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ORIGINAL PAPER

Examining Retention in HIV Care and HIV Suppression on Housing Services Intake at a Washington, DC Community Based Organization

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Abstract

In Washington, DC, 2% of residents are living with HIV, with 15.3% of them experiencing homelessness. Additionally, over half of DC-area renters are paying over 30% of their income for housing. The primary objective of this study was to describe HIV outcomes at initial intake at Housing Counseling Services (HCS). This retrospective study included adults with HIV completing HCS intake between 2015 and 2018 and linked HCS data with DC Department of Health (DOH) HIV/AIDS, Hepatitis, STD, and TB Administration (HAHSTA) surveillance data. Proportions of individuals with retention in care (RIC) and viral suppression (VS) were compared across client subgroups using chi-square or rank sum tests. The sample of 734 participants was mostly male (67%), Non-Hispanic Black (89%), had MSM as the HIV transmission risk factor (44%) and had rental housing (60%). Most participants (634/734, 86%) were RIC at HCS intake. A majority of participants (477/621 or 77%) had VS at intake. Older age was associated with VS ($p = 0.0007$). Homeless individuals (with intake from the street) were less likely to be VS (4.8% vs. 11.1%, $p < 0.0045$). Our results suggest that PWH who have unstable housing or who are homeless may need additional support services for maintaining RIC and VS, as the proportion meeting those benchmarks was not at goal when they sought services at HCS.

Keywords Homelessness · HIV · Viral suppression · Retention in care

Introduction

People with HIV (PWH) are disproportionately affected by homelessness. This group has a rate of homelessness at least three times greater than the general population [1], with a high number of PWH counted among the homeless by the U.S. Department of Housing and Urban Development (HUD) [2]. This may be partly due to the financial costs of healthcare or unemployment as a result of HIV status [3]. Additionally, substance abuse and mental health disorders have been associated with homelessness, with mental illness leading to homelessness or homelessness leading to substance use and perpetuated emotional problems [4, 5]. A lack of stable housing, financial instability, and behavioral health conditions may interfere with HIV care and cause people who are homeless with HIV/AIDS to be at increased risk of adverse health outcomes [6, 7]. Homelessness can turn relatively minor health problems into serious illnesses due to a lack of access to health care and shelter [5]. Additionally, inadequate conditions of homeless shelters such as insufficient ventilation systems, poor hygienic practices, and

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overcrowding can expose individuals to illnesses [8]. Studies have shown that PWH who are homeless or have unstable housing situations have decreased antiretroviral medication adherence, lower CD4 counts, a lesser likelihood of undetectable viral loads, and more emergency department visits [6, 9, 10].

A 2019 report described Washington, DC as the U.S. city with the highest proportion of gentrifying tracts in the United States [11]. As a result of gentrification, more than 20,000 Black residents were displaced from 2000 to 2019, with high concentrations of Black displacement in Wards 1, 4, and 6. Gentrification contributes to unaffordable housing, and potentially to displacement, as rents and property taxes increase [11].

Washington, DC also has a high HIV prevalence at 2% of the population [12]. In the DC area, 15.3% of PWH are estimated to be homeless or have experienced a history of homelessness [13]. Federally funded programs like Housing Opportunities for Persons with AIDS (HOPWA) were created to combat the prevalence of homelessness with PWH. HOPWA services include providing assistance with housing for PWH [14]. Research has shown that PWH who are able to take advantage of HOPWA in DC have improved health outcomes [13]. HOPWA services have been correlated to HIV-positive and homeless clients having greater retention in care in other jurisdictions as well [15]. Additionally, supportive housing, i.e., the combination of housing and social services, has been shown to increase CD4 count and decrease viral loads in PWH who were formerly homeless [16]. These results show benefit in providing housing assistance to improve the health outcomes of homeless HIV- positive individuals. Housing costs in DC are rising at a faster pace than incomes, resulting in a high proportion of individuals facing housing instability [13]. This could increase the need for PWH to make financial decisions through competing needs and priorities [17]. The current study will begin the exploration of the relationship between housing and health status among PWH in DC. An innovative aspect of this study is partnering with a housing community-based organization (CBO) to use HIV surveillance data for activities beyond the traditional scope of surveillance, in an attempt to learn more to help optimize care for PWH [18]. Both the housing CBO and the surveillance division gained access to data they do not typically collect. This is important because in order to understand the true effect of a housing/support service intervention, baseline data and subsequential outcomes need to be systematically collected. The surveillance data was available to fill that data need.

