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ORIGINAL PAPER

Connecting Corrections and HIV Care: Building a Care Coordination Program for Recently Incarcerated Persons Living with HIV in Virginia

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Abstract
Incarcerated individuals are disproportionately affected by HIV and often experience risk factors associated with poor maintenance of HIV care upon release. Therefore, the transition period from incarceration to the community is a particularly critical time for persons living with HIV to ensure continuity of care and treatment. By building relationships with Department of Corrections staff and community partners, the Virginia Department of Health developed a program to link recently incarcerated persons living with HIV to care and treatment immediately upon release from correctional facilities across Virginia. Findings show that clients served by the program have better outcomes along the HIV continuum of care than the overall population living with HIV in Virginia. This paper describes the development, implementation and health outcomes of the Care Coordination program for recently incarcerated persons living with HIV in Virginia.

Keywords HIV · Care coordination · Incarceration · HIV continuum of care

Background

The HIV continuum of care, which has been utilized as a framework for assessing health outcomes for persons living with HIV (PLWH), provides information on linkage and retention in medical care, receipt of medications and rates of viral suppression for PLWH [1]. Formerly incarcerated PLWH have worse outcomes on the continuum, compared with the overall population of PLWH [2]. Persons who are incarcerated often experience risk factors associated with poor maintenance of HIV care upon release, including mental illness, homelessness, substance abuse, stigma and meeting basic needs, such as finding housing and jobs [3, 4]. Iroh and colleagues found, in a review of the literature, that retention and viral suppression rates were lower among PLWH post-release than prior to or during incarceration, underscoring the importance of connecting PLWH with care and services immediately upon release [2]. Re-incarceration and short stays in correctional facilities are associated with decreases in viral suppression post-release, especially for particularly vulnerable populations such as injection drug users (IDUs) [5]. A 2014 study of 497 re-incarcerated Connecticut inmates found that viral suppression rates decreased from 52 to 31% in the period between initial release and re-incarceration [6]. These findings highlight the need for programs that provide access to medical care and HIV medications for PLWH who are re-entering the community from incarceration. Transitionary periods for incarcerated PLWH are critical in determining the course of post-release HIV care [7].

Historical Program Supporting PLWH Post-Release

In 2000, the Virginia Department of Health (VDH) began collaborating with the state Department of Corrections (DOC) to support access to HIV-related medications for PLWH upon release from prison. VDH's AIDS Drug Assistance Program (ADAP) is responsible for ensuring access to HIV-related medications for eligible persons and has a structure in place for distribution of medications statewide. This initial collaboration was designated the "Seamless Transition Program", with the goal of providing uninterrupted access to medications upon release for PLWH who received HIV treatment while incarcerated. Personnel from the DOC scheduled a medical appointment with an HIV medical

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provider near the area where the inmate was expected to be released and DOC also provided a 30-day supply of HIV medications upon release. DOC medical staff faxed a treatment summary, which included a medication list to ADAP, along with other discharge information, including the anticipated address to which the released inmate was expected to reside. ADAP staff at VDH reviewed the documentation and authorized an additional 30-day supply of medications to be dispensed through its Direct ADAP service and picked up at the local health department that was closest to where the client would be residing. ADAP provides medications to PLWH who have annual household incomes below an established Federal Poverty Level (FPL) threshold and who are either uninsured or require assistance with insurance costs [8]. Many persons released from incarceration have no other medication coverage or current income, and are therefore eligible for ADAP.

Over time, the Seamless Transition Program developed into a "passive" referral-based system, relying upon DOC staff to identify eligible inmates being scheduled for release and fax the needed paperwork to ADAP. Clients were responsible for identifying and accessing any additional resources they needed when re-entering their communities and no additional follow-up occurred until the client presented at their medication distribution site to pick up their medications and complete ADAP eligibility determination. Due to the more passive structure of the Seamless Transition Program, it is estimated that clients presented at their assigned medication pick-up site within 60 days of release about 40% of the time [9]. Those clients received no additional support with accessing medications or medical care until they presented at a medication pick-up site or medical provider, often several months after DOC release. Information provided to clients and the quality of eligibility determination varied at local pick-up sites. Although staff received periodic guidance from ADAP, funding for the positions and consistent contact by ADAP was not provided. Program estimates indicate that clients engaged in medical care within 90 days of release about 50% of the time, and about 65% of those clients were engaged in care after 12 months [9]. Viral suppression and retention in care of these clients were not routinely monitored.

