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Pharmacy-Based Data to Care: Evaluation of a Public Health Initiative to Support HIV Medication Re-Initiation

Julia C. Dombrowski, MD, MPH^{1,2,3}, Teah Hoopes, MPH³, Robert Loeffelbein, PharmD⁴, Alexa Muccioli, PharmD, MBA, AAHIVP⁵, Emily Rowlinson, PhD², Richard Lechtenberg, MPH, CPH³, Christine McKay, LICSW⁶, Michal Blum, MPH³, Suzanne Hardaswick, MS⁷, Matthew R. Golden, MD, MPH^{1,2,3}

¹Department of Medicine, University of Washington, Seattle, WA

²Department of Epidemiology, University of Washington, Seattle, WA

³Public Health – Seattle & King County HIV/STD Program, Seattle, WA

⁴Madison Clinic, University of Washington, Seattle, WA

⁵MedCart Specialty Pharmacy with Albertsons Specialty Care, Livonia, MI

⁶Social Work Department, Harborview Medical Center, Seattle, WA

⁷Office of Infectious Disease, Washington State Department of Health, Tumwater, WA

Abstract

In a pharmacy-based Data to Care project in Washington during August 2019-December 2021, two pharmacies identified 762 cases of persons who were 35–65 days late refilling antiretroviral medications; 119 (16%) case investigations led to contact with a person who had discontinued treatment, 43 (36%) of whom restarted medications after outreach.

SUMMARY

Incorporating pharmacies into Data to Care work in Washington state incrementally improved the health department's ability to reach people who had discontinued HIV medications and assist them with restarting treatment.

Keywords

Data to Care; antiretroviral treatment adherence; pharmacy; retention in care; viral suppression

Corresponding Author: Julia C. Dombrowski, MD, MPH, University of Washington, 325 9th Ave Box 359777, Seattle, WA 98104, jdombrow@uw.edu, Fax: 206-744-4151.

POTENTIAL CONFLICTS OF INTEREST

JCD has conducted research unrelated to this work with supplies donated by Hologic and Mayne Pharmaceuticals. MRG has conducted research unrelated to this work with supplies from Hologic and SpeeDx. All other authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

NOTE

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INTRODUCTION

Ensuring that all people with HIV (PWH) are engaged in HIV treatment is a pillar of the federal *Ending the HIV Epidemic* initiative.¹ The U.S. Centers for Disease Control and Prevention (CDC) suggests that health departments receiving HIV prevention funding consider implementing Data to Care (D2C) strategies, which use surveillance data to identify PWH who are out of HIV care and assist them with re-engaging in treatment.² D2C approaches vary widely, but almost all encounter limitations in using HIV surveillance data to accurately identify people who are out of care.^{3–8} This is primarily due to two factors: most people without recently reported HIV laboratory results are not actually out of care but have migrated out of the area,⁸ and efforts to contact out-of-care PWH are often unsuccessful due in part to missing or outdated location information.^{3,5} Public Health – Seattle & King County (PHSKC) launched a countywide D2C program in 2010, but the program evaluation showed no impact on viral suppression.³ Likewise, a randomized trial of a D2C intervention in four cities showed no impact on viral suppression.⁷

Using pharmacy data may surmount the limitations of HIV surveillance data by identifying PWH earlier in the course of disengagement from treatment.⁹ However, to date pharmacies have largely been left out of public health efforts to improve the HIV care continuum.¹⁰ The Link-Up Rx program in Detroit, Michigan¹¹ is a notable exception, but to our knowledge, the outcomes of pharmacy-based D2C have not been described in the peer-reviewed literature. In 2019, the Washington State Department of Health (DOH) and PHSKC began work with two pharmacies on a CDC-funded demonstration project of pharmacy-based D2C. The participating pharmacies were a specialty pharmacy located in the Madison (HIV) Clinic at Harborview Medical Center, the largest Ryan White-funded clinic in WA state, and Safeway-Albertsons retail pharmacies in King County.

MATERIALS AND METHODS

Description of the Demonstration Project

The pharmacy-based D2C program included two components. In the first component (pharmacy-driven outreach), pharmacy staff ran a monthly report identifying patients who had filled an antiretroviral prescription indicative of antiretroviral therapy (ART; excluding emtricitabine-tenofovir monotherapy because this indicates HIV pre-exposure prophylaxis) in the prior year and were 14–28 days overdue picking up a refill based on the date of last fill and dispensed supply. The pharmacy staff attempted to contact patients to prompt them to pick up medications and notified the prescribing provider. In the second component (health department outreach), the pharmacies ran a monthly report that identified patients who were 35–65 days overdue for medication pick-up and securely transmitted a report to a health department disease intervention specialist (DIS). The report included data identifying the client and prescribing provider, contact information, the medications prescribed, and the dates of medication pick-up.