Housing Counseling Services (HCS) is a CBO that provides housing counseling, financial assistance, and educational seminars to individuals in the Washington, DC area who are homeless, unstably housed or who are having difficulty meeting the costs of their living situation and are at risk for homelessness [19]. Anyone can contact HCS to schedule an intake appointment and discuss eligibility for particular services. Additionally, HCS offers rental case management and follow up counseling for anyone who receives rental assistance. In partnership with the DC DOH, HCS provides additional housing services to PWH. There are several programs for which PWH may apply either through direct contact with HCS or through referral from a community-based case manager or social worker. The Tenant-based Rental Assistance (TBRA) program is a rental subsidy program funded through HOPWA of the US Department of Housing and Urban Development (HUD) and administered by HCS. TBRA provides a rental subsidy for low-income households based on their ability to pay for housing and local rent standards. The Bridges and Short-Term Rent, Mortgage, and Utility (STRMU) programs are both financial assistance programs designed to provide relief from a temporary emergency that has affected a person's housing security. HCS provides an intake appointment to review a client's application, eligibility determination and financial assistance payments on behalf of people who have an HIV diagnosis. The financial assistance application requires documentation of HIV diagnosis, recent lab reports detailing CD4 and viral load counts, verification of DC residency, documentation of all household income and financial resources, a housing stability plan, and completion of a case management section (may be provided by HCS). Although HCS provides services to vulnerable PWH through financial assistance, counseling, and case management if sought by the client, the organization had not previously been definitively tracking health outcomes of their clients.

The HIV/AIDS, Hepatitis, STD and TB Administration (HAHSTA), part of the DC DOH, is the DC government agency for prevention and surveillance of communicable disease, including HIV. HAHSTA partners with health and community-based organizations, including Housing Counseling Services, to offer multiple services, both medical and wraparound support services such as housing and nutrition. Prior to initiating this study, there were multiple discussions between the researchers at GWU, the staff at HCS, and the HAHSTA team to set up the study protocol and to understand each other's' perspectives. This was the first attempt to combine data from a community agency with surveillance data to gain a better understanding of the health status of PWH who seek housing assistance and use this to evaluate how we can improve what resources are available to them. This partnership is envisioned as a long-term project.

The objective of this study was to link HAHSTA HIV surveillance data with HCS data to perform a baseline assessment of retention in HIV care and viral suppression among PWH accessing HCS services. Additionally, we examined the proportion of PWH in each ward accessing HCS. Subsequent to the study period, HCS expanded their wraparound

services so that all clients were involved in a more comprehensive form of case management at HCS. Therefore, it was important to perform this initial evaluation of RIC and viral suppression (VS) of PWH at HCS intake to establish a baseline prior to implementation of expanded services.

Methods

Study Design

This project is a retrospective study using data from HCS and the HAHSTA surveillance databases. The study included adults (18 years and older) with HIV who completed an HCS intake between January 1, 2015, and December 31, 2017. The study was developed in conjunction with HCS leadership and had approval from the George Washington University (GWU) Institutional Review Board (IRB) and the DOH IRB.

HCS sent a list of HIV-positive clients via a secure file transfer protocol to the HAHSTA. The HCS client list included name, race, ethnicity, gender, ward of residence, age, year of HIV diagnosis, mode of HIV transmission, and types and dates of housing services received from HCS. The HCS client list was matched to HAHSTA HIV surveillance data using a 2-step process. First, the datasets were matched using an 11 key deterministic matching algorithm that involved combined full and partial components of first name, last name and date of birth. For example: Jane Doe, Date of Birth 01/01/1990, one of the matching keys would be expressed as DE011990. The second step used a probabilistic method (Link Plus 3.0). First name, last name and date of birth was used to identify additional matches missed with the deterministic method.

We requested and received a waiver of the informed consent process. The data were already collected for program monitoring purposes or for routine public health surveillance. There was no direct contact with individuals whose data were used. The academic researchers did not have access to any HIPAA identifiers.

Outcome Variables

Health markers at the time of the first HCS intake during the observation period were evaluated. Using surveillance CD4 and viral load test records as proxies for medical care visits, retention in care (RIC) was defined as at least 1 laboratory test of CD4 or HIV RNA within 90 days of initial intake at HCS. Viral suppression (VS) was defined as HIV RNA < 200 copies/mL within a 90-day window before or after the HCS intake date.

