQueen, McLellan, Kay, & Milstein, 1998; Ryan & Bernard, 2003). We created 80 codes to classify grantee activities, successes, and challenges. Each code received a descriptive label and was defined in the codebook. We read and coded each progress report and regularly discussed the coding and how best to revise the codebook to ensure it accurately and fully reflected the content of the

grantees' reports. We verified inter-coder reliability by having different team members check each other's work (Carey, Morgan, & Oxtoby, 1996; Hruschka et al., 2004). Coding disagreements were resolved through team discussion.

Grantees either reported a specific coded activity, success, or challenge or they did not. We treated the presence or absence of each code as a dichotomous nominal variable and exported two-dimensional matrices containing 1s (code was assigned) and 0s (code was not assigned) for each of the 12 grantees (Carey & Gelaude, 2008). Each code was counted once per grantee in the matrices. Therefore, the maximum possible frequency for a code for each set of 6-month progress reports was 12 (because there were 12 grantees). Separate matrices were generated for the two interventions and imported into SPSS for tabulating code frequencies. For example, if we used code "TRAIN" for grantees who reported training needs and activities in their linkage-related work, by tabulating the number of times that "TRAIN" was used, we could determinate that 8 out of the 12 grantees did linkage-related training activities during a specific reporting period. This process was repeated for all five reporting periods.

Some of the 80 codes referred to conceptually related activities. For example, combinations of the codes "Partnerships," "Collaboration," "Contractors," "Providing capacity building" and "Coordination with [one of seven groups]" were commonly applied to the same passages of text. After tabulating code frequencies, we grouped conceptually related codes under broad labels we call "themes" (Leech & Onwuegbuzie, 2007; Ryan & Bernard, 2003). We grouped the codes in the example above under the "collaboration and coordination" theme. Grantees may have undertaken a variety of detailed activities about using HIV-related data, integrating intra-agency data systems, and obtaining data from other agencies. We grouped codes related to these activities under the "data use or data systems integration" theme. We used a similar process to identify other themes.

Disadvantages of only using enumeration are decontextualization of grantees' work and insufficient detail explaining what they did. To counteract this problem, we used the method of selecting direct quotes from the grantees' reports that typified their work. We reread the grantees' reports to select quotes about the most common activities, successes, and challenges identified through content analysis. We found text passages that exemplified common experiences across the 12 grantees and variation between grantees. Many of the selected quotes providing explanatory detail on grantee activities also highlight some success or challenge.

We present content analysis findings and illustrative quotes below to inform HIV prevention personnel who are pragmatically interested in "what most often worked or did not work" for improving linkage or retention and reengagement services, based on the ECHPP grantees' experiences.

RESULTS

Analytic results from the five sets of progress reports are presented in three levels of detail—themes, issues and activities, and quotes. Our results focus on themes reported by six (half)

or more grantees during any 6-month reporting period (see Tables 1 and 2). These themes identify the most common areas of effort experienced by the majority of grantees. Seven such themes appear for the two interventions of interest:

1. Data use or data systems integration

2. General staffing issues

3. Written policies and procedures internal to the agency

4. Collaboration and coordination

5. Reach newly or previously diagnosed PLWH

6. Training needs of HIV prevention staff, partners, or clients

7. Identification and resolution of implementation barriers

Each of these seven themes encompasses a constellation of intervention and program details that varied among jurisdictions and between the interventions. Table 3 summarizes all of the specific programmatic issues and activities to which codes in the seven themes were assigned (i.e., what was done when). The quotes illustrate the breadth of jurisdictional contexts and intervention best practices over time (i.e., how it was done) within each theme.