New Care Coordination Program for PLWH Post-Release

In 2011, through newly awarded federal funding from the Health Resources and Services Administration (HRSA) Special Projects of National Significance (SPNS) Systems Linkages and Access to Care initiative targeting linkage and retention in HIV care for hard-to-reach populations, VDH redesigned the existing program to create a more active referral process to assist recently incarcerated PLWH with access to medications, HIV-related treatment and support of long-term engagement in care. The newly developed Care Coordination Program (CCP) remained under the management of the state's ADAP program at VDH to ensure immediate and uninterrupted access to medications and expedited enrollment into the state's HIV medication assistance program upon release. The CCP was staffed by a small team based in the state health department's central office in Richmond, Virginia and served clients statewide. This paper describes how the CCP was developed through fostering key relationships between VDH and DOC and reports the health outcomes of PLWH served by the program.

Methods

Using the Collaborative Learning Model: A Relationship-First Approach

VDH conceptualized a new program that would provide greater consistency of the intervention to clients, actively assist clients in obtaining medications, quickly link clients to medical care and support services after release from incarceration, and support retention in care for at least 1-year post-release. Through the SPNS Systems Linkages Initiative, the newly envisioned CCP was one of four interventions developed to improve health outcomes of PLWH. Each strategy implemented in Virginia focused on specific systems and more importantly, on the relationships between different parties within these systems: Disease Intervention Specialists and the process for linking initially diagnosed PLWH to care; patient navigation for newly diagnosed and lost to care PLWH; mental health assessment and service provision; and Care Coordination for linking previously incarcerated PLWH to medication access and treatment. VDH used the Institute for Healthcare Improvement's (IHI) Collaborative Learning Model to conceptualize, develop, implement and evaluate the interventions. The Collaborative Learning Model is an organized structure involving "numerous stakeholders developing, implementing and evaluating a process using small tests of change over time to design, develop and implement systems-level strategies" [10]. The strategies often intersected staff and contractor roles, referral protocols and client populations. The Collaborative Learning Model is designed to ensure that key stakeholders are brought into the process early and kept engaged by including them in collaborative meetings throughout the project called "Learning Sessions". To accomplish this, a relationship-first approach was adopted by VDH, placing high value on the relationships formed among all involved in the referral and coordination processes for all interventions.

The beginning of the evolution of the CCP from the previously established Seamless Transition Program coincided with staff transitions within Virginia's ADAP and the DOC, as well as the hiring of the initial Care Coordinators (CCs). This provided the opportunity to establish new relationships as well as re-examine the utility of forms used, procedures followed and staff involved in the process. Initially, one DOC medical staff was included in the initiative's Learning Collaborative to ensure the context of their services was understood within the state's complex HIV service network, and to actively participate in the development and testing of initial protocols. Their involvement at the beginning of the process increased their understanding of the rationale and expected outcomes of the CCP, and empowered them to adjust the protocol during testing while understanding the impact of adjustments to other systems and outcomes.

Initial communication between VDH and DOC was focused solely on relationship-building, rather than protocols or procedures. One VDH CC initiated face-to-face meetings with the DOC Epidemiology Nurse, traveling to meet her at her office. Initial meetings were brief and informal, and were aimed at learning about DOC systems and culture, discussing shared experiences of managing high work volume, negotiating within a bureaucracy, and gaining a general understanding of each other's role in managing clients. Specific work on developing written referral procedures and forms was delayed to allow time to establish a working relationship that included building trust.