Independent Variables

Independent variables included the following demographic characteristics from the HCS dataset: age, gender, race/ethnicity, HIV transmission risk factor (men who have sex with men (MSM), injection drug use (IDU), high risk heterosexual (HRH), or Other/Unknown). Additional variables included HIV duration, initial HCS intake year, housing status at time of intake (e.g. homeless from street, transitional housing, jail/prison, living with a friend/relative, rental housing, own housing, see Table 1 for complete list), and DC ward of residence. Ward of residence for homeless individuals was determined based on the Ward of last residence reported to HAHSTA. Additionally, we examined various programs within HCS: (1) TBRA Housing Voucher, (2) Bridges Financial Assistance Program, and (3) STRMU Program. The final variable of interest was CD4 category (≤ 200, 201–499, and ≥ 500 cells/mm^3) at intake, based on CD4 cell count within 90 days before or after HCS intake.

Statistical Analysis

Descriptive comparisons for individuals with VS and/or RIC at HCS intake were reported as frequencies (%) and medians (IQR) across client subgroups using chi-square or Fisher's exact for categorical variables and Wilcoxon rank sum tests for continuous comparisons. A p-value of 0.05 was used to determine statistically significant differences between subgroups.

Participants could complete intake for multiple HCS programs on their initial visit within the time interval we observed. Therefore, we did not compare one program to another, but rather, compared individuals with and without RIC and VS by intake into each program. The data analysis for this paper was generated using SAS software, Version 9.4 of the SAS System (Cary, NC, USA).

GIS software [20, 21] was used to generate choropleth maps of Washington DC wards to examine both the proportion of PWH completing versus not completing the HCS intake by DC ward in 2015. Jenks natural breaks [22] classification was used to create optimal break points between five categories for both figures.

Results

Retention in Care

As shown in Table 1, out of the 734 HCS participants with surveillance data available, most were male (67%), Non-Hispanic Black (89%), had MSM as the HIV transmission risk factor (44%) and had rental housing (60%). A large proportion of the sample (634/734, 86%) was RIC at the time

Table 1 Demographic and clinical characteristics, by retention in care status at time of initial enrollment with Housing Counseling services, 2015–2018

Characteristic	Total Cohort (N = 734)	Not Retained in care at intake (N = 100, 13.6%)	Retained in care at intake (N = 634, 86.4%)	p-value
	N (%)	N (%)	N (%)	
Age, median (IQR)	33 (25, 41)	31 (25, 41)	33 (25, 41)	0.3524
Gender				
Male	492 (67.03)	70 (70.0)	422 (66.56)	0.8020
Female	208 (28.34)	25 (25.0)	183 (28.86)	
Transgender: male-to-female	30 (4.09)	5 (5.0)	25 (0.16)	
Transgender: female-to-male	1 (0.14)	0 (0.0)	1 (0.16)	
Missing	3 (0.41)	0 (0.0)	3 (0.47)	
Race/ethnicity				
NH Black	650 (88.56)	84 (84.0)	566 (89.27)	**0.0287**
NH White	30 (4.09)	8 (8.0)	22 (3.47)	
Hispanic, any race	38 (5.18)	6 (6.0)	32 (5.05)	
Other	12 (1.63)	0 (0.0)	12 (1.89)	
Missing	4 (0.54)	2 (2.0)	2 (0.32)	
HIV Transmission risk				
MSM	322 (43.87)	42 (42.0)	280 (44.16)	0.8806
IDU	120 (16.35)	18 (18.0)	102 (16.09)	
Heterosexual	216 (29.43)	28 (28.0)	188 (29.65)	
Other/Unknown	76 (10.35)	12 (12.0)	64 (10.09)	
Median HIV duration in months (IQR)	120 (68,189)	118 (69,175)	120 (68,190)	0.8669
Intake year				
2015	323 (44.01)	52 (52.0)	271 (42.74)	0.0508
2016	223 (30.38)	32 (32.0)	191 (30.13)	
2017	188 (25.61)	16 (16.0)	172 (27.13)	
Living situation				
Homeless from Street	41 (5.59)	2 (2.0)	39 (6.15)	0.1997
Homeless from emergency (transitional)	15 (2.04)	1 (1.0)	14 (2.21)	
Transitional Housing	48 (6.54)	3 (3.0)	45 (7.10)	
Substance abuse treatment	3 (0.41)	0 (0.0)	3 (0.47)	
Hospital or other medical	1 (0.14)	1 (1.0)	0 (0.0)	
Jail/prison	1 (0.14)7	0 (0.0)	1 (0.16)	
Domestic violence situation	1 (0.14)	0 (0.0)	1 (0.16)	
Living with friends/relatives	127 (17.30)	14 (14.0)	113 (17.82)	
Rental housing	441 (60.08)	72 (72.0)	369 (58.2)	
Participant owned housing	13 (1.77)	1 (1.0)	12 (1.89)	
Other housing program	17 (2.32)	2 (2.0)	15 (2.37)	
Missing	26 (3.54)	4 (4.0)	22 (3.47)	
Ward at enrollment				
1	50 (6.81)	6 (6.0)	64 (10.09)	**0.0493**
2	23 (3.13)	5 (5.0)	44 (6.94)	
3	7 (0.95)	2 (2.0)	18 (2.84)	
4	60 (8.17)	12 (12.0)	5 (0.79)	
5	114 (15.53)	10 (10.0)	48 (7.57)	
6	55 (7.49)	7 (7.0)	104 (16.40)	
7	166 (22.62)	22 (22.0)	48 (7.57)	
8	192 (26.16)	33 (33.0)	144 (22.71)	
Missing		3 (3.0)	64 (10.09)	

