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MAJOR ARTICLE

The Impact of a Walk-in Human Immunodeficiency Virus Care Model for People Who Are Incompletely Engaged in Care: The Moderate Needs (MOD) Clinic

Raaka G. Kumbhakar,[1] Jehan Z. Budak,[1] Yuan Tao,[2] Jason Beste,[1] Eve Lake,[3] Nazlee Navabi,[3,a] Eric Mose,[2] Gwen Barker,[2] Ji Lee,[2,4] Katie Hara,[2,b] Christine Khosropour,[5] Shireesha Dhanireddy,[1] and Julia C. Dombrowski[1,5,6]

[1]Division of Allergy and Infectious Diseases, Department of Medicine, University of Washington, Seattle, Washington, USA, [2]Harborview Medical Center, Seattle, Washington, USA, [3]Division of General Internal Medicine, Department of Medicine, University of Washington, Seattle, Washington, USA, [4]School of Pharmacy, University of Washington, Seattle, Washington, USA, [5]Department of Epidemiology, University of Washington, Seattle, Washington, USA, and [6]Public Health-Seattle & King County, Seattle, Washington, USA

Background. The Moderate Needs (MOD) Clinic in Seattle, Washington provides walk-in primary care for people with human immunodeficiency virus (HIV) who are incompletely engaged in standard care.

Methods. We evaluated HIV outcomes among patients enrolled in the MOD Clinic (within group analysis) and, separately, among MOD patients versus patients who were MOD-eligible but did not enroll (comparison group analysis) during January 1, 2018–September 30, 2021. The primary outcome was viral suppression ([VS] viral load <200 copies/mL); secondary outcomes care engagement (≥2 visits ≥60 days apart) and sustained VS (≥2 consecutive suppressed viral loads ≥60 days apart). In the within group analysis, we examined outcomes at time of MOD enrollment versus 12 months postenrollment. In the comparison group analysis, we examined outcomes at the time of MOD eligibility versus 12 months posteligibility. Both analyses used modified Poisson regression.

Results. Most patients in MOD (N = 213) were unstably housed (52%) and had psychiatric comorbidities (86%) or hazardous substance use (81%). Among patients enrolled ≥12 months (N = 164), VS did not increase significantly from baseline to postenrollment (63% to 71%, $P = .11$), but care engagement and sustained VS both improved (37% to 86%, $P < .001$ and 20% to 53%, $P < .001$, respectively) from pre-enrollment to 12 months postenrollment. In the comparison group analysis, VS worsened in nonenrolled patients (N = 517) from baseline to 12 months posteligibility (82% to 75%, $P < .001$). Patients in the MOD Clinic who met criteria for the comparison group analysis (N = 68) were more likely than nonenrolled patients to be engaged in care at 12 months posteligibility (relative risk, 1.29; 95% confidence interval, 1.03–1.63).

Conclusions. The MOD Clinic enrollment was associated with improved engagement in care. This model adds to the spectrum of differentiated HIV care services.

Keywords. care delivery; engagement in care; high-need populations; HIV care continuum; walk-in care.

Despite widespread availability of antiretroviral therapy (ART) in the United States, difficulties with engagement in care continue to persist for some people with human immunodeficiency virus (PWH) [1], particularly those with housing instability, substance use, and concomitant psychiatric illness [2–7]. Multiple strategies to re-engage PWH in care, including patient navigation, appointment alerts, psychosocial support, transportation assistance, and data-to-care, have been implemented with varying success [8, 9]. Beyond supporting individuals to engage in standard human immunodeficiency virus (HIV) care services, the differentiated service delivery (DSD) strategy aims to change the model of care for specific populations, including high-need individuals [10, 11]. Differentiated service delivery has been used to adapt HIV care services to lessen the frequency and intensity of services for stable patients in low- and middle-income countries [12]. However, DSD has been little studied in the US context as a method of intensifying services for a subset of high-need patients [13].

