



Published in final edited form as:

AIDS Behav. 2025 August ; 29(8): 2451–2460. doi:10.1007/s10461-025-04707-w.

Disease Intervention Specialist Field Experience in Re-engaging Out-of-care People with HIV in Project CoRECT: A Mixed Methods Study

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Abstract

The HIV care continuum is a framework that describes gaps in care engagement for people with HIV (PWH) who know their HIV status, are on antiretroviral therapy, and are virally suppressed. Despite the United Nations' 95–95–95 targets, significant gaps remain in the United States, driven by PWH who are not engaged in care. To evaluate a Data-to-Care strategy to re-engage PWH who recently fell out of care, the Centers for Disease Control and Prevention funded a randomized, controlled trial called the Cooperative Re-Engagement Controlled Trial (CoRECT) was conducted in Connecticut, Massachusetts, and Pennsylvania between 2014 and 2018. Three Disease Intervention Specialists (DIS) were trained to provide a public health intervention that adapted the Anti-Retroviral Treatment and Access to Services (ARTAS) model for re-engaging PWH in care. In this secondary analysis, we examined the implementation processes and field experiences of DIS in Connecticut using an explanatory sequential mixed methods design. Data sources included DIS field notes, an internal database, and in-depth interviews with two DIS. We found that the fidelity to the adapted ARTAS (ARTAS+) varied considerably, barriers to

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Author contributions:

Conceptualization: FLA, RS, MV

Methodology: FLA, RS, MV

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Writing original draft: EM, MV

Writing review and editing: EM, RS, JT, CC, LN, BA, FA, MC, MV

Funding acquisition: MV, FLA

Resources: N/A

Supervision: MV, MC, FLA

Trial registration: www.clinicaltrials.gov with an identifier NCT02693145

care assessments were completed consistently (95%), and structured interactive sessions were completed less frequently (35%). Qualitative interviews with DIS highlighted the importance of flexibility and rapport-building in re-engagement efforts. Re-engagement efforts were negatively impacted by psychiatric and substance use disorders and homelessness, while patient-reported barriers included time mismanagement, inconvenient clinic operational hours, or not perceiving themselves as sick. The study provides a roadmap for future Data-to-Care implementation efforts and underscores the importance of patient-centered approaches for re-engaging PWH in care.

Keywords

Data-to-care; HIV; implementation science; HIV treatment as prevention; disease intervention specialists

Introduction

The HIV care continuum tracks the progress of people with HIV (PWH) through critical stages of care engagement, including awareness of their HIV status, initiation of antiretroviral therapy (ART), and achieving viral suppression [1]. Despite the United Nations' (UN AIDS) 95–95–95 targets for these indicators, considerable gaps persist in the United States (U.S.) [2]. In 2019, 87% of all PWH in the U.S. were aware of their HIV status, 66% were on ART, and 57% achieved viral suppression [3], with PWH who were not virally suppressed accounting for over 60% of HIV transmission cases [4, 5]. Achieving viral suppression benefits both individual and public health by reduced mortality, improving health outcomes, and decreasing HIV transmission. Achieving optimal HIV care engagement, however, is complex and remains a significant challenge in the HIV care continuum, with few evidence-based interventions available. Systematic monitoring of entry into and retention in HIV care, as recommended by the International Advisory Panel on HIV Care Continuum Optimization guidelines, can improve linkage and retention by integrating surveillance and electronic medical records (EMR) data [6, 7, 8]. Approaches to optimizing linkage and retention include public health outreach to providers, electronic reminders, and direct contact with patients by field epidemiologists affiliated with the Department of Public Health [9]. Barriers to these efforts, however, persist on multiple levels: monitoring and data sharing efforts are thwarted by state laws related to sharing of confidential information, and care engagement is hindered by social determinants of health such as financial and housing instability or food insecurity and interpersonal factors like inadequate provider support and patient perceptions of intrusion and coercion [10].