Table 1 (continued)

Characteristic	Total Cohort (N = 734)	Not Retained in care at intake (N = 100, 13.6%)	Retained in care at intake (N = 634, 86.4%)	p-value
	N (%)	N (%)	N (%)	
CD4 (cells/μl)				
≤200	325 (44.28)	0 (0.0)	325 (51.26)	**< .0001**
201–499	208 (28.34)	0 (0.0)	208 (32.81)	
≥500	81 (11.04)	0 (0.0)	81 (12.78)	
Missing	120 (16.35)	100 (100)	20 (3.15)	
HCS Program (first program[a])				
Housing	202 (27.52)	15 (15.0)	187 (29.50)	**0.0024**
STRMU	430 (58.58)	66 (66.0)	364 (57.41)	0.1052
Bridges	217 (29.56)	41 (41.0)	176 (27.76)	**0.0070**

Clients had to be enrolled in HCS prior to Dec 31 2017 to be included in this analysis

SD standard deviation, *NH* non-Hispanic, *IDU* male or female injection drug user, *IQR* interquartile range, *MSM* men who have sex with men, *OI* opportunistic infection. Other race groups include those of multiple race group and unknown, *STRMU* Short-Term Rent, Mortgage, and Utility Assistance

[a]At their initial intake, clients could enroll in more than 1 program, therefore, these are not mutually exclusive

of their HCS intake. Non-Hispanic Black participants were more likely to be retained in care (vs not retained in care) (89.3% vs. 84.0%, p = 0.03).

Clients could apply for more than one program simultaneously. Housing voucher program applicants were more likely to be RIC (vs not RIC) (29.5% vs. 15.0%, p = 0.0024). There was no difference in RIC by STRMU program enrollment status. Bridges program enrollees were less likely to be RIC (27.8% vs. 41%, p = 0.007).

Viral Suppression

As shown in Table 2, 621/734 (85%) had data available at intake to evaluate the VS outcome. A large proportion of the sample (477/621, 76.8%) was virally suppressed at the time of their HCS intake. Older age (median age 33 vs. 30 years-old, p = 0.0007) was associated with VS, though the difference in years is minimal. Homeless individuals (categorized as homeless from street) were less likely to be VS (4.8% homeless in suppressed group vs. 11. 1% homeless in non-suppressed group, p < 0.0045). CD4 count ≤ 200 cells/mm^3 was associated with suppression (61.2% ≤ 200 in suppressed group vs 18.1% ≤ 200 in unsuppressed group, p < 0.0001 across all CD4 cell count groups).

HCS Intake Among PWH and VS Status Among HCS Clients by DC Ward of Residence

As shown in Supplemental Fig. 1, Wards 7 and 8 had the highest proportion of PWH completing an HCS intake in 2015. The highest overall burden of PWH in DC that year was in Wards 5, 7, and 8 [23], representing 51% of all cases in DC. As shown in Supplemental Fig. 2, the highest proportion of those completing HCS intake who were not virally suppressed were in Wards 3, 5, 7, and 8 [note that very few individuals in Ward 3 completed an intake].