At Harborview Medical Center in Seattle, Washington, there is a 3-tiered differentiated service delivery model for HIV care. The Madison Clinic is the Ryan White-funded, standard care clinic that offers services to all PWH. The Moderate Needs (MOD) Clinic is designed to serve PWH with a moderate level

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[a]Present Affiliation: Wise Patient Internal Medicine, Seattle, Washington, USA

[b]Present Affiliation: Bailey-Boushay House, Seattle, Washington, USA

Correspondence: Raaka G. Kumbhakar, MD, Division of Allergy and Infectious Diseases, Department of Medicine, University of Washington, 325 9th Ave., Box 358061, Seattle, WA 98104 (raaka@uw.edu). Julia C. Dombrowski, MD, MPH, 325 9th Ave., Box 359777, Seattle, WA 98104 (jdombrow@uw.edu).

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of need as indicated by incomplete engagement in the Madison Clinic, and the Max Clinic is designed to serve the highest need patients. The Max Clinic, a low-barrier, walk-in HIV clinic that includes incentives and intensified care coordination, was implemented in 2015 [14, 15]. This model demonstrated success in achieving viral suppression (VS) in a group of high-need patients, most of whom were virally unsuppressed and entirely disengaged from care. However, the Max Clinic requires extensive resources, it may not be feasible in many settings, and it has higher intensity than required by many patients. Shortly after its inception, the Max Clinic received many referrals for patients who were missing care visits in the Madison Clinic but were virally suppressed and continuing ART or who had unstable medical comorbidities but well controlled HIV. This population was not the target group for the Max Clinic, and the referrals highlighted the need for a spectrum of differentiated care to serve patients who were not fully engaged in the Madison Clinic. To meet the needs of patients who have difficulties engaging in standard care but do not want or require the Max Clinic approach, we implemented the MOD Clinic in 2018. The decision to establish MOD Clinic and its development was built upon a long-standing collaborative relationship between the Madison Clinic and the Washington State Department of Health (DOH).

The MOD Clinic is operated by the Madison Clinic and funded by the Washington State DOH. In this model, a medical team collectively provides HIV primary care for patients on weekday afternoons on a walk-in basis, focusing on continuity primary care. Patients receive onsite medical case management and pharmacy services through Madison Clinic via the same location, staff, and mechanisms used for patients enrolled in the main clinic. In contrast, the Max Clinic is located in a separate space from the Madison Clinic and utilizes separate case management services.

The primary objective of this study was to assess whether the MOD Clinic has been successful in improving HIV outcomes among PWH poorly engaged in care before enrollment, specifically with respect to VS and engagement in care. To do this, we conducted 2 separate analyses: a within-group analysis of all patients enrolled in MOD and a comparison group analysis using a comparator set of patients enrolled in usual care at the same HIV clinic (Madison Clinic) during the same time period.

METHODS

Intervention Description

The Madison Clinic (with which MOD is colocated) provides primary care, subspecialty care, and wraparound services for approximately 4500 PWH in the greater Seattle area. The MOD Clinic is staffed by 5 Madison Clinic physicians working as a primary care team as well as an onsite clinical pharmacist. Initially, outreach was performed by clinic staff; a parttime outreach coordinator was added in 2021. Case management services are coordinated by a lead social worker; however, each patient retains their individual case manager. Case managers and medical providers refer patients to MOD, and clinic staff reviews each referral. Once patients are offered and accepted to MOD, the outreach coordinator and case managers encourage drop-in visits. Patients are formally enrolled at the initial visit.