One of the system-level strategies to overcome at least some of these barriers and enhance engagement in HIV care is the Data to Care (D2C) intervention, a public health strategy that uses health department surveillance data to identify and re-engage out-of-care PWH [11, 12]. To evaluate a D2C intervention, the Centers for Disease Control and Prevention (CDC) funded a randomized, controlled trial, which was conducted in three states (Connecticut, Massachusetts, and Pennsylvania) between 2014 and 2018. Out-of-care PWH were randomized to receive either usual linkage and engagement in care services or an active public health intervention involving a Department of Public Health field

epidemiologist – also called a Disease Intervention Specialist (DIS). DIS activities included field services to locate and contact out-of-care PWH, and facilitate the process of their re-engagement in HIV care.

The main outcomes of the study and the description of the implementation have been published [9, 11, 13, 14, 15, 16]. The implementation process, though, is highly context-specific and implementation outcomes often differ from effectiveness outcomes [17]. As implementation differed substantially in each of the three contexts, we report the implementation barriers and the field experience within the inner context of the actors (i.e., the DIS in the State of Connecticut) in this secondary analysis. Our aim is to elucidate the context-specific challenges associated with conducting a complex public health intervention in real-world settings and to provide a roadmap for future D2C implementation efforts.

Methods

Overview of Study Design

The Cooperative Re-Engagement Clinical Trial (Project CoRECT) protocol has been described elsewhere [9, 11]. Briefly, sites in Connecticut, Massachusetts, and Pennsylvania followed a general study protocol with site-specific variations in implementation. In Connecticut, CoRECT was implemented in 23 clinics across Bridgeport, Hartford, and New Haven counties between 2014 and 2018 through a partnership between local departments of public health and Yale School of Medicine. Participants included PWH considered to be newly out of care, defined as not having a provider visit, CD4 count, or a viral load test for at least 6 months since their last visit or measurement. We assessed engagement by reconciling surveillance records of public health departments with clinical records data. Participants were randomized either to the clinic's standard of care or to the study intervention arm. Standard of care varied by clinic, ranging from no follow-up to routine phone calls to patients who missed appointments. In the intervention arm, the Connecticut Department of Public Health employed one DIS per county tasked with locating and re-engaging participants in care. The main outcomes of the study were re-engagement in care at 90 days, retention in care, and viral suppression at 12 months. In this mixed-methods analysis, we report the intervention fidelity, the DIS workflow, patient-reported and DIS perceptions about facilitators and barriers to re-engagement in care.

Intervention Development

The Anti-Retroviral Treatment and Access to Services (ARTAS) is an evidence-based intervention that was designed to target newly-diagnosed PWH with the goal of linking them to HIV care [18]. ARTAS, when delivered as intended, requires 5 one-on-one individual sessions conducted between a linkage coordinator (a person conducting ARTAS sessions with PWH) and a newly diagnosed PWH over 90 days with a focus on strengths-based assessments and coordination with community resources. We tailored ARTAS not for newly diagnosed PWH, but for those who were recently out-of-care and the use of DIS to deliver the adapted ARTAS intervention (called ARTAS+). The DIS for CoReCT were trained for HIV re-engagement based on a curriculum that focused on other populations at the Connecticut Department of Public Health (CTDPH) (i.e., those in the Sexually Transmitted

Diseases Partner Notification Program) [19] along with a literature review. As DIS viewed their work as an ‘acute’ linkage intervention, one important adaptation was abbreviating the original intervention to allow for rapid delivery and transition to community case managers. Within the scope of ARTAS+, DIS were tasked with implementing several semi-structured sessions over a 90-day period or until PWH were re-engaged in HIV care (i.e., based on a completed clinic visit). For those who were linked to care, the intervention was deemed concluded. ARTAS+ was designed to utilize a patient-driven approach, with DIS conducting structured individual sessions and active, community-based case management, meeting patients in their environments and coordinating linkage to available community resources when needed, including both formal (e.g., housing agencies and food banks) and informal (e.g., support groups) resources. An integral part of ARTAS+ was building a collaborative relationship between DIS and out-of-care patients. ARTAS+ was flexibly framed with carefully placed skip patterns, allowing for deviations from a linear progression through sessions and acknowledging that not all patients would complete all three sessions. The adapted intervention provided a basic framework to help DIS tailor their interactions to address unique challenges in a personalized and effective way.