Discussion

Among PWH in DC presenting for HCS intake, we found that the proportions of those clients who were RIC and VS were below targets that have been set internationally [24] and locally [25]. According to those targets, if 90% of people know their HIV status, 90% of those should be retained in care, and 90% of those virally suppressed. Individuals accessing this CBO represent a vulnerable population of PWH, as evidenced by their need for support in attaining or maintaining housing, a fundamental social determinant of health. The study establishes baseline data prior to HCS incorporating intensive case management for all clients accessing services and determines that PWH were below these targets, presenting 77% VS and 86% RIC on intake. This will allow for a comparison of HIV outcomes after implementation of higher intensity services. This is an important first step both for evaluating a local program and for expanding the use of surveillance data beyond its typical scope [18].

The clients presenting to HCS reflect the demographics of the HIV epidemic in Washington, DC, being predominantly male, non-Hispanic Black and with MSM as their HIV transmission risk factor [23]. Additionally, the majority of PWH who completed HCS intake between 2015 and 2018 had rental housing at intake. Therefore, although many HCS applicants were already housed, their situations were not necessarily stable as shown by their need for additional

Table 2 Demographic and clinical characteristics, by Viral suppression status *at time of initial enrollment* with Housing Counseling services, 2015–2018

Characteristic	Total Cohort (N = 621)	Not Virally suppressed at intake (N = 144, 23.2%) N (%)	Virally suppressed at intake (N = 477, 76.8%) N (%)	p-value
Age, median (IQR)	33 (25, 41)	30 (23, 39)	33 (26, 42)	**0.0007**
Gender				
Male	414 (66.67)	87 (60.42)	327 (68.55)	0.0694
Female	178 (28.66)	51 (35.42)	127 (26.62)	
Transgender: male-to-female	25 (4.03)	4 (2.78)	21 (4.40)	
Transgender: female-to-male	1 (0.16)	0 (0.00)	1 (0.21)	
Missing	3 (0.48)	2 (1.39)	1 (0.21)	
Race/ethnicity				
NH Black	554 (89.21)	128 (88.89)	426 (89.31)	0.3806
NH White	22 (3.54)	4 (2.78)	18 (3.77)	
Hispanic, any race	31 (4.99)	6 (4.17)	25 (5.24)	
Other	12 (1.93)	5 (3.47)	7 (1.47)	
Unknown	2 (0.32)	1 (0.69)	1 (0.21)	
HIV Transmission risk				
MSM	275 (44.28)	57 (39.58)	218 (45.70)	0.1619
IDU	99 (15.94)	28 (19.44)	71 (14.88)	
Heterosexual	187 (30.11	40 (27.78)	147 (30.82)	
Other/Unknown	60 (9.66)	19 9 (13.19)	41 (8.60)	
Median HIV duration in months (IQR)	1221 (69,191)	124.5 (70.5,178.5)	121 (69,194)	0.3424
Intake year				
2015	267 (43.00)	60 (41.67)	207 (43.40)	0.8994
2016	185 (29.79)	45 (31.25)	140 (29.35)	
2017	169 (27.21)	39 (27.08)	130 (27.25)	
Living situation				
Homeless from Street	39 (6.28)	16 (11.11)	23 (4.82)	**0.0045**
Homeless from emergency (transitional)	13 (2.09)	1 (0.69)	12 (2.52)	
Transitional Housing	45 (7.25)	5 (3.47)	40 (8.39)	
Substance abuse treatment	2 (0.32)	0 (0.00)	2 (0.42)	
Jail/prison	1 (0.16)	1 (0.69)	0 (0.00)	
Domestic violence situation	1 (0.16)	0 (0.00)	1 (0.21)	
Living with friends/relatives	110 (17.71)	17 (11.81)	93 (19.50)	
Rental housing	361 (58.13)	90 (62.50)	271 (56.81)	
Participant owned housing	12 (1.93)	4 (2.78)	8 (1.68)	
Other housing program	15 (2.42)	2 (1.39)	13 (2.73)	
Missing	22 (3.54)	8 (5.56)	14 (2.94)	
Ward at enrollment				
1	44 (7.09)	6 (4.17)	38 (7.97)	0.1054
2	17 (2.74)	3 (2.08)	14 (2.94)	
3	5 (0.81)	2 (1.39)	3 (0.63)	
4	47 (7.57)	7 (4.86)	40 (8.39)	
5	102 (16.43)	24 (16.67)	78 (16.35)	
6	48 (7.73)	6 (4.17)	42 (8.81)	
7	138 (22.22)	40 (27.78)	98 (20.55)	
8	156 (25.12)	43 (29.86)	113 (23.69)	
Missing	64 (10.31)	13 (9.03)	51 (10.69)	