Due to the high level of coordination needed to successfully implement the CCP protocol, involvement of additional staff within both DOC and ADAP was needed to impact the referral and service provision systems of both. DOC referrals to the CCP relied upon institutional medical providers, nursing supervisors, nurses overseeing discharge paperwork, re-entry specialists preparing inmates for release, and an Epidemiology Nurse at DOC headquarters who tracked treatment, discharge planning and release dates for HIV-positive inmates. Several of these positions experienced staff turnover on a frequent basis. CCP staff also needed to interact closely with multiple ADAP staff, including pharmacists, eligibility determination specialists and program managers.

The Epidemiology Nurse facilitated contact between the VDH CCs and other key DOC staff, including discharge nurses and medical team staff. The CC, with the Epidemiology Nurse's support, was able to frequently communicated with a variety of DOC staff, incorporated direct feedback about the continuously developing CCP protocol, including forms used and referral procedures, and even attended team meetings with DOC staff at their invitation. She was invited to attend re-entry council meetings that discussed resources available to released inmates and provided information about the CCP. She assisted DOC staff with completing paperwork related to referrals to the CCP and made herself available to DOC by widely circulating her direct telephone number. As a result of investing time and effort in developing and sustaining a trusting and responsive relationship with key DOC staff, the CCs were able to immediately address any concerns or challenges that arose and collaborate on developing and implementing CCP procedures and forms. Improved relationships and connections between VDH and DOC staff facilitated improvements in consistent and timely referrals from DOC to the program, as shown by increases in the number of clients referred by DOC facility each month.

Program Staffing

Initially, VDH created a centralized team of two CCs to implement the intervention. The VDH CCs were co-located in the same office as the ADAP Eligibility Team and placed under the supervision of the manager of ADAP operations. The CCs worked closely with ADAP Eligibility Team members to complete expedited ADAP applications for referred CCP clients, usually within 72 h. Through the CCP, CCs contacted clients by telephone immediately upon release and maintained contact with CCP clients and their case managers for up to 18 months. CCs managed clients statewide and facilitated referrals to medical clinics, community-based case managers, patient navigators, HIV services organizations and other services that meet clients' identified needs. Frequent communication continued between the CCs, clients and referring agencies during the 12–18 month intervention to ensure client issues were resolved and to proactively retain clients in care as they experienced challenges re-entering their communities.

The CCs participated in all ADAP team meetings, educating ADAP staff about the CCP protocol. The CCs and ADAP staff jointly attended community health and resource fairs to promote both ADAP and CCP services. Through establishing these relationships and contributing to ADAP as a part of the ADAP team, the CCs were able to monitor and ensure expedited completion of ADAP eligibility documentation, which eliminated any delays in providing medications to CCP clients and was able to facilitate service coordination prior to or immediately after release. The CCs also met frequently with the coordinator of another program focused on incarcerated PLWH, funded through VDH's HIV Prevention Unit. This program, the Comprehensive HIV/AIDS Resources and Linkages for Inmates (CHARLI) program funds community-based health organizations which help previously incarcerated PLWH access HIV-related resources, excluding direct medication access. The CCP and CHARLI programs operated concurrently and served some of the same clients who need medication and other support services.

Improved Procedures and Protocols

Passive referrals received through the previous Seamless Transition Program were monitored by an ADAP staff member and comprised a small percentage of the person's workload. Referrals were inconsistent and often incomplete. The client experience with enrolling in ADAP varied and was dependent on the medication distribution site used. Coinciding with the receipt of SPNS funding to develop the CCP and the hiring of the initial VDH CCs, ADAP implemented statewide centralization of the ADAP eligibility determination and enrollment process. Centralization provided a consistent experience to clients regardless of where they lived in the state, and the quality of eligibility data and time for processing greatly improved. During the SPNS initiative, VDH formalized protocols and procedures for the CCP including updated referral and consent forms, medication lists, and client contact forms. The CCP Strategy Manual provides a comprehensive outline of the protocol and forms [11]. Additionally, data entry and reporting was streamlined and process outcomes, including client contacts and services, were routinely recorded in a new CCP database. Monthly program reports were prepared and presented to ADAP leadership which included monthly referrals, regional distribution, insurance coverage, and medication pick-up rates of CCP clients.

