Interim Impact Report

Permanent Supportive and Transitional Supportive HASA Housing Pilots: Enrollments from September 24, 2018 to September 15, 2019

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Executive Summary

Background: In September 2018, the HIV/AIDS Services Administration (HASA), a program within the New York City Human Resources Administration (HRA), initiated two three-year pilots: the Permanent Supportive Housing (PSH) pilot and Transitional Supportive Housing (TSH) pilot. The pilot projects feature specialized units of HASA caseworkers whose caseloads are determined based on client acuity, as determined by housing status. The pilots presume that residents of transitional housing are in greater need of intensive HASA intervention, while clients living in permanent supportive housing, particularly durably virally suppressed clients, are more stable and in need of a less intensive touch from HASA.

Aim: The aim of the interim impact report was to compare viral load suppression (VLS) among persons living with HIV (PWH) who were enrolled in the HASA pilot with VLS among PWH who were enrolled in traditional housing (non-pilot/control) models.

Hypotheses:

1) We hypothesized that VLS among PWH enrolled in the PSH pilot would *not be different* than PWH who received traditional PSH, despite a higher caseload to caseworker ratio in the pilot relative to the traditional PSH model (50:1 ratio in pilot, versus ~34:1 ratio in non-pilot), and given a PSH pilot caseworker model that was focused on single-clients with housing specific assignment versus the traditional caseworker model, which includes a mix of single and family clients across housing types (PSH, TSH and Commercial Single Room Occupancy (CSRO) housing).
2) For the TSH pilot, we hypothesized that PWH enrolled in the pilot would *have greater VLS* relative to PWH in traditional TSH, given the lower caseload to caseworker ratio (25:1 in pilot versus ~34:1 in non-pilot) and a TSH pilot caseworker model focused on single-clients with housing specific assignments versus the traditional model.

Methods: To demonstrate the real-world effects of the pilot intervention, which includes short-enrollment periods, we included all persons enrolled in PSH or in TSH from September 24, 2018 to September 15, 2019. VLS was defined as having the most recent available VL value (from the HIV surveillance Registry) <200 copies/mL in the 6-month period following the date of enrollment. We did not look at housing outcomes for this interim report, due to 1) previous agreement and the desire to focus on VLS and 2) given access to data has been restricted as a result of COVID-19 policies and the short timeframe for developing reports. The follow-up period for outcome monitoring extended through March 15, 2020. We used a logistic regression model and generated odds ratios to assess the effectiveness of each pilot on VLS.

Results: The PSH cohort included a total of 4,987 enrollments (4,628 non-pilot enrollments and 359 pilot enrollments). The TSH cohort included a total of 2,449 enrollments (1,943 non-pilot enrollments and 506 pilot enrollments).

- PSH cohort: The proportion of persons with viral load suppression was 76% among PSH pilot enrollees and 74% among non-pilot enrollees and corresponded to a crude odds ratio (OR) of 1.03 ((95% Confidence Interval (CI)) (0.97, 1.10). In an analysis adjusted for baseline demographic and clinical differences between the pilot and non-pilot groups, the *pilot had a null effect* on the odds of VLS: aOR 1.11 (0.82, 1.50).

- TSH cohort: The proportion of persons with viral load suppression was 65% among TSH pilot enrollees and 62% among non-pilot enrollees, which corresponded to an odds ratio (OR) of 1.14 (0.93, 1.39). In the adjusted analysis, the *TSH pilot intervention increased the odds of VLS*: aOR 1.31 (1.02, 1.69).

Conclusions: These preliminary findings, based on a non-randomized, observational study design to assess intervention effectiveness, should be interpreted cautiously, and the final impact evaluation should include a robust assessment of differences between the pilot and non-pilot arms that may otherwise explain VLS effects. However, after 12 months of enrollment, these findings provide early support of the hypotheses and suggest that the pilots may be working to increase VLS among the TSH pilot clients and are not having a negative impact on PSH pilot clients.

Contents

Abbreviations

aOR	Adjusted Odds Ratio
CI	Confidence Interval
CSRO	Commercial Single Room Occupancy
DSD	Differentiated Service Delivery
HASA	HIV/AIDS Services Administration
IDU	Injection Drug Use
ITT	Intention to Treat
MSM	Men who have Sex with Men
OR	Odds Ratio
PSH	Permanent Supportive Housing
PWH	Persons with HIV/AIDS
TSH	Transitional Supportive Housing
VLS	Viral Load Suppression

Introduction

The HIV/AIDS Services Administration (HASA) is a program of the New York City Human Resources Administration (HRA) that serves low-income persons living with HIV in New York City. HASA provides public benefits, case management, housing, and other services to its clients. HASA clients face barriers to effective care that can result in high utilization of health care services yet poor health outcomes. New collaborations among HASA and community-based partners offer the opportunity for integrated care planning and differentiated service delivery (DSD) strategies designed to better coordinate existing HASA resources with housing, health care, and psychosocial services to achieve improved HIV and housing outcomes for all HASA clients.