Initially, the written criteria for MOD eligibility included (1) poor engagement in care as measured by a detectable HIV viral load (VL) or ≥3 missed appointments in the prior 12 months,

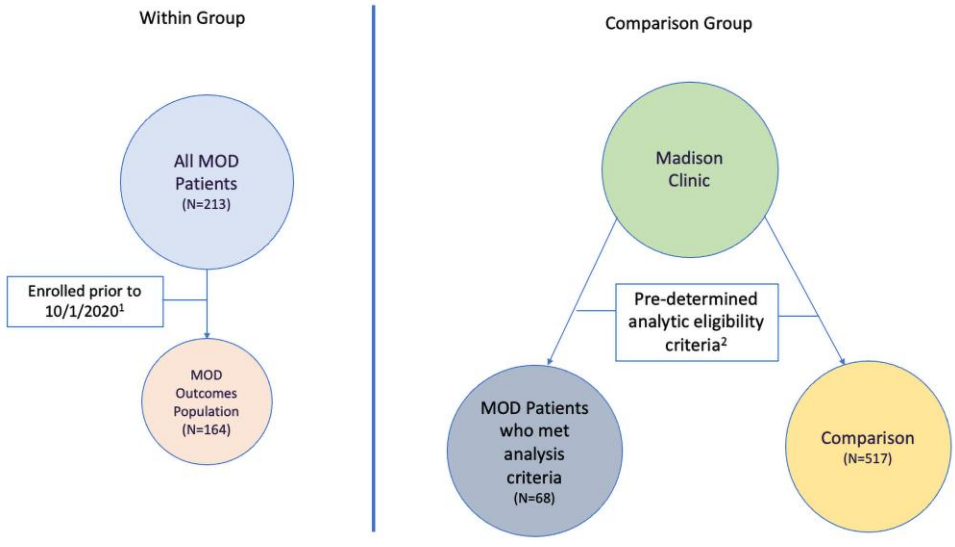

Figure 1. Study design [1]. For analysis purposes, the population was limited to allow for 12-month outcome data [2]. Either (1) ≥3 no-shows in 12 months or (2) an 18-month gap between visits. HIV, human immunodeficiency virus; MOD, Moderate Needs; VS, viral suppression.

or (2) recent graduation from Max Clinic, or (3) recent release from incarceration. These criteria developed from DOH and clinic leadership discussions about who might constitute an incompletely engaged patient population with a moderate level of need. However, in practice, criteria for MOD referral and enrollment have evolved to be less strictly defined and depend largely upon assessment of clinical providers and case managers who know the patients best. In addition, very few patients from Max have "graduated," and the MOD Clinic plays a smaller role in this process than initially envisioned. Referrals to and enrollment in MOD are assessed on a case-by-case basis using the above criteria as a loose framework. The primary focus of MOD is to improve patient engagement, regardless of viral suppression status.

Study Population

We conducted analyses in 2 groups, as illustrated in Figure 1: (1) patients enrolled in MOD and (2) patients in the Madison and MOD Clinics who were determined to be "MOD-Eligible" for the purpose of this analysis.

Within Group

We evaluated the characteristics of all patients enrolled in MOD Clinic during January 2018 (when MOD was established) to September 30, 2021. For the within group analysis of viral suppression, we restricted the population to patients enrolled through September 30, 2020 to allow for 12 months of observation time.

Comparison Group

In the second analysis group, we included all PWH in the Madison Clinic who had ≥1 visit with a Madison clinic provider during January 2018—September 2021. We developed analytic criteria to represent MOD eligibility, defined as either (1) ≥3 no-shows in a 12-month time frame or (2) a gap of ≥18 months between visits. The latter time period was chosen to account for fewer visits during the coronavirus disease 2019 pandemic.