After establishing and strengthening the relationships and protocols with the DOC and the centralized ADAP Eligibility Team, the CCP moved forward with expanding services to regional and local jails. Virginia's jails operate under the direction of Sheriffs' offices and fall outside DOC's jurisdiction. Each jail follows locally developed daily operations and staffing patterns, and funding for medical care and medications varies. The VDH CCs approached service expansion to jails with the same relationship-first concepts that were successful with DOC including first focusing on establishing relationships and trust before launching into protocol and procedure development. CCs initiated multiple "cold calls" to Sheriffs' offices, providing general information about the CCP and their role and had success in setting up meetings with some jails. They traveled to the offices for face-to-face meetings, reducing inconvenience for Sheriffs and their staff. As the CCs were able to share successes from the DOC process and gain increased interest from the jails, they progressed with multiple on-site meetings with participating jails and collaboratively established referral procedures and forms tailored for each facility's unique structure. Variations were found in how HIV medication prescriptions were provided, how jail staff were able to be involved in the referral process, and what resources were available to provide a supply of HIV medications to clients upon release. For example, some facilities relied upon paper prescriptions which required an accommodation by the state's Central Pharmacy. Some jails had onsite medical staff, while others relied exclusively on contracted staff that were periodically available. Some jails were able to provide 3 days of medications upon release, others were able to provide 7 days, which was more ideal to allow reasonable coordination of services and linkage to consistent medications upon release, and some were not able to provide any medications upon release.

Sustaining the relationships built with correctional and ADAP partners was critical to maintaining an active system of referrals and keeping the role of the CCs prominent in the process. The CCP team, which grew due to increasing client volume, initiated phone calls to correctional facility partners to check in and address any issues that arise in the early stages. CC staff met face-to-face with the DOC Epidemiology Nurse at least quarterly and attend DOC team meetings during the year. They continued to participate in monthly conference calls with the medical contractor for the jails, and provided program updates to correctional staff to communicate the successes of the CCP. In-person protocol trainings were provided by CCs when facilities experienced staff turnover and feedback from frequent communication is used to periodically update procedures and forms. Additionally, VDH expanded the formal scope of one CC to serve as a DOC and community liaison. This CC was responsible for attending local, regional and statewide community meetings and traveling across the state for face-to-face meetings and relationship building with current and prospective correctional and community partners. Focusing on new and current partners is critical as staff turnover at DOC was a challenge for the previous program.

The CCP remains co-located within Virginia ADAP, and CCs participate in all ADAP team meetings, trainings and staff development activities. The relationship-first approach to the intervention resulted in feelings of ownership in the process as formal protocols, referral procedures and forms were established. CCP protocols, procedures, and forms serve as tools to clarify agreed-upon expectations and guide a consistent, effective and collaborative process, rather than pushing outside requirements that must be followed. The development of the CCP protocol was essential in establishing tested intervention methods and measurable outcomes, and is well-documented in its published CCP Strategy Manual [11]. However, the efforts to first prioritize relationships between CCs and key community and correctional partners prior to implementing the protocol were integral to success.

Results

The positive impact of the CCP is evidenced by substantial improvements in both short and long-term health outcomes among recently incarcerated PLWH. A total of 94 PLWH were released from correctional facilities and served by the

CCP in Calendar Year (CY) 2014 in Virginia. Data presented in this article are for Calendar Year 2014, the most recent year of program implementation for which health outcome data are available. Of eligible CCP clients served during this time period (n = 88), 81% picked up their HIV medications within 60 days of their release date, and 89% of eligible CCP clients picked up their medications within 90 days of being released, representing substantial improvements in immediate access to medications among the recently incarcerated, compared to the estimated pick-up rates of 40% for 60 days and 50% for 90 days, respectively, in the Seamless Program (See Fig. 1). To be included in medication pick-up outcomes, clients must have been eligible and approved for the CCP. Medication pick-up dates were obtained through an internal database at VDH that contains data on medications picked up at local health departments across the state. The CCP filled and dispensed medications exclusively through these sites. As previously discussed, data collection for the previous program was not conducted on a client-level basis. Data collection under the new program was improved through enhancements to the internal client-level ADAP database and use of local health department pharmacy data.