Training of Disease Intervention Specialists

DIS training encompassed ARTAS+-specific content, including a session on the intervention protocol, a workshop on sexual and injection drug use behaviors, risk reduction and treatment retention strategies, and 1-on-1 booster sessions with role plays on protocol content. The training also included a standard DPH-required 21.5-hour module titled “*Passport to Partner Services*.”

DIS were then trained to deliver ARTAS+ components, including conducting the Barriers to Care (B2C) survey and strengths-based assessments, encouraging PWH to use their strengths, abilities, and skills to re-engage in care. ARTAS+ prioritized conducting structured sessions with PWH in their environment as part of community-based case management, and included advocating on behalf of the PWH to link them to medical care and other needed services. DIS were instructed to use their discretion in applying all or some components of ARTAS+ as needed. The ARTAS+ intervention framework is outlined in Appendix A.

Data Sources

DIS were asked to enter data and maintain field notes in an internal database, HARMSWeb, housed within the Connecticut Department of Public Health. These notes enabled us to analyze how frequently DIS utilized individual ARTAS+ components and recorded communication types documented in the Fidelity Assessment Form (Appendix B). Additional information included final outcomes of DIS’s attempts to locate patients (e.g., returned to care, incarcerated, unable to locate, etc.) and visit-related details for those who returned to care (e.g., date of visit). The B2C survey captured self-reported challenges to HIV care, including attitudes and perceptions about HIV and health, issues with the medical facility and provider, time management and organizational skills, health insurance and access to medical care, social and supportive services, and other potential barriers (Appendix C). We conducted two in-depth interviews with DIS to understand their experiences

working in the field. These data were used to better understand fidelity to the ARTAS+ implementation.

Data Analysis

Descriptive statistics are reported for the ARTAS+ fidelity, communication types, B2C survey, re-engaged status of participants randomized to DIS, and retention status at 90 days using frequencies and percentages. For the ARTAS+ fidelity analysis, the numerator was the number of times the DIS reported completing the intervention element, and the denominator was the total number of completed Fidelity Assessment Forms by DIS in their respective counties for each component. In the B2C survey, the numerator was the number of completed surveys. All analyses were stratified by county. R statistical software was used for the analysis. For qualitative interviews, thematic analysis was used, looking for the barriers, facilitators, and the general workflow that the DIS experienced during the implementation process of the CoRECT study. The thematic codebook is provided in / Appendix D.

Ethical Considerations

Project CoRECT activities were approved by the State of Connecticut Department of Public Health Human Investigations Committee (Protocol #823) and Yale University Institutional Review Board (#15100166172). As the study was deemed not to be Human Subjects Research by Yale University IRB, the informed consent procedures were waived.

The study is registered at www.clinicaltrials.gov as [NCT02693145](https://clinicaltrials.gov/ct2/show/study?term=NCT02693145).

Results

ARTAS+ Utilization: Fidelity to Intervention Components

As previously reported, there were 333 PWH who were randomized to the DIS, of which 170 (51.1%) were re-engaged in care within 90 days as defined by surveillance data using intention-to-treat analysis [13]. For those randomized to the DIS arm, 44 (57.1%), 59 (46.5%), and 66 (51.9%) PWH were re-engaged in Bridgeport, Hartford, and New Haven, respectively. Regardless of the ultimate outcome of re-engagement in care at 90 days, among those randomized to DIS (N=333), 192 (57.6%) completed some component of ARTAS+ as shown in Table 1, stratified by the county. Key fidelity measures included completion of the B2C survey for 183 (95%), the strengths-based assessment for 108 (56%), and encouraging patients to use their abilities to link to care for 108 (56%), conducting one or more structured sessions with the patient for 67 (35%), conducting active community-based case management for 55 (29%), and advocating on the patient's behalf to link them to care and other needed services for 83 (43%) participants. Additionally, DIS reported that 112 (58%) of the patients were receptive to working on overcoming barriers. The completion of ARTAS+ components by county is shown in Table 1.