The data use or data system integration theme was prominent in all reporting periods. For both interventions, grantees used data for local needs assessments during early months and, afterward, used data for intervention-specific activities. General staffing issues, such as hiring and reallocation, were common to both interventions. However, staffing issues were periodic for retention and reengagement and nearly continuous for linkage. Written policies and procedures activities were concentrated in early months as grantees laid the groundwork for each intervention. Likewise, collaboration and coordination activities were focused on early foundational strategies (i.e., establishing partnerships) but later were intervention-specific. Activities to reach newly or previously diagnosed PLWH occurred mainly in middle and later months, and grantees used referrals, case management, and partner notification in both interventions. Activities to address training needs centered on intervention-specific topics. For linkage, HIV prevention staff were trained early, and partners and clients were trained afterward. For retention and reengagement, training was early for all and repeated for staff and clients. Delays affected both interventions early on. For retention and reengagement, grantees reported many types of delays but had few implementation barriers later. For linkage, grantees experienced different implementation barriers at different times throughout the project.

Examination of theme frequencies, and summarizing activities and issues, may not adequately convey the complexity of grantees' efforts. The following quotes from different reporting periods provide a more in-depth view of grantees' work around linkage, retention, and reengagement.

Data Use or Data System Integration

In Miami-Dade County prior to ECHPP, it was difficult to verify if a person who tested HIV-positive in a health department facility ever was linked to medical care at Ryan White clinics

because the county health department and Ryan White clinics' computer databases were incompatible (Carey et al., 2015). During ECHPP planning, state and local stakeholders met to identify database variables that could track linkage-to-care, resolve legal issues related to data sharing, develop plans for resolving software and technical issues, ensure quality control throughout the new system, and make plans to sustain the new procedures. Other grantees addressed similar data challenges.

> [E]stablish a seamless electronic client-level data management system . . . HIV prevention workers and contractors will electronically make referrals directly into [Electronic Client-Level Integrated Prevention System] and be able to electronically verify the client's entry into care.
>
> (Houston, 2011)

As time went on, data use shifted to support specific program needs, and staffing, and funds sometimes were realigned.

> Providers will submit data of those lost to care for greater than 6 months . . . These files will be matched to [surveillance, laboratory, and drug assistance program records] to determine if they are seeking care at alternative facilities. Nonmatched cases will be resubmitted to providers for a 90-day recapture effort.
>
> (Washington, D.C., 2012)

Data also were integral to monitoring performance and refocusing efforts.

> HIV Surveillance data, including laboratory reporting . . ., is used to monitor linkage to care on a population basis and is analyzed by sub-populations to assess and address disparities in linkage to care. [and] . . . the length of time it takes people . . . to enter care after an HIV diagnosis.
>
> (Philadelphia, 2012)

General Staffing Issues

Retraining and realigning existing staff, often to community settings, were common throughout ECHPP.

> [New York] continue[d] to deploy embedded health department public health advisors (PHAs) on-site at high prevalence clinical sites to increase the number of persons out-of-care at these sites who are located and reengaged in care.
>
> (New York City, 2011)

> [Infectious Disease and Environmental Health Administration] staff attended an ARTAS [Antiretroviral Treatment and Services, a health promotion case management intervention] training to assess the feasibility of integrating . . . ARTAS . . . into current HIV prevention and care programming. Plans are under way to train linkage case managers and other staff who provide linkage-to-care services.
>
> (Baltimore, 2012)

Written Policies and Procedures

Grantees expended considerable effort to create or revise disease prevention programs' policies and procedures, often to support linkage-to-care and retention/ re-engagement.

> Primary success is the establishment of the new . . . [Linkage Integration Navigation Comprehensive Services] program . . . comanaged by the HIV Prevention Section and STD Prevention and Control Services. The program includes three required ECHPP interventions: linkage to care, retention/re-engagement in care, and partner services.
>
> (San Francisco, 2012)

> A new pay-for-performance model . . . provided an incentive to providers to meet annual linkage to care rates. . . . The model requires establishing a protocol where providers are responsible for providing referral to medical care, follow-up and verification of first medical care appointment; and streamlining data collection . . . These efforts contributed to a significant increase in linkage to care in the last year.
>
> (Los Angeles, 2013)

Collaboration and Coordination

Coordination with other health department units, medical providers, and nongovernmental stakeholders was foundational and ongoing.

> The Linkage to Care workgroup was established with [city and state Departments of Public Health], Prevention and Care Planning Bodies, Connections 2 Care co-chairs, [Midwest AIDS Training and Education Center], Chicago Black Gay Men's Caucus . . ., [Early Intervention Service], Prevention, Specialty Clinics, Outreach and Medical providers from the community.
>
> (Chicago, 2011)

Collaboration extended to other governmental agencies.