Data Collection

All data were obtained from the electronic health record (EHR). The date of MOD enrollment was defined as the first encounter with a MOD medical provider. For all MOD-enrolled patients, we obtained the following variables via chart review from provider mention or *International Classification of Diseases, Tenth Revision* codes in documentation: psychiatric comorbidities, substance use, housing status, history of incarceration, and date of MOD enrollment. It was not feasible to obtain this information for the comparison group of patients who did not enroll in MOD at this level of detail and with respect to enrollment date. Psychiatric diagnoses and substance use were categorized in a hierarchical fashion described previously [16], with some adaptation to account for local substance use epidemiology [15, 16]. Psychiatric diagnoses included (1) any psychotic disorder, bipolar disorder, and/or personality disorders (with or without depression or anxiety), (2) depression and/or anxiety disorders, or (3) no previous diagnoses. Substance use data were categorized as (1) methamphetamines (with or without other substances), (2) opioids (with other substances except for methamphetamines), (3) cocaine (without methamphetamines or opiates), (4) hazardous alcohol use (with or without marijuana or prescription benzodiazepines), (5) benzodiazepines (with or without marijuana), or (5) marijuana alone. We also collected data on injection drug use in the year before enrollment. Housing status was characterized as unhoused (sleeping or staying in shelter), transitional housing (ie, medical motel), unstable housing (ie, couch surfing), or stable housing. History of incarceration included either prison or jail.

Outcome Measures

The primary outcome measure was VS (VL < 200 copies/mL), defined as the last measurement during the analysis period (January 1, 2018–September 30, 2021). Secondary outcome measures were engagement in care (≥2 visits with a medical provider ≥60 days apart) and sustained VS (≥2 consecutive suppressed VL results ≥60 days apart). The former 2 outcomes are consistent with Department of Health and Human Services core indicators for viral suppression and retention in HIV medical care, updated in 2019 [17, 18]. With regard to sustained viral suppression, the goal was to evaluate durable viral suppression in a continuous time period; for comparison purposes, we used the same definition as used in the prior analysis of the Max clinic [15].

Within Group Analysis

We calculated the percentage of patients who achieved each outcome among the population of patients enrolled in MOD who had ≥12 months of observation time. For VS, we compared the percentage suppressed at enrollment versus 12 months postenrollment. For the secondary outcomes, we compared the proportions who met the outcome definitions during the 12 months pre-enrollment versus 12 months postenrollment.

Comparison Group Analysis

The point of reference for the controlled analysis was the date of eligibility for MOD Clinic, rather than the date of enrollment, because the patients in the comparison population did not enroll in MOD. Otherwise, outcome assessment was analogous to that in the within group analysis.

Baseline values for CD4 cell count and VL were defined as the last value obtained in the year before the date of MOD enrollment (within group analysis) or MOD eligibility (comparison group analysis). For the postenrollment/eligibility viral

suppression assessment, the most recent VL in the year before the assessment was used. For the secondary outcomes, if the outcome occurred at any point in the 12-month period postenrollment or posteligibility, we considered it achieved. Patients who did not have a VL result in the pre- or postbaseline period were considered to not have achieved VS in that respective period.

Statistical Analysis

Within Group Analysis

We summarized descriptors and demographic data for all individuals enrolled in MOD. To compare pre- and postenrollment outcomes for those with 12 months of observation time, we used a McNemar χ^2 test. In this group, relative risk ratios (RRRs) were calculated for demographic and clinical characteristics with respect to the primary outcome; multivariate logistic regression models were constructed with all the above variables to investigate independent effects of these characteristics.

Comparison Group Analysis

We assessed outcomes among all patients eligible for MOD, enrolled (intervention group) or not enrolled (comparison group). Demographic data were compared with χ^2 tests for difference in proportions. We used modified Poisson regression with robust standard error [19] to calculate the unadjusted relative risk (RR) of each outcome in the pre- and posteligibility periods. To calculate adjusted RRRs comparing the pre- and postchanges between groups, we used modified Poisson regression adjusted for age, gender, and race/ethnicity.

In both analyses, we also conducted a sensitivity analysis for the primary outcome and examined the percentage of patients who had VS at any time during the year after enrollment or eligibility (vs VS at the time of the most recent measure within the 12-month period).

All statistical analyses were performed in R (version 4.1.0) [20]. The University of Washington Human Subjects Division approved this study.

Patient Consent Statement

The protocol for this study was approved by the Institutional Review Board Committee of the University of Washington (ID STUDY00013972). The requirement for written informed consent from patients was waved given the retrospective nature of the study and because it does not include factors necessitating patient consent.