DSD is a patient-centered approach to HIV prevention and care that provides a framework for reexamining service delivery in order to tailor HIV services across the treatment cascade to reflect the preferences and circumstances of different groups of people with HIV, reduce unnecessary burdens on systems of care, and refocus resources to target clients most in need. HASA, in collaboration with community partners, has developed demonstration projects that incorporate DSD principles in order to improve the experience of clients who move through the HASA system and to make HASA services more efficient and better aligned with health care integration.

In September 2018, HASA initiated two three-year pilots: the Permanent Supportive Housing (PSH) pilot and Transitional Supportive Housing (TSH) pilot. The pilot projects feature specialized units of HASA caseworkers whose caseloads are determined based on client acuity, as determined by housing status. The pilots presume that residents of transitional housing are in greater need of intensive HASA intervention, while clients living in permanent supportive housing, particularly durably virally suppressed clients, are more stable and in need of a less intensive touch from HASA. Consequently, HASA caseworkers in the TSH pilot have a 25:1 caseload ratio while HASA caseworkers in the Permanent Housing Pilot have a 50:1 client caseload ratio. Other notable changes to standard practice include 1) housing specific assignment, HASA caseworkers having all transitional cases at pilot housing provider sites versus caseworkers having clients with a mix of housing categories at non-pilot sites, and 2) HASA and housing providers prioritizing viral suppression and health promotion. Clients are enrolled in the pilot based on assignment to a pilot apartment or pilot unit, and the PSH or TSH pilot HASA caseworker dedicated to a pilot unit. When a client leaves a pilot apartment or unit, the client is assigned a new caseworker. The TSH and pilots did not utilize randomization to assign clients to a unit.

The **aim** of the interim impact report was to compare viral load suppression (VLS) among persons living with HIV (PWH) who were enrolled in the pilot with VLS among PWH who were enrolled in traditional housing models. We hypothesized that VLS among PWH in the PSH pilot would *not be different* than PWH who received traditional PSH, despite a higher caseload ratio in the pilot relative to the traditional PSH model. For the TSH pilot, we hypothesized that PWH enrolled in the pilot would *have greater VLS* relative to PWH in traditional TSH, given the lower caseload ratio relative to traditional TSH model. Table 1 details the key pilot elements, aims, and intended outcomes.

Methods

Data Sources

NYC DOHMH HIV/AIDS Surveillance Registry (the Registry)

The DOHMH has conducted population-based, name-based AIDS surveillance since 1981,(1) and HIV surveillance since 2000.(2) Electronic reporting of all HIV-related laboratory tests, including positive diagnostic tests, VL, CD4 and viral nucleotide sequences, has been mandatory under NYS law since 2005, and yields a high degree of completeness. The DOHMH routinely leverages HIV Registry data(1) to track new diagnoses,(2-4) linkage to and engagement in HIV care(5, 6) (using VL and CD4 tests as proxies for primary care visits),(7) VL suppression,(8, 9) progression to AIDS, and death. The HIV Registry is continuously updated with new, de-duplicated HIV diagnoses and longitudinal laboratory results. There are regular matches with the NYC Vital statistics Registry, National Death Index, and Social Security Death Master File.(5) Use of the Registry ensures near 100% ascertainment of our primary and secondary clinical HIV outcomes. For these analyses, we used registry data reported as of June 30, 2020.

HASAweb data shared with the Department of Health and Mental Hygiene

The DOHMH receives housing services data from HASA each quarter. The data arrive in the form of a "client" dataset with one record per person enrolled in the quarter, and an "address" dataset with one record per stay that a person who was enrolled in the quarter ever had at a residence in their entire history as a HASA client. DOHMH Division of Disease Control staff from the Housing Services Unit and the HIV Epidemiology Program work collaboratively to match the HASA client dataset to the NYC HIV surveillance registry (eHARS) via a 36-key match algorithm, taking into account previous HASA-eHARS record linkages, and manually reviewing tentative matches to make a final determination. When each quarter's match is finalized, new and updated results are appended to a HASA-eHARS master match file that also reflects ongoing QA-related changes to eHARS such as resolution of duplicate or merged cases. The analysis utilized HASA data on enrollments and housing type (PSH or TSH) and pilot status (pilot or nonpilot). For these analyses we used enrollments reported through September 15, 2019.

Cohort Creation

Clients were non-randomly enrolled in the pilot based on assignment to a pilot apartment or pilot unit, For this observational study design, we merged HASA data, which detailed assignment to a pilot or non-pilot unit, with Registry data, which contained demographics and laboratory information, to create two retrospective cohorts. The PSH cohort included persons enrolled in the PSH pilot or enrolled in traditional PSH (non-pilot). The TSH cohort included persons enrolled in the TSH pilot or enrolled in traditional TSH (non-pilot). A person could appear more than once in a pilot or nonpilot arm within the PSH or TSH cohorts. A person could appear in the TSH cohort at one point in time, and in the PSH cohort at another point in time.