> In order to identify possible HIV patients already tested but out of treatment, the [Puerto Rican Department of Health] is currently working with the [Department of Corrections] in a collaborative agreement . . . to link HIV positive ex-inmates to care providers.
>
> (San Juan, 2012)

Reach PLWH

Grantees used various strategies to ensure that PLWH who recently tested positive were linked to care, and previously diagnosed PLWH who were not receiving HIV medical care were linked or reengaged.

> Health Districts in the Atlanta MSA will implement the Georgia "Test-Link-Care" Network. [which] will identify and promptly link to care persons who are living with HIV but not receiving treatment . . . the model will improve patient retention in HIV primary care through the use of trained Linkage Coordinators and systemic

networking among HIV care providers, HIV testing providers, and the health department.

(Atlanta, 2012)

Training Needs of Staff, Partners, or Clients

Because ECHPP represented a major shift in health departments' and community partners' approaches to HIV prevention, the need for new training was considerable.

> To support the development of local capacity for a lost to care program component, motivational interview training was held . . . in May 2010. . . . Online case management training was rolled out in January 2011 . . . Once enough case managers complete the online training, one-day in-person training will be held that covers multiple topics including retention in care.

(Dallas, 2011)

Implementation Barriers

Grantees encountered many barriers that hindered their initial ECHPP goals and objectives, including funding, staffing, and organizational structural impediments. In 2012, Miami encountered barriers in creating peer support programs to assist in reengagement and retention:

> Some of the challenges that have been presented are: a delayed hiring process and infrastructure building; licensure and intervention trainings; reporting for billing and other data; logistics for referrals and processes; trainings; and data provision and inputting burden for clients and providers.

At times, challenges caused grantees to revise their plans, alter their time frame, or identify novel solutions.

> The new navigation program of the Citywide [Positive Health Access to Services and Treatment] Team, . . . will act as the "safety net" retention/re-engagement team for the city. . . . Barriers to rapid scale-up of this service are related primarily to the need to coordinate within all levels of the HIV prevention and care systems to prevent duplication of services, which takes a great deal of time.

(San Francisco, 2011)

DISCUSSION

ECHPP was an unprecedented partnership across federal, state, and local governments and with nongovernmental stakeholders. To address the NHAS paradigm shift, ECHPP sought to transform HIV prevention, care, and treatment fundamentally in the United States (Flores et al., 2016; Greenberg, Purcell, Gordon, Barasky, & Del Rio, 2015) However, PLWH's ongoing difficulties accessing HIV medical treatment led ECHPP grantees to emphasize improving linkage to and retention/reengagement in care. Initial results show that ECHPP grantees successfully shifted resources and expanded their HIV programs (Fisher, Hoyte, Purcell, et al., 2016).

Many other jurisdictions are transforming how they approach HIV prevention, care, and treatment and may still apply strategies used during ECHPP. For example, Iowa's state health department established an academic partnership to generate a resource allocation model, based on ECHPP work in Baltimore (Holtgrave, Maulsby, Kim, Cassidy-Stewart, & Hauck, 2016; Holtgrave, Young, Mayer, Maulsby, & Kim, 2013). Analysis of the ECHPP grantees' progress reports reveals multiple strategies that supported successful jurisdiction-wide change. It is possible that other health departments that need to make adjustments to align with NHAS goals could find application of ECHPP approaches to be useful. Example lessons learned include the following:

- Data issues are continuous and affect service delivery monitoring for both interventions. Establishing new integrated data systems or getting incompatible legacy databases to communicate with each other facilitated the movement of PLWH through the continuum of care steps. Upgraded systems also provide sustainable value.

- Revising staff duties, hiring new personnel, or reorganizing administrative structures may help support work aligned with NHAS and local continuum of care needs. Reassignments and restructuring potentially are continued benefits.

- Current policies and procedures likely will need to be revised, and in some cases new documents may need to be written. After new policies are instituted, they may be in effect for years before they need to be updated.