The DIS investigated cases referred from pharmacies using D2C program procedures detailed elsewhere.^{3,4,8,12} If the investigation revealed that a patient had died, moved out of state, or transferred services to a different pharmacy, the case was closed without further

contact. For cases unresolved in the initial investigation, DIS notified the client's medical case manager (if the information was available in the review of the electronic health record or via communication with clinic support staff) and attempted to reach the client by phone. DIS attempted 3–4 calls to each person over 2–4-weeks. The DIS introduced themselves, confirmed the client's identity, and described the reason for their call. For clients who agreed to further conversation, the DIS inquired about the late medication pick-up and ascertained whether the patient had discontinued ART and/or run out of medication. Throughout the investigation, DIS determined if a client discontinued medication based on reports from the client, the client's case manager, pharmacist, or medical records. The DIS assessed clients' willingness to pick up medications and offered assistance arranging medication pick-ups, scheduling clinic appointments, brief counseling, and connection to services. DIS continued communications with clients until the DIS confirmed that the client picked up medications or the client declined further assistance or stopped responding. Medication pick-ups were confirmed by electronic health records, case manager or pharmacist report, or client self-report of prescription transfer to another pharmacy.

Ethical and Legal Considerations

The WA DOH and PHSKC consulted with legal experts about information sharing for this project, as did the involved pharmacies. The process was approved by the State Health Officer and State Epidemiologist, the PHSKC Attorney's Office, UW Medicine Compliance, and the legal authorities for the retail pharmacy.

Program Evaluation

This analysis covers the project outcomes for the second component of the intervention (health department outreach) during August 2019-December 2021. Data to assess the first component (pharmacy-driven outreach) were not available because pharmacy partners did not systematically record data for this demonstration project. We evaluated the outcomes of DIS case investigation and contact attempts, and separately, ART status during the investigation and intervention period. The case investigation period was defined as the date the prescription refill was due to the date the case was closed. DIS tracked client-reported reasons for the late medication pick-up and whether medication pick-ups happened before or after DIS intervention. We obtained detailed sociodemographic data through a case match between the PHSKC HIV relinkage database and the Enhanced HIV/AIDS Reporting System. We conducted a descriptive analysis to quantify and characterize cases identified; the outcomes of DIS investigations and contact attempts, ART status, and medication pick-up among persons who had discontinued ART. We assessed the number of individuals identified who had not been previously identified through other D2C data sources, including data from HIV surveillance, emergency room visits, jail booking, partner services, and Sexual Health Clinic visits.

RESULTS

The pharmacies referred 903 cases to the health department; 64 were duplicates and 77 were not investigated, primarily due to staff diversion during the COVID-19 pandemic. The remaining 762 investigated cases represented 591 persons, 249 (42%) of whom had not been

identified through another D2C information source. The Ryan White pharmacy referred 494 (65%) cases and the retail pharmacy referred 268 (35%) cases. Table 1 summarizes the characteristics of the persons identified.

Outcomes of the investigated cases are summarized in Figure 1. Of 762 total cases, 119 (16%) represented PWH confirmed to have discontinued ART, among whom 43 (36%) picked up ART after DIS outreach. Thus, 6% of cases DIS investigated led to a person who had stopped ART and reinitiated treatment following outreach. Persons successfully contacted by DIS who had not discontinued medications commonly reported having extra medications available and not needing the refill that triggered the referral to the health department.

Referrals from the Ryan White pharmacy accounted for 68% of eligible cases (386 of 570), 75% of cases in which the DIS interacted with the client (88 of 118), 76% of confirmed medication discontinuations (91 of 119), and 88% of cases in which the client picked up medication after the DIS intervention began (38 of 43). Comparing outcomes from the Ryan White and retail pharmacies, 38 (9.8%) of 386 eligible patients in the Ryan White pharmacy and 5 (2.7%) of 184 eligible patients in the retail pharmacies reinitiated ART following referral to DIS (chi-square test $p=0.003$).

DISCUSSION

In summary, the two pharmacies identified 762 instances of late medication pick-ups among 591 PWH over 29 months. Only 16% of cases investigated led to identification of a person who had truly discontinued HIV treatment, and 36% of those persons picked up ART after DIS intervention. Although pharmacy data are conceptually appealing as a source of identifying PWH who have discontinued ART more rapidly and accurately than public health surveillance data, that was not the case in our project. The drop-off in yield of pharmacy-based records was remarkably similar to our group's previously reported experiences with D2C.^{3,4,6} The finding that many people who are late picking up refills have not actually discontinued ART is analogous to the finding that many people who appear to have dropped out of care based on HIV surveillance and clinic data have actually moved away or transferred care. In the pharmacy D2C program, less than half of people who had discontinued treatment picked up medications after DIS intervention, also comparable to the proportion observed with other D2C work.^{3,4,6} PWH who have short treatment interruptions may benefit from assistance picking up medication refills, but PWH who are more persistently off treatment likely require more intensive and continuous intervention to sustain treatment, such as low-barrier HIV care.¹³

The relatively low impact of our intervention may, in part, reflect the success of pharmacist-led interventions in promoting medication pick-ups, and we may have underestimated the intervention's effect if the project improved what the pharmacies did prior to DIS referral. Furthermore, our results have uncertain generalizability. The context of HIV care and medication provision differs throughout the country, and extensive D2C work occurred in Washington state prior to this project. In areas with nascent D2C programs, pharmacy data might add more to D2C efforts than we observed, though that is not known, and many

PWH in any geographic area likely have a stockpile of extra medications. Although the analysis period ended in 2021, we do not have reason to believe the results would differ if the program had been implemented more recently, and our findings remain relevant in the absence of other published results of pharmacy-based D2C.