Table 2 (continued)

Characteristic	Total Cohort (N = 621)	Not Virally suppressed at intake (N = 144, 23.2%) N (%)	Virally suppressed at intake (N = 477, 76.8%) N (%)	p-value
CD4 cell count				
≤200	318 (51.21)	26 (18.06)	292 (61.22)	**< .0001**
201–499	206 (33.17)	62 (43.06)	144(30.19)	
≥500	80 (12.88)	52 (36.11)	28 (5.87)	
Missing	17 (2.74)	4 (2.78)	13 (2.73)	
HCS Program (first program[a])				
Housing	182 (29.31)	46 (31.94)	136 (28.51)	0.4648
STRMU	359 (57.81)	85 (59.03)	274 (57.44)	0.7731
Bridges	170 (27.38)	38 (26.39)	132 (27.67)	0.8313

Clients had to be enrolled in HCS prior to Dec 31 2017 to be included in this analysis

Abbreviations: *SD* standard deviation, *NH* non-Hispanic, *IDU* male or female injection drug user, *IQR* interquartile range, *MSM* men who have sex with men, *OI* opportunistic infection. Other race groups include those of multiple race group and unknown, *STRMU* Short-Term Rent, Mortgage, and Utility Assistance

[a]At their initial intake, clients could apply for more than 1 program, therefore, these are not mutually exclusive

financial assistance. This may be due in part to the expensive rental market in DC as well as the evolving gentrification tracts of the region. The subgroup of homeless clients presenting to HCS from the street had lower VS when compared to other living situations. This supports previous research that has shown homelessness contributes to poor adherence and lack of VS [6, 26]. Our findings reinforce the need for extensive support services for PWH who have unstable housing or are homeless and living on the streets.

Our results showed that Wards 7 and 8 had the highest proportion of PWH completing an HCS intake in 2015 and also had some of the highest proportions of those who were not virally suppressed. According to the DC DOH Health Equity Report of 2018, compared to other DC wards, Wards 7 and 8 had the lowest household income, highest percentage of rent to household income, least insurance coverage per population, lowest life expectancy, and highest total percentage of the population living in poverty [27]. This provides important context in understanding how socioeconomic segregation can be associated with the housing stability and viral suppression of PWH. The results of our study support the need for further investment into services that would promote socioeconomic growth and improved health outcomes for these communities.

There are several strengths of this study. The HCS applicants represent a broad swath of vulnerable PWH across DC who are receiving care at different venues throughout DC, which increases the generalizability of our findings. Additionally, combining HCS data with surveillance data allows for the study of factors associated with RIC and VS that would have not previously been possible.

One limitation of this study was the short time frame we used for eligibility in the analysis (2015–2018). Some clients had intakes at HCS prior to 2015, and we were unable to examine the influence of duration of exposure to HCS services on RIC and VS outcomes. Another limitation is that individuals who were not retained in care at intake did not have a CD4 lab value. Additionally, we could not evaluate the VS outcome in all participants due to missing laboratory data, and it is possible that those with missing data would be more likely to be unsuppressed. HAHSTA estimates that over 95% of HIV-related lab reports are collected in the surveillance system (personal communication, Garret Lum), so missing labs could signify that people have not been in care, or they have moved out of DC. We were not able to account for the duration of HIV infection, which may have impacted the outcomes.

In summary, our findings from this initial investigation reinforce the need for intensive support to vulnerable PWH to help attain 90–90–90 goals as we work towards ending the HIV epidemic in Washington, DC. Housing can be a significant factor in the health status of PWH, and housing status can be elicited as a means to better understand how to improve an individual's health outcomes. Partnerships between health department HIV surveillance units and CBOs can enhance the efforts of both entities to improve HIV outcomes. In particular, HIV surveillance data, since it is systematically collected, cleaned, and published, can complement CBO service data for the purposes of program evaluation.

Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethical Approval The study had approval from the George Washington University (GWU) Institutional Review Board (IRB) and the DC Department of Health IRB.

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