- Collaboration between health department units, collaboration between the health department and external stakeholders, and creation of new partnerships were essential for establishing and sustaining a coordinated referral system, identifying and filling service gaps, and avoiding duplication. Partnerships created for these interventions may be useful for other public health efforts.

- Consider focusing on the needs of individuals, sub-populations, or neighborhoods who are experiencing particular difficulty being linked to care after HIV diagnosis, or subsequently staying in medical care.

- Personnel within health departments and local nongovernmental groups, such as community-based organizations, will require training to become familiar with new priorities and procedures and learn new skills.

- The ability to be flexible, persistent, and innovative can lead to successful solutions, even if the solutions slow timetables or require altering local goals and objectives.

Limitations

There are several limitations to our findings. First, ECHPP supported only 12 jurisdictions, making our sample size too small to warrant rigorous statistical analysis. Nevertheless, we successfully identified a wide range of prominent implementation activities and issues and case examples of successes. Second, these 12 jurisdictions included 44% of AIDS cases in the US at the time (CDC, 2010). Third, ECHPP was not designed as a research study. As a demonstration project and public health program support project (CDC, 2012; Flores et al.,

2016) grantees had considerable latitude in designing their activities, and in how they wrote their progress reports. This flexibility served the project as a strength, because it allowed grantees to tailor their efforts to local needs. However, it made standardized data coding and cross-site comparisons challenging and time-consuming.

CONCLUSION

Other jurisdictions may benefit from applying ECHPP grantees' careful and detailed planning processes. During the first few months of the project, all grantees were asked to conduct situation analyses of local needs (Flores et al., 2016). Findings were used to construct specific local goals and objectives. To aid the planning process, some grantees conducted extensive situation analyses (Carey et al., 2015), used detailed analyses of existing HIV behavioral surveillance data to pinpoint gaps (German, Linton, Cassidy-Stewart, & Flynn, 2014), or conducted resource allocation modeling (Holtgrave et al., 2016; Kessler et al., 2013; Lasry, Sansom, Hicks, & Uzunangelov, 2012; Ryan et al., 2014; Yaylali et al., 2016). Other grantees improved use of data systems to assess linkage-to-care successes, barriers, and trends (Das et al., 2013). These, and similar efforts, helped grantees prioritize neighborhoods and subgroups and guided concrete implementation activities for the linkage and retention/reengagement interventions, and for the other ECHPP interventions (data not shown).

One of ECHPP's overarching challenges was that time for planning was highly constrained, time for implementation was short, and the amount of funds for each MSA was limited (Fisher, Hoyte, Flores, et al., 2016). Despite these difficulties, grantees were able to make significant shifts in their local approach to HIV prevention.

Finally, ECHPP highlights the value of strong collaboration and partnerships in public health. These include ties between different units within health departments and good working relationships between the health department and myriad external stakeholders (Carey et al., 2015; Holtgrave et al., 2016). Collaboration and partnerships are cultivated over long periods, and are an essential element in planning and implementing a project like ECHPP, as well as in HIV prevention overall and in other public health programs.

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Table 1

Reporting Periods When Themes Were Mentioned by at Least 6 of the 12 ECHPP Grantees for the Linkage Intervention, April 2011 Through September 2013

Coded Themes	Reporting Periods				
	April-September 2011	October 2011-March 2012	April-September 2012	October 2012-March 2013	April-September 2013
Use of data or data systems integration	XX	XX	XX	XX	XX
General staffing issues	x	XX		x	x
Written policies and procedures internal to agency	x			x	
Collaboration and coordination	x	x	x		
Reach newly or previously diagnosed PLWH		x	x	x	x
Training needs of staff, partners, or clients	x	XX	XX	x	x
Implementation barriers	x	x	x	x	x

NOTE: ECHPP = Enhanced Comprehensive HIV Prevention Planning project; PLWH = persons living with HIV; x = mentioned by 6 to 8 grantees, XX = mentioned by 9 to 12 grantees.