In this demonstration project of pharmacy-based D2C, pharmacy records had limited utility for identifying PWH who have discontinued HIV treatment, but incrementally improved D2C by reaching a population of PWH not identified through other sources. Our analysis did not include assessment of the characteristics of PWH identified through the pharmacy demonstration project compared to other D2C data sources beyond the number of unique people identified. This is an important area for future work. Based on these findings, our health department continued pharmacy-based D2C efforts with the Ryan White pharmacy and switched the model used in retail pharmacies to allow pharmacists to refer individual cases to DIS as needed.

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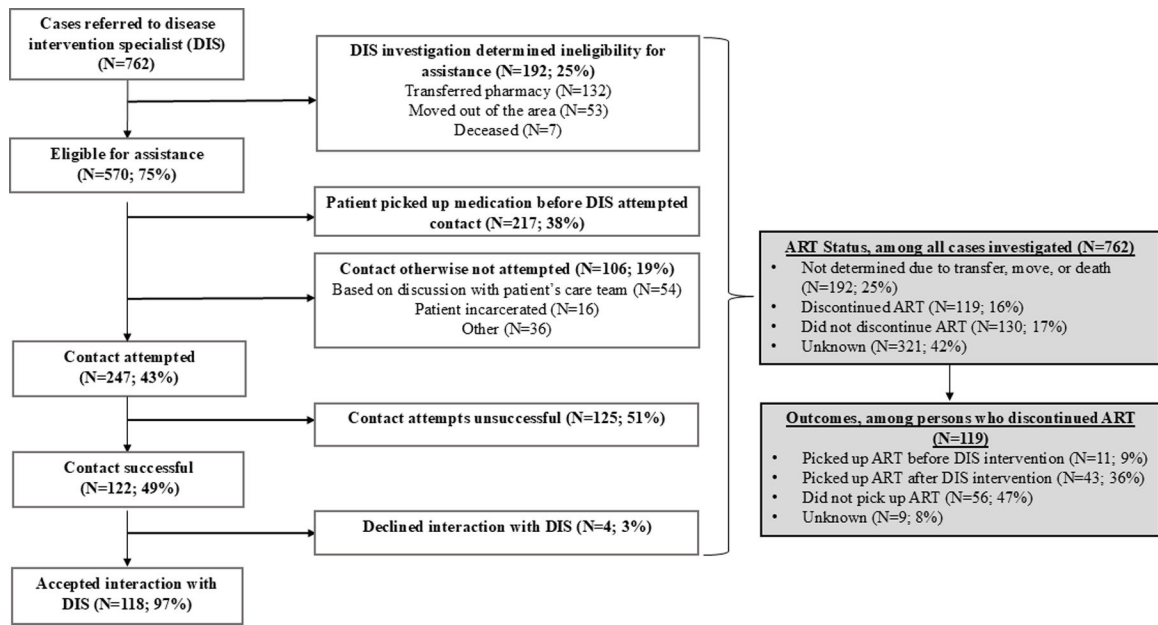


FIGURE.
Pharmacy-Based Data to Care Outcomes among Cases Identified by Pharmacies in the Demonstration Project (N=762)

Table 1:
 Characteristics of Persons with HIV Identified by Pharmacies During a Data to Care Demonstration Project in Washington State,¹ August 2019 – December 2021 (N=591)

	N	(%)
Gender		
Cisgender Woman	107	18
Cisgender Man	459	78
Transgender or Gender Diverse	11	2
Missing	14	2
Race & Ethnicity		
American Indian/Alaska Native (Non-Hispanic)	8	1
Asian (Non-Hispanic)	22	4
Black (Non-Hispanic)	137	23
Native Hawaiian/PI (Non-Hispanic)	3	1
White (Non-Hispanic)	261	44
Multi-Race (Non-Hispanic)	54	9
Hispanic/Latinx	94	16
Missing	12	2
Area of Residence		
King County (includes Seattle)	395	67
Pierce County (includes Tacoma)	35	6
Snohomish County	22	4
Clark County	12	2
Spokane County	9	2
Other Washington State counties (<10 cases each)	47	8
Out of State	37	6
Missing	34	6
Number of Referrals During Project Period		
One	456	77
Two	109	18
Three or more	26	5

¹Reported as being 35–65 days late picking up antiretroviral medication refills