Outcomes of attempts by Disease Intervention Specialists to locate participants (among those re-engaged at 90 days)

Field reports reflect “as treated” analysis as DIS categorized return to care based on actual completed clinic visits. We previously reported that among those randomized to DIS (n=333), 93 (27.9 %) returned to care based on completed clinic visits; 72 (21.6%) could not be located; 52 (15.6%) were located but declined to participate [13]. As shown in Table 2, even among the sample that re-engaged at 90 days (n=170 based on surveillance data), 80 (47.1%) were attributable to DIS efforts with variations observed across counties.

Barriers to Care Assessments with Patients

Of 333 patients assigned to DIS, 183 (55%) reported at least one barrier on the B2C survey. The most commonly reported barriers pertained to (a) attitudes and perceptions about health, such as *I didn't feel sick* (28%) and *I didn't want to go* (19%); (b) challenges with the medical facility: *the clinic's hours didn't match times when I could get there* (20%); and (c) time management and organization: *I couldn't take time off from work or school* (27%), and *I forgot* (31%). A total of 54 (30%) participants responded that they had other reasons why they had not remained in HIV care (Table 3). These reasons included being out of state, not being aware that they were out-of-care, either having a scheduled or a recent visit or following up every 12 months with their provider. Most of the participants reported more than one barrier to HIV care access, with 121 (67%) reporting at least two barriers (Figure 1).

Qualitative Interviews with Disease Intervention Specialists

All three DIS were invited for the in-depth interviews, but only two were able to participate because of time constraints. During the interviews, the DIS provided a detailed description of their workflow. They also identified two general types of participants, those who according to the DIS did not perceive themselves as being out-of-care and were relatively easy to re-engage, and those with medical and social comorbidities or social determinants of health that posed additional challenges to re-engagement.

Disease Intervention Specialist Workflow

The DIS described their workflow as follows: after receiving the list of participants following the data reconciliation process [13], they delivered the names to their supervisors in the DPH for phone number and address search. DIS reported that phone numbers would often be out of service, and in those cases, DIS visited patients at home. If patients were not at home, DIS left a letter at the door with a short message and contact information. Following a two-week period, if DIS did not hear back from patients, they conducted a second home visit:

“First, I would hand over all the information to my supervisor, the patient information, she would do a LexisNexis [patient dataset] search. With that, the first thing I do is if I have a phone number, I call. Nine times out of ten they just were not in service ... If they're not there, I leave the letter at the door. I give them a couple of weeks and then, if I don't hear back from them, I go do a second visit.

If the letter's there, I just take it with me and then there's not much I can do at that point."

Following communication with DIS, patients would schedule clinic visits on their own or request help from DIS. DIS reported conducting home visits for nearly half of the sample randomized to them and deemed this type of communication helpful. In a few cases, DIS provided transportation to clinic visits. The need for transportation varied across urban and rural areas, with patients in the urban areas having better access to public transportation.

DIS often had to adopt an advocacy role, accompanying patients to clinic visits for support or to help them communicate with their providers:

"If they wanted me to go in, I just sat there for some of them and for some of the cases I had to just talk for them, in a sense, or like "translate" what the doctor was saying to them because they just didn't understand."

Lastly, DIS reported that to be able to build rapport with participants, they often had to abandon the scripted ARTAS+ structure and adjust the way of communication with individual patients, adopting a more informal approach.

Types of Contact with Patients

In qualitative interviews, unlike strategies reported in the original ARTAS intervention that used mostly in-person contact, text messaging was the most commonly used mode of communication, followed by phone calls. The DIS reported that they tried to call patients at least once before starting text messaging to introduce themselves and instruct them to refrain from mentioning their diagnosis, medications, and provider names in text messages for privacy. The DIS reported that they only used Facebook to visually identify patients, but rarely resorted to messaging them there.

The DIS visited approximately 50% of patients at home, and sometimes scheduled meetings in a car or chain restaurants in cases when they wished to be discreet:

"Patients who were very discreet, would not meet [me] at their home. I have cases where I met in my car, Dunkin Donuts, one at Subway."

The DIS reported not using video calls or any other similar services and did not consider them necessary.