Table 2

Reporting Periods When Themes Were Mentioned by at Least 6 of the 12 ECHPP Grantees for the Retention and Reengagement Intervention, April 2011 Through September 2013

Coded Themes	Reporting Periods					
	April-September 2011	October 2011-March 2012	April-September 2012	October 2012-March 2013	April-September 2013
Use of data or data systems integration	XX	XX	XX	XX	x
General staffing issues	x		x		x
Written policies and procedures internal to agency	x				
Collaboration and coordination	x				
Reach newly or previously diagnosed PLWH			XX		
Training needs of staff, partners, or clients	x		x		
Implementation barriers	x				

NOTE: ECHPP = Enhanced Comprehensive HIV Prevention Planning project; PLWH = persons living with HIV; x = mentioned by 6 to 8 grantees, XX = mentioned by 9 to 12 grantees.

Table 3

Intervention-Specific Themes and Related Health Department Issues and Activities Reported by the 12 ECHPP Grantees, April 2011 Through September 2013

Themes	Linkage Intervention: Issues and Activities	Retention and Reengagement Intervention: Issues and Activities
Data use or data systems integration	• Identify local needs, gaps, and duplication of services[a] • Redistribute or reallocate funds based on surveillance data[a] • Monitor program performance; Improve services[b] • Switch legacy database to new system[b]	• Identify local needs[a] • Redistribute or reallocate funds based on surveillance data[a] • Share data with internal and external partners[a,b] • Improve surveillance[b]
General staffing issues	• Assess current knowledge and skills of staff[a] • Address staffing shortages[a,b] • Assign job duties related to the intervention[a,b] • Improve staff coordination and efficiency[b]	• Reallocate current staff to the intervention[a] • Hire additional staff[a] • Adjust staff workloads[a] • Replace staff lost to turnover[b]
Written policies and procedures internal to agency	• Write or revise policies, procedures, protocols, guidelines: HIV testing, partner services, linkage-to-care, data security and confidentiality, staff performance, interview records[a,b]	• Write or revise policies, procedures, protocols, guidelines: standards of care, data sharing, service plans, standard operations, screening services, medication payment[a]
Collaboration and coordination	• Establish workgroup to create inventory of services[a] • Work with other health department units[a,b] • Coordinate patient referrals with private providers[b] • Provide capacity building assistance for partners[b]	• Establish provider network for patient referrals[a] • Create patient navigation system[a] • Contact partners' out-of-care clients[b] • Integrate HIV, STD, TB, viral hepatitis screening[b]
Reach newly or previously diagnosed persons living with HIV	• Make referrals to medical care and psychosocial services[b] • Expand partner notification and partner services[b] • Conduct prevention case management[b] • Navigate clients between providers[b] • Provide job training, transportation assistance[b]	• Use surveillance data to identify persons not in care[a,b] • Contact partners' out-of-care clients[b] • Expand prevention case management[b] • Coordinate client's reentry into HIV care[b] • Make referrals to psychosocial services[b]
Training needs of staff, partners, or clients	• Improve staff skills on new procedures, case management[a]	• Improve staff case management and interviewing skills[a]

Themes	Linkage Intervention: Issues and Activities	Retention and Reengagement Intervention: Issues and Activities
	• Increase capacity of vendors to perform linkage-to-care[a]	• Increase providers' awareness of policies[a]
	• Enhance clients' retention-related attitudes and skills[b]	• Increase providers' skills in electronic reporting[a]
	• Inform providers about partner services[b]	• Reach clients to increase their awareness of services[a,b]
	• Teach providers partner elicitation skills[b]	• Increase staff knowledge of community resources[b]
Implementation barriers	• Delays: hiring, executing contracts, finalizing policies[a]	• Delays: hiring, training, approvals, logistics, infrastructure building, billing, reporting, data management/ integration[a]
	• Funding: availability, increases, decreases[a,b]	• Balance time devoted to coordination and implementation[a,b]
	• Partners' capacity to provide services[b]	• Legal issues around data sharing[a,b]
	• Reorganization of health department units[b]	

NOTE: ECHPP = Enhanced Comprehensive HIV Prevention Planning project; HIV = human immunodeficiency virus; STD = sexually transmitted diseases; TB = tuberculosis.

[a]During early intervention months.

[b]During middle and late intervention months.