RESULTS

Within Group Analysis

During the analysis period, 213 patients enrolled in MOD. As shown in Table 1, they primarily identified as male (81%) and were predominantly White (59%), Black (29%), and non-Hispanic or Latino (78%). Patients in MOD had high rates of substance use, predominantly methamphetamines (64%); 41% used injection drugs in the year before enrollment. Comorbid psychiatric illness was common; 29% had psychotic, bipolar, or personality disorders and only 14% carried no

Table 1. Characteristics of Patients Enrolled in MOD Clinic (n = 213), January 1, 2018–September 30, 2021

Characteristics	n (%) MOD (n = 213)
Demographics	
Gender	
Male	173 (81)
Female	39 (18)
Transgender/nonbinary	1 (1)
Ethnicity	
Hispanic or Latino	40 (19)
Not Hispanic or Latino	165 (78)
Unavailable, unknown, or declined to answer	8 (4)
Race	
White	125 (59)
Black or African American	62 (29)
Asian	9 (4)
American Indian or Alaska Native	7 (3)
Native Hawaiian or other Pacific Islander	3 (1)
Unavailable, unknown, or declined to answer	15 (7)
MOD Eligibility by Preset Criteria	
Eligible by no-show criterion	119 (56)
Eligible by gap-in-care criterion	11 (5)
Eligible by both criteria	32 (15)
Not eligible by criteria	51 (24)
Substance Use at Enrollment	
Methamphetamine (±opioids or other)	135 (64)
Opioids (±others except for methamphetamine)	9 (4)
Cocaine/crack cocaine (±others except for methamphetamines/opioids)	25 (12)
Hazardous alcohol (±marijuana, benzodiazepines)	25 (12)
Misuse of prescription-type benzodiazepines (±marijuana)	3 (1)
Marijuana alone	40 (19)
Injection drug use in the past year	86 (41)
Psychiatric Illness	
Psychotic, bipolar, or personality disorder (±depression/anxiety)	61 (29)
Depression or anxiety disorder	82 (39)
No psychiatric diagnosis	29 (14)
Housing Status at Enrollment	
Unhoused (sleeping outside)	33 (16)
Unhoused (staying in shelter)	23 (11)
Transitional housing (medical motel, etc)	23 (11)
Unstable housing (couch-surfing, etc)	33 (16)
Stable Housing	101 (48)
Incarceration History (Jail or Prison)	94 (45)
Laboratory Data	
CD4 Cell Count, Cells/mm^3 (at Enrollment)	
<200	32 (15)
200–500	80 (38)
>500	95 (45)
Unknown/missing	6 (3)

Abbreviations: MOD, Moderate Needs.

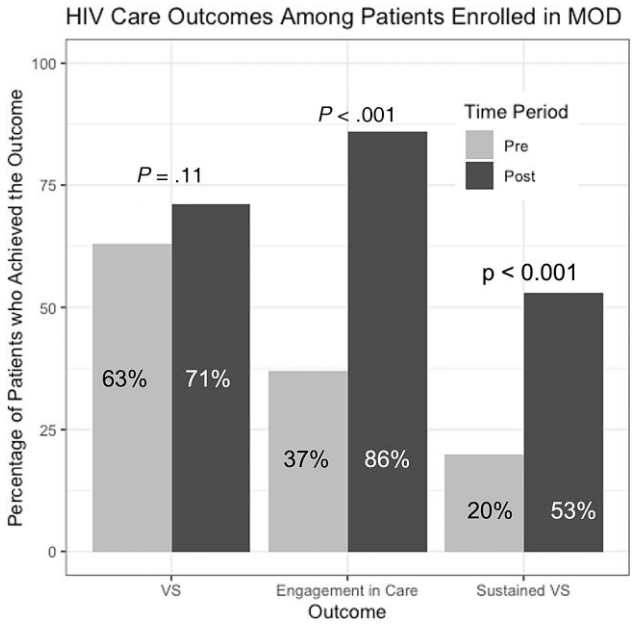

Figure 2. Human immunodeficiency virus (HIV) care outcomes among patients enrolled in the Moderate Needs (MOD) Clinic (n = 164) at enrollment and 12 months postenrollment (viral suppression [VS]) and in the 12 months pre- and postbaseline (engagement in care and sustained VS).

psychiatric diagnosis. Most were unstably housed at time of enrollment (52%); and approximately half (45%) had a documented history of incarceration. The majority had CD4 cell counts < 500 cells/μL, and 15% had CD4 counts < 200 cells/μL.