Participants not perceiving themselves as out-of-care

The DIS reported that a large proportion of PWH did not perceive themselves as being truly out of HIV care. Some of them had been scheduling clinic visits once every 12 months, others missed a visit and forgot to reschedule. Once these participants were notified that they were out of care, they frequently scheduled a visit to re-engage. These participants were often taking their medications and had achieved an undetectable viral load. In these cases, the DIS viewed their intervention as less intensive, as a reminder phone call or a text message would be sufficient to encourage the patient to schedule a clinic visit. The DIS also proposed redefining the term "out-of-care" by extending the necessary period from 6 to

12 months. This would allow the identification of out-of-care participants who need more intensive support from the DIS:

“I would probably extend the six months out of care [period]. I would probably think that extending it to 12 months would help, because then we get those patients who are truly [out of care]”

Challenges to Re-engagement

The three medical and social comorbidities recognized as most challenging for re-engagement and retention in care by DIS were mental health problems, substance use disorders, and homelessness. DIS stated that people often needed to take care of these conditions in order to be successfully retained in HIV care, and DIS were often providing support to link them to appropriate care, including mental health and substance use clinics:

“[after getting them set up with an HIV appointment] I would get them hooked up either to mental health services or substance abuse clinic. Because, at that point, if they’re not managing their mental health and their substance abuse, you can forget about getting them in care, keeping them in care.”

DIS also identified younger age as a risk factor for failure to re-engaging in care. Younger patients often stopped contacting DIS after setting up an appointment, often missing the visit. According to DIS, the most challenging reason for not re-engaging in care among younger patients was having a lower concern regarding their health, whereas for older patients, it was the perception that medications had harmful side-effects. Additionally, DIS reported that patients who were using services of private providers were typically more discreet, often did not perceive themselves to be out-of-care, and were less receptive to working with DIS.

Discussion

In this mixed-methods study that explored the implementation process outcomes and DIS field experience in Project CoRECT, we found variable utilization of the modified ARTAS+ tool that was adapted for out-of-care individuals to promote re-engagement in care. While the main outcomes analysis of the trial showed that the DIS intervention was more effective than the standard of care for re-engagement at 90 days based on the intention to treat analysis, the actual field experience was more variable, partly due to the heterogeneity of out-of-care experiences. DIS had to maintain a level of flexibility depending on patient needs, ranging from brief reminders to multiple phone calls and field visits with linkage to ancillary services, such as mental health, addiction treatment clinic, and medical case managers. The balance between adhering to ARTAS+ approaches and practical re-engagement strategies varied as did the number and types of barriers identified.

We surmise that fidelity to ARTAS+ did not necessarily correlate with successful re-engagement in care at 90 days. For example, while Bridgeport and Hartford DIS reported similar frequencies of utilizing ARTAS+ components, re-engagement success was nearly tripled in Bridgeport compared to Hartford. The description of the implementation barriers and challenges shows that DIS interactions with patients did not lend themselves to

conventional intervention delivery. For example, there were wide-ranging and unstructured contexts in which DIS interacted with participants (e.g., in the car of the DIS, in chain restaurants). Thus, the real-world interactions reported by DIS workers were less compatible with the use of a conventional manualized or scripted approach. According to the ARTAS+ components fidelity analysis, DIS did not utilize all the components in every instances. While some components, like the B2C survey, were completed in almost every case, the rate of completion of structured sessions was much lower. DIS elaborated on this finding in interviews, highlighting the impracticality of adhering strictly to the ARTAS+ components and noting improved patient engagement in cases where they adopted a more informal, unstructured approach. This finding underscores the importance of flexibility both in DIS protocols and activities in the field. It is important to note, however, that flexibility should not translate to lack of structured tools in the DIS toolkit, but rather into flexibility to what these tools are going to be (e.g., skills conducting a structured sessions versus advocacy) and when and how these tools will be used. For example, to combat misconceptions about adverse health effects of ART and the need to receive medication even if individuals do not feel sick, it may be helpful to provide DIS with skills to increase health literacy among patients. Building rapport emerged as another critical factor in the intervention success. DIS adopted a patient-centered approach, adapting communication styles to individual preferences and fostering trust. We also acknowledge that while ARTAS has strengths in promoting care engagement, contemporary approaches such as Rapid ART start and low barrier approaches are also critically important.