Furthermore, the impact of CCP on longer term health outcomes is notable. Of the 94 clients served by the CCP in CY 2014, 95% were linked to HIV care within 90 days of their release from a correctional facility, and 97% had evidence of HIV care within the 12 months following release. Furthermore, 94% were retained in care, and 68% were virally suppressed in the 12 months following their release. Retention in care was based on evidence of two or more HIV care markers (HIV medical visit, lab, or prescription) within the 12-month post-release time period that were at least 60 days apart. Virologic suppression was measured as the last viral load within the 12-month post-release time period that was < 200 copies/mL. Outcomes among those clients who accessed additional services, such as the previously mentioned CHARLI program, were even higher, illustrating the importance of focused resources and coordination efforts for this population. Among CCP clients served during CY 2014 who also received CHARLI services during this time period (n = 59), 100% were linked to care within 90 days of release, 100% were retained in care 12 months post-release, and 75% were virally suppressed 12 months post-release. Furthermore, compared with the entire population living with HIV in Virginia, these results are even more compelling. In Virginia, 81% of persons newly diagnosed in 2014 were linked to care within 90 days of their HIV diagnosis, and among all PLWH in Virginia as of December 31, 2014, only 57% had evidence of HIV care, 42% were retained in care, and 38% were virally suppressed in 2014 (See Fig. 2). The positive quantitative health outcomes of clients served by the CCP reflect the value of the Collaborative Learning Model in the program development phase. Relationships built during the program's tenure promoted a foundation for program growth to new correctional settings across the state and long-term sustainability.

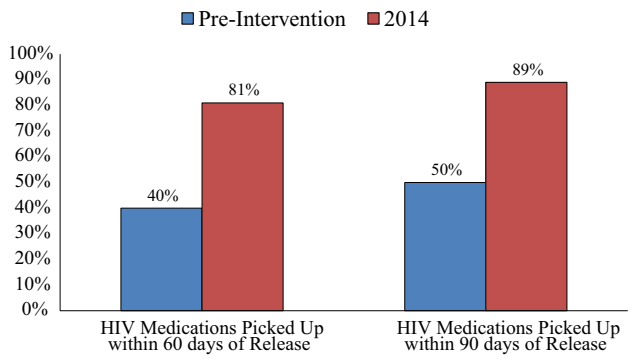

Fig. 1 Medication pick up rates among recently incarcerated persons pre and post-care care coordination intervention (n = 88) (to be included in medication pick up outcomes, clients must have been eligible and approved for the Care Coordination Program. Pre-intervention figures are estimates based on previously available program data)

Discussion

Overall, the development and expansion of the CCP promoted positive health outcomes, communication between state agencies, and an integrated approach to serving recently incarcerated PLWH during a critical transitionary period from correctional settings.

Several study limitations are important to note. First, very limited information on the characteristics and health outcomes of clients served under the previous Seamless Transition Program was available for analysis, as data were previously collected and analyzed at an aggregate level for this population. Therefore, demographic characteristics, HIV risk factors, and other trends cannot be directly compared to the population served under the new CCP intervention. To address this, VDH developed a comprehensive client-level CCP data collection system to ensure effective evaluation of the program. Additionally, use of a pre/post-intervention study design, rather than a more rigorous randomized control trial, does not account for other trends that may have contributed to improvements in linkage and retention for the recently incarcerated population during this time period. For example, factors that may have affected HIV care outcomes among this population may include a rise in the available linkage and retention resources across the state, such as patient navigators and community health workers, the CHARLI program, and increased access to comprehensive health insurance as a result of the Patient Protection and Affordable Care Act, creating a potentially synergistic effect on program outcomes. Furthermore, although important to