Among patients in MOD, 164 had 12 months of observation time. The characteristics of this subpopulation did not differ substantially from the overall MOD population. As shown in Figure 2, from enrollment to 12 months postenrollment, VS increased, but not significantly (63% to 71%, $P = .11$). Engagement in care increased significantly from 37% pre-enrollment to 86% postenrollment ($P < .001$), as did sustained VS (20% to 53%, $P < .001$). In the multivariate model, VS at enrollment was the only variable independently associated with VS at 12 months (RRR, 1.51; 95% confidence interval [CI], 1.15–1.98) (data not shown). In the sensitivity analysis modifying the VS outcome to suppression at any time in the 12 months postenrollment, 80% of patients achieved VS at least once.

Comparison Group Analysis

During the study period, 585 patients (13%) in Madison met prespecified analysis criteria for MOD eligibility; of those, 68 (12%) had been enrolled in MOD. Of all patients enrolled in MOD, 76% met analysis eligibility criteria. Patients who enrolled in MOD were younger (mean age, 41 vs 44 years, $P = .05$) and had lower CD4 counts versus the comparison group. The groups were similar with respect to gender, race, and ethnicity (Table 2). As shown in Table 3, from the time of eligibility to 12 months posteligibility, the MOD-enrolled population did not have a significant change in VS (RR, 1.06; 95% CI, .86–1.32), whereas the comparison group had a concomitant significant decrease in VS from 82% to 75% (RR, 0.91; 95% CI, .85–.97). However, there was no statistically significant difference in the pre- versus postchange in viral suppression between the 2 groups (adjusted RRR [aRRR], 1.12; 95% CI, .96–1.31). Engagement in care increased in both groups; those in MOD were 1.29 times as likely to be engaged in care in the 12 months posteligibility compared to pre-eligibility (95% CI, 1.03–1.63). Sustained VS increased significantly in both groups, with no difference in the between-group comparison (aRRR, 1.36; 95% CI, 0.94–1.97). In the sensitivity analysis modifying the VS outcome to suppression at any time in the 12 months posteligibility, 78% of the MOD-enrolled population had VS at least once.

DISCUSSION

Patients who enrolled in a walk-in clinic colocated within a comprehensive Ryan White-funded HIV clinic comprised a complex and high needs population, with high rates of substance use, psychiatric comorbidity, and unstable housing. Among MOD Clinic patients, engagement in care and sustained viral suppression increased significantly in the year after enrollment. In an evaluation including all patients who met predefined analytic criteria for MOD eligibility, those who enrolled in MOD had higher rates of care engagement as compared to nonenrolled patients. We did not find statistically significant increases in VS among MOD patients in the within group analysis or the comparison group analysis, but the level of VS dropped significantly in the comparison group over the same time period.

There are few published models of care in the United States to which we can compare our results. Outside of HIV, a model of walk-in integrated psychiatry care for those with high rates of missed appointments has led to higher rates of ambulatory care patients accessing behavioral healthcare [21, 22]. Among PWH, experience with the Max clinic demonstrated success in achieving viral suppression and increased engagement in care with a combination of walk-in care, financial incentives, and intensive case management [14, 15]. In San Francisco, a low-barrier, high-intensity incentivized care model improved viral suppression for PWH who were homeless/unstably housed [23]. In both models, the target populations had much higher levels of viral nonsuppression than the MOD population and required more intensive intervention than walk-in care alone. It is notable that, in a discrete choice experiment in the San Francisco population, potential clients prioritized patient-centered care and drop-in care over financial incentives [24]. These results, and our own, demonstrate that removing barriers to HIV primary care access, particularly the difficulties