A major advantage of DIS, compared to the standard-of-care procedures carried out by the clinical staff in re-engaging patients, is the ability to perform field visits. DIS used phone calls most frequently, but notably, conducted field visits more often than using voicemail, social media, or other means of communication. DIS reported that they visited patients in at least half of the cases, sometimes without calling in advance. The frequency of face-to-face visits at the patient's residence, as well as the perceived effectiveness of such communication by DIS, highlight the importance of having a designated person who is able to work in the field and carry out such visits. DIS reported that they often adopted a spontaneous intervention approach and modified it according to the specific patient and situation. It became clear that a relatively structured intervention strategy would be less practical compared with a flexible intervention framework that is responsive to the context, DIS preferences, and patient needs. This flexibility and mobility may have been a key component of DIS success.

DIS identified psychiatric and substance use disorders, as well as homelessness, as major barriers, requiring services and additional support beyond engaging in HIV care. This is aligned with the model for HIV prevention and treatment with key populations. Among PWH, there are often co-occurring conditions that undermine care as one condition (e.g., depression) may undermine engagement in treatment for other conditions like HIV [20]. Consequently, the DIS often had to link patients with multiple comorbidities to care, highlighting the need for integrated services for those with co-occurring substance use and psychiatric disorders. Among patients who responded to the B2C survey, unsurprisingly, most had more than one barrier. Although the survey accounted for commonly articulated barriers, many factors related to social determinants of health, such as treatment literacy,

media representations, trusted and steady provider relationships, may have been at play, as we found in another study involving engagement in HCV care [21]. We also found common barriers that were not anticipated, and, therefore, were not emphasized in the original ARTAS+ intervention. The B2C questionnaire, however, was not entirely patient-centered. Even if participants reported a specific barrier, such reports reflect what they believe to be true, which may not always reflect the actual barriers. Barriers in this assessment involved individual-level factors without adequately accounting for the socioeconomic and structural barriers faced by PWH and, as the items focused on personal responsibility, constraints related to the healthcare system itself may have been overlooked, such as rigid schedules, geographic accessibility, and inadequate integration of services for PWH with other comorbidities.

A high proportion of patients did not perceive themselves as being out-of-care and thus did not feel they needed active DIS intervention. These individuals either visited clinics once a year as part of their regular routine or simply forgot to follow up on their appointments. In such instances, these individuals re-engaged with minimal effort from DIS, and a reminder in the form of a text message or a phone call was sufficient. To optimize DIS activities and reach as many patients as possible who need to be re-engaged in care, it is important to minimize the DIS workload. This could be achieved by modifying the out-of-care definition to include individuals who have not accessed any HIV services for over six months, or by implementing bi-annual clinic or Department of Public Health reminders outside of DIS's scope of work. Alternatively, stratifying patients based on acuity needs might balance effectiveness and DIS workload management. Previous work has shown that using a definition of 12 months out-of-care for HIV as a starting point for DIS referral, led to substantial difficulties in locating patients given inherent lags in surveillance data and a mobile population that may be difficult to find [22].

The challenges of accurately locating patients in real-world settings can be discerned through the outcomes of DIS attempts to locate patients. Among those who re-engaged successfully at 90 days in the intention to treat analysis, DIS were not able to reach more than half. Individuals who were reported to be incarcerated, out of jurisdiction, could not be located, or those who declined to participate, still managed to successfully re-engage in care on their own. To some extent, miscategorization of patients may be attributed to the time gap between randomization and DIS activities. For instance, patients might have relocated, returned to care, or been incarcerated during this interim period before DIS outreach. However, the process can be improved by dynamic data reconciliation processes using sources like receipt of social and support services, or pharmacy databases [23, 24].

The limitations of the study should be noted. The fidelity data were based on DIS recording within an internal database, which was not always complete and could have underestimated the fidelity estimates. The lack of complete data prevented us from correlating fidelity to ARTAS components and re-engagement success. Similarly, the recorded DIS outcomes and communication types may have lacked accuracy as the quality of the DIS notes varied, due to the unstructured format of field notes.