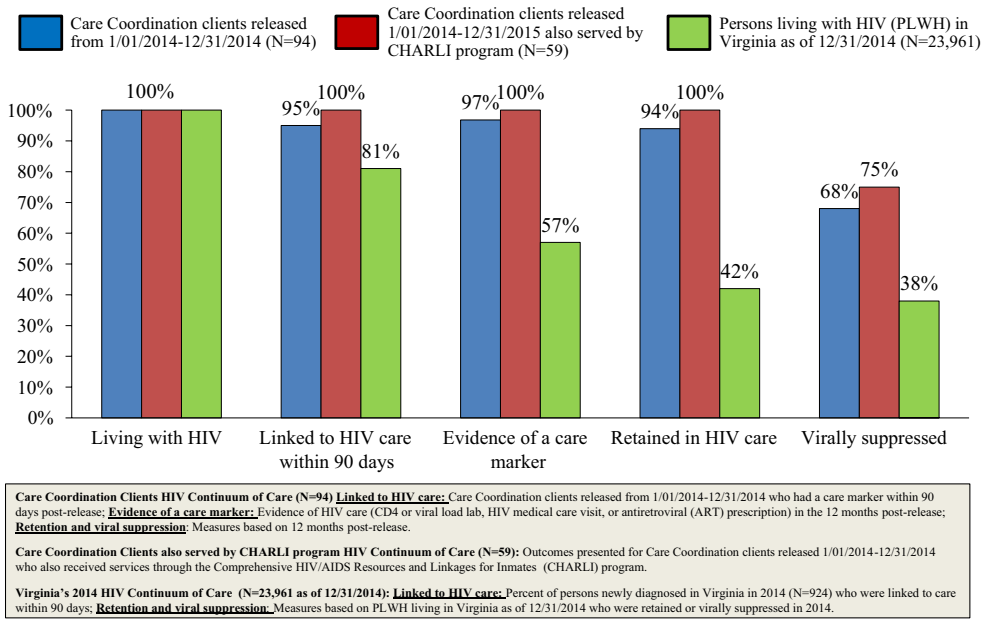

Fig. 2 HIV continuum of care: care coordination clients versus Virginia PLWH

note differences in subpopulations among those who were incarcerated in prisons versus jails, this paper focused on the previously incarcerated HIV-positive population as a whole rather than differences in outcomes between these groups. Additionally, the number of persons enrolled in the intervention from jails was not sufficient for independent analysis. Further analysis of clients by correctional facility type should be explored.

The substantial increases in medication pick-up rates, as well as linkage and retention rates, demonstrate the strength of the CCP referral process and the importance of identifying and engaging with clients as close to their discharge date as possible to ensure immediate access to medications, medical care and other resources. Consistent with findings from other studies on this population, results from the SPNS initiative demonstrate the importance of connecting recently incarcerated PLWH to care and services within a short time frame upon release from a correctional facility. Investing in programs that focus on this critical transition period may facilitate improved health outcomes for this population.

Findings from this project are also consistent with the discussion presented by Damschroder et al., in which they describe the importance of "social capital" in successfully implementing interventions across organizations. Strong collective networks and relationships, a shared vision, and information sharing are all critical components of "social capital" that can facilitate successful implementation of an intervention [12]. Consistent with these principles, VDH found that the initial and ongoing investment in relationships with referral sources provided a blueprint for the establishment of common goals across agencies and programs. Informal and formal communications and meetings and face-to-face opportunities were essential. A consistently applied protocol was critical to the process, but relied upon the human element to succeed. The relationship-first approach was the foundation for developing a mutually agreeable process and sustaining an effective system. Other jurisdictions interested in improving health outcomes of incarcerated PLWH should consider similar approaches to partnering with correctional facilities. Findings from this project demonstrate that use of a relationship-first approach, combined with a streamlined intervention protocol, yielded substantial immediate and long-term health outcomes for PLWH transitioning from correctional settings.

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Compliance with Ethical Standards

Conflict of interest The above listed authors declare no conflicts of interest.

Ethical Approval This article does not contain any studies with human participants or animals performed by any of the authors.

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