Table 2. Comparison of Characteristics of MOD-Eligible Patients Enrolled in MOD (n = 68) and Comparison Group (n = 517), January 1, 2018–September 30, 2021

Characteristics	n (%) MOD (n = 68)	n (%) Comparison (n = 517)	*P* Value
Demographics			
Age (mean, SD)	41, 12.6	44, 12.8	.05
Gender			
Male	54 (79)	410 (79)	.84
Female	14 (21)	101 (20)	
Transgender/nonbinary	0 (0)	5 (1)	
Ethnicity			
Hispanic or Latino	14 (20)	80 (16)	.51
Not Hispanic or Latino	52 (77)	415 (80)	
Unavailable, unknown, or declined to answer	2 (3)	22 (4)	
Race			
White	37 (54)	277 (54)	.92
Black or African American	22 (32)	174 (34)	
Asian	2 (3)	22 (4)	
American Indian or Alaska Native	2 (3)	21 (4)	
Native Hawaiian or other Pacific Islander	0 (0)	5 (1)	
Unavailable, unknown, or declined to answer	4 (6)	36 (7)	
Laboratory Data			
CD4 Cell Count, Cells/mm^3 (at Eligibility)			
<200	11 (16)	53 (10)	.006
200–500	31 (46)	162 (31)	
>500	25 (27)	297 (57)	
Unknown/missing	1 (1)	5 (1)	

Abbreviations: MOD, Moderate Needs; SD, standard deviation.

associated with attending scheduled clinic visits, can improve engagement in care even among patient populations with high levels of substance use and unstable housing [16, 25, 26]. Other models of comprehensive HIV care in urban centers, in partnership with public health departments, offer evidence-based services to improve retention in care such as intensive medical case management and patient navigation, but they have not offered walk-in care [9, 27–29]. To our knowledge, this is the first description and evaluation of the impact of a walk-in care model, without additional incentives or case management support, designed for patients who are incompletely engaged in HIV care.

Although we have not analyzed costs of the MOD Clinic intervention, the incremental cost of implementing and sustaining the MOD Clinic is almost certainly lower than more intensive low-barrier care clinics like the Max Clinic, and to the extent that the MOD model can be more readily implemented in other settings than the Max model, our results may be generalizable to more settings. The MOD leverages existing clinic space and staff; the majority of the cost of this

Table 3. Within Group Comparisons of 12-Month Postbaseline HIV Outcomes Compared With 12-Month Prebaseline Outcomes and Between-Group Comparisons of Pre- and Postchanges in HIV Outcomes Among MOD Eligible Patients Enrolled in MOD Clinic (n = 68) and MOD-Eligible Comparison Group (n = 517)

	MOD[a], n (%)				Comparison, n (%)				
Outcome[b]	Pre	Post	*P* value[c]	RR (95% CI)	Pre	Post	*P* value[c]	RR (95% CI)	Between Group aRRR[d] (95% CI)
VS	47 (70)	50 (75)	.7	1.06 (0.86–1.32)	424 (82)	386 (75)	<.001	.91 (.85–.97)	1.12 (.96–1.31)
EiC	29 (43)	52 (78)	<.001	1.79 (1.32–2.43)	264 (51)	329 (64)	<.001	1.25 (1.12–1.39)	1.29 (1.03–1.63)
Sustained VS	16 (24)	29 (43)	.01	1.81 (1.09–3.02)	192 (37)	253 (49)	.02	1.17 (1.01–1.36)	1.36 (.94–1.97)

Abbreviations: aRRR, adjusted relative risk ratio; CI, confidence interval; EiC, engagement in care; HIV, human immunodeficiency virus; RR, relative risk; MOD, Moderate Needs; VS, viral suppression.

[a]As illustrated in Figure 1, MOD patients who met analysis criteria.