Conclusion

This analysis highlights the challenges and insights of implementing a Data-to-Care strategy through field workers or DIS. Despite the development of a modified ARTAS model, DIS had to adopt a flexible, patient-centered approach to address the widely variable contexts they encountered. While some patients did not perceive themselves as out of care or faced minimal barriers to re-engagement, DIS identified PWH with multiple unmet needs who benefited from customized, targeted strategies. These strategies included linking patients to community-based resources, providing health literacy interventions, and enhancing patient advocacy approaches.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgements:

We would like to thank the Department of Public Health team for providing the necessary resources and support: Dustin Pawelek, Justin Mitchell, Alida Martinez, Suzanne Speers, and Heidi Jenkins.

Funding sources:

This work was supported by the Centers for Disease Control and Prevention research grant FOA PS14-001.

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The frequency of number of barriers reported by a single participant

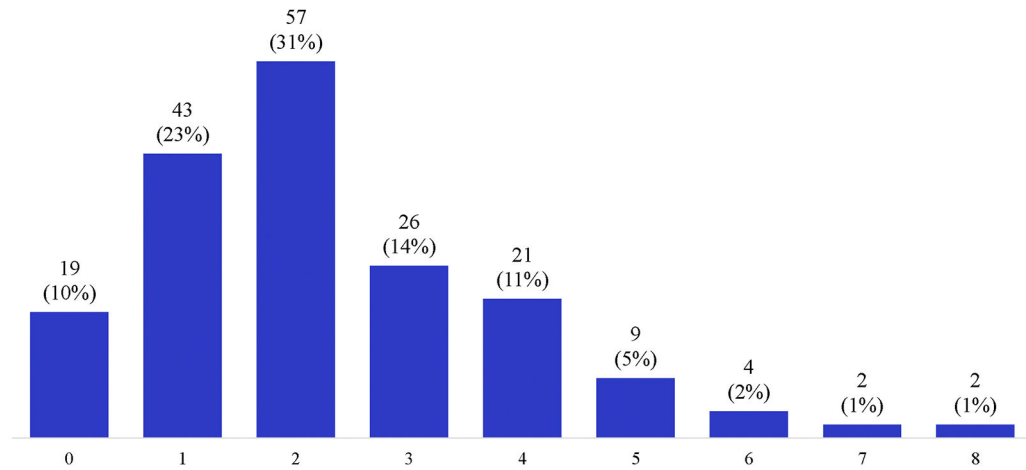


Figure 1. The frequency of number of barriers reported by a single participant (0–8) on the Barriers to Care survey

Table 1.**Anti-Retroviral Treatment and Access to Services+ Fidelity Assessment**

ARTAS+ Components	Bridgeport N=62	Hartford N=52	New Haven N=78	Total N=192
Completing Barriers to Care Survey	61 (98%)	46 (88%)	76 (97%)	183 (95%)
Conducting a strengths-based assessment	48 (77%)	39 (75%)	19 (24%)	106 (55%)
Encouraging patient to use his/her strengths, abilities, and skills to link to care	49 (79%)	39 (75%)	20 (26%)	108 (56%)
Conducting between one or more structured sessions with the patient	15 (24%)	33 (63%)	19 (24%)	67 (35%)
Conducting active, community-based case management by meeting the patient in his/her environment, whenever possible	7 (11%)	30 (58%)	18 (23%)	55 (29%)
Advocating on the patient's behalf, as needed, to link him/her to medical care and/or other needed services (e.g., MCM, EIS)	33 (53%)	33 (63%)	17 (22%)	83 (43%)
Assessed patient receptiveness to working on overcoming barriers	44 (71%)	38 (73%)	30 (38%)	112 (58%)

Legend: the table displays the frequency of the use of the Anti-Retroviral Treatment and Access to Services+ components as documented by the DIS in the Fidelity Assessment Form. For each entry, the numerator is the number of times the DIS reported completing the intervention element, and the denominator is the total number of Fidelity Assessments filled out by DIS in the respective county.

For the Barriers to Care survey, the numerator is the actual number of completed surveys.

ARTAS+=Anti-Retroviral Treatment and Access to Services+; MCM=medical case management; EIS=Early Intervention Services

Table 2.

Outcomes of Disease Intervention Specialists Attempts to Locate Participants Among Those Re-engaged in Care at 90 days

	Bridgeport (N=44)	Hartford (N=59)	New Haven (N=67)	Total (N=170)
Returned to care	32 (73%)	14 (24%)	34 (51%)	80 (47%)
Incarcerated	2 (5%)	3 (5%)	0 (0%)	5 (3%)
Resident at Extended Care Facility	1 (2%)	1 (2%)	0 (0%)	2 (1%)
Unable to locate	0 (0%)	14 (24%)	8 (12%)	22 (13%)
Located but declined to participate	2 (5%)	6 (10%)	4 (6%)	12 (7%)
Out of jurisdiction	1 (2%)	3 (5%)	4 (6%)	8 (5%)
Upcoming Visit	0 (0%)	0 (0%)	10 (15%)	10 (6%)
Returned to care without DIS intervention	3 (7%)	3 (5%)	2 (3%)	8 (5%)
Miscategorized as 'Randomizable'	3 (7%)	15 (25%)	5 (7%)	23 (14%)

Table 3.
Barriers to accessing HIV care as reported by people living with HIV in the state of Connecticut

Barriers to accessing care	Bridgeport N=61	Hartford N=46	New Haven N=76	Total N=183
Attitudes/Perceptions about HIV and health				
<i>You didn't really care about your health</i>	0 (0%)	2 (4%)	13 (17%)	14 (8%)
<i>You didn't feel sick</i>	7 (11%)	5 (11%)	39 (51%)	51 (28%)
<i>You were too sick</i>	1 (2%)	5 (11%)	1 (1%)	7 (4%)
<i>You didn't want to go</i>	5 (8%)	0 (0%)	29 (38%)	34 (19%)
Challenges with the medical facility				
<i>The clinic's hours of operation didn't match your hours</i>	9 (15%)	6 (13%)	22 (29%)	37 (20%)
<i>You were treated poorly at a clinic in the past</i>	6 (10%)	2 (4%)	2 (3%)	10 (5%)
Challenges with the medical provider				
<i>You couldn't find a provider that could speak with you in your native language</i>	1 (2%)	1 (2%)	0 (0%)	2 (1%)
<i>You don't trust doctors</i>	1 (2%)	1 (2%)	7 (9%)	9 (5%)
Time Management and Organization				
<i>You couldn't take time off of work or school</i>	21 (34%)	11 (24%)	17 (22%)	49 (27%)
<i>You forgot</i>	7 (11%)	24 (52%)	25 (33%)	56 (31%)
<i>You do not like to make appointments too far in advance</i>	3 (5%)	11 (25%)	6 (8%)	20 (11%)
Health Insurance and Access to Medical Care				
<i>You didn't have health insurance</i>	10 (16%)	5 (11%)	4 (5%)	19 (10%)
<i>You weren't sure where to go to get medical care</i>	0 (0%)	2 (4%)	2 (3%)	4 (2%)
Social and Supportive Services				
<i>You didn't have child care</i>	2 (3%)	0 (0%)	0 (0%)	2 (1%)
<i>You didn't have transportation to medical care</i>	13 (21%)	2 (4%)	11 (14%)	26 (14%)
<i>You couldn't pay for medical care</i>	4 (7%)	3 (7%)	1 (1%)	8 (4%)
<i>You didn't want to be seen at a clinic</i>	1 (2%)	3 (7%)	1 (1%)	5 (3%)
<i>You didn't want your health care provider to be mad at you for not taking your meds</i>	3 (5%)	2 (4%)	2 (3%)	7 (4%)
<i>You were too depressed</i>	1 (2%)	0 (0%)	1 (1%)	2 (1%)
<i>You were too drunk or high</i>	2 (3%)	0 (0%)	0 (0%)	2 (1%)
<i>Any other reasons you have not received HIV medical care?</i>	31 (51%)	2 (4%)	21 (28%)	54 (30%)