[b]VS, human immunodeficiency virus-1 ribonucleic acid <200 copies/mL; EiC, ≥2 provider visits ≥60 days apart.

[c]Within group pre- and postcomparison (for VS, baseline-post comparison), McNemar χ^2 test.

[d]Between-group comparison adjusted for age, gender, race/ethnicity.

intervention is in creating dedicated paid time for those staff and surmounting the administrative barriers to walk-in care. Because a dedicated group shares the care of this patient panel, progress can be made at even short visits towards longitudinal care. Furthermore, given that patients who enrolled in MOD generally missed scheduled appointments before MOD enrollment, scheduled clinic visits can be more efficiently used for patients who thrive in standard care. This may decrease the burden on the usual-care clinic and allow for more appropriate distribution of time and resources.

Our finding that the comparator group in the comparison group analysis had a drop in viral suppression while MOD patients sustained viral suppression suggests enrollment in MOD may have averted the loss of VS for some patients. The VS metric is a "snapshot" of patients at one time, some of whom are moving in and out of care or on and off medications; enrollment in MOD may help stabilize or blunt the impact of that fluctuation. The finding of decreased VS in the comparison group also suggests that a subgroup of Madison patients who might benefit from MOD remains. Potential next steps for our group include consideration of a more systematic assessment of MOD eligibility and proactive offers of enrollment.

We did not specifically address the fact that our analysis period spans the severe acute respiratory syndrome coronavirus 2 pandemic, with the exception of allowing for a prolonged (18 month) gap between visits. We acknowledge that fewer viral load measurements were likely obtained in the initial phase of the pandemic. However, our analysis includes the use of a comparator group; we have little reason to think there would be a differential impact of the pandemic between groups. In a comparison of dates of eligibility for both groups, observation periods were similar, including time points both pre- and post-pandemic. This further suggests that the effects of the pandemic on our results should be similar for each group.

A key strength of our study is the inclusion of a comparison population; however, this was not a randomized trial. Although we created analytic eligibility criteria, in practice, enrollment in MOD is dependent on case manager and/or provider referral, and thus our analysis group in the controlled analysis did not include all MOD patients. Despite this, more than 75% of the MOD population did meet criteria. Furthermore, results in the comparison group analysis for the MOD enrolled group were comparable to those in the within group analysis, suggesting the populations captured by these criteria were similar. Our estimation of factors such as unstable housing, incarceration, substance use, and psychiatric comorbidities in MOD was reliant on medical records documentation, which likely underestimated the prevalence of these factors. In addition, given limitations of extractable EHR data, we could not obtain those data in the comparison group. Insofar as these characteristics are associated with referral to MOD and worse HIV outcomes, we may have underestimated the true effect of MOD enrollment. Our intervention was implemented at 1 location in a well resourced jurisdiction, in a Medicaid-expansion state with high rates of HIV viral suppression [30], meaning these results have unknown generalizability for other settings. Finally, our analysis focused on HIV outcomes and did not capture many potential benefits of MOD, such as those related to primary care, eg, age-appropriate malignancy screening, vaccinations, and comorbidity management, or patient-reported outcomes, such as care satisfaction and quality of life, which we plan to assess in future work.

CONCLUSIONS

In summary, patients who were incompletely engaged in HIV care had improved care engagement and may have had improved viral suppression, compared to patients receiving usual care, after enrollment in a walk-in HIV clinic model. The MOD Clinic fills a gap in the spectrum of differentiated HIV care by providing a lower barrier care option for individuals who are not well engaged in usual care but do not require the intensive resources offered by the Max model. The options of multilevel care may inform future tailored clinic interventions in other settings, with the flexibility to adapt approaches to local resources and needs. This approach supports the strategy of differentiated HIV service delivery and demonstrates that variable models of care can improve HIV outcomes in barely reached populations, which is critical to ending the HIV epidemic.

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Potential conflicts of interest. All other authors report no potential conflicts. All authors have submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest.

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