Measures

Outcome

The follow-up period extended through March 15, 2020. The primary outcome was viral load suppression (VLS). VLS was defined as having the most recent available VL value (from the frozen HIV surveillance dataset) <200 copies/mL in the 6-month period following date of enrollment (i.e., VLS='Yes'). Individuals with no VL test in the Registry during the look-back period are considered unsuppressed, given these individuals are presumed to reside in NYC and should have regular viral load

monitoring if they are accessing medical care. The proportion missing a VL was numerically higher among non-pilot than pilot enrollees (PSH: 6% or 21/359 pilot enrollees missing VL and 9% or 418/4,628 non-pilot enrollees missing VL and TSH: 7% or 33/506 pilot enrollees missing VL and 10% or 198/1,943 non-pilot enrollees missing VL).

Index Date

The date of pilot enrollment was the index date, or the point from which we measured outcomes. For the non-pilot arms, the index date was the earlier of the start of the pilot (September 24, 2018) or enrollment in a PSH or TSH unit after September 24, 2018. A person could have multiple index dates, one for each enrollment in a pilot or nonpilot housing unit within PSH or TSH cohorts.

Covariates

We included some demographic and clinical variables as model covariates: sex, race/ethnicity, age as of pilot enrollment, HIV transmission risk category, AIDS diagnosis as of pilot enrollment, baseline viral load, baseline CD4 and the number of laboratory events reported in the 6 months prior to enrollment. Baseline viral suppression was defined based on the last viral load test reported in the 6 months *preceding* the index date. Baseline CD4 count was defined based on the last CD4 count reported in the 6 months *preceding* the index date. We also examined the number of labs reported to the Registry in the year prior to the index date, as a proxy for engagement in HIV medical care.

Statistical Analysis

To assess the effectiveness of the pilot on VLS, we used an intention to treat (ITT) approach. Thus, we did not restrict to people enrolled for a minimum length of time. We used a logistic regression model (logit link with binomial distribution) and generated odds ratios using the GENMOD procedure in SAS Version 9.4. The model included a group indicator (pilot or non-pilot) and adjusted for an a priori list of demographic and clinical variables: sex, race/ethnicity, age as of pilot enrollment, HIV transmission risk category, AIDS diagnosis as of pilot enrollment, baseline viral load, baseline CD4 and the number of labs reported in the year prior to enrollment. We ran two adjusted models, one for each cohort. The primary analysis was a complete case analysis, restricted to persons without any missing baseline CD4 or VL data. As a sensitivity analysis, we included a missing indicator so that persons missing baseline CD4 or VL were not excluded from the models.

For this interim analysis, we did not run statistical tests for frequencies or account for persons appearing more than once within a cohort (e.g., appearing in the pilot and nonpilot arm of the PSH cohort). We have described the number of instances people re-appeared. We also did not look at housing outcomes due to 1) previous agreement and the desire to focus on VLS and 2) given access to data has been restricted as a result of COVID-19 policies and the short timeframe for developing reports.

Results

Characteristics of PSH Cohort

The PSH cohort included a total of 4,987 enrollments (4,628 non-pilot enrollments and 359 pilot enrollments). Twenty-three people (0.004% of total PSH enrollments) enrolled more than once (18 in non-pilot and 5 in pilot), and four people were pilot and non-pilot enrollees. The pilot and non-pilot arms were similar in terms of demographics, HIV transmission risk category, and number of laboratory events reported in the year prior to enrollment (Table 2). Among pilot enrollees, the majority were male (74%) and 58% were black non-Hispanic, 25% were Hispanic, and 12% were white non-Hispanic. The median age at enrollment into the pilot was 55 years. By HIV transmission risk category, 31% were men who have sex with men (MSM), 23% had a history of injection drug use (IDU), and 21% had heterosexual contact. The pilot enrollees had a slightly higher baseline proportion with VLS and a slightly higher median baseline CD4 counts than non-pilot enrollees (VLS: 78% in pilot versus 74% in non-pilot and median CD4 (interquartile range (IQR)): 538 cells/mm^3 (309, 797) in pilot and 517 cells/mm^3 (314, 761) in non-pilot).

Characteristics of TSH Cohort

The TSH cohort included a total of 2,449 enrollments (1,943 non-pilot enrollments and 506 pilot enrollments). 168 people (7% of total TSH enrollments) enrolled more than once (158 in non-pilot and 10 in pilot), and 91 people were pilot and non-pilot enrollees. Among pilot enrollees, the majority were male (69%), 62% were black non-Hispanic, 26% were Hispanic, and 6% were white non-Hispanic (Table 3). Compared to non-pilot enrollees, the pilot enrollees were older (median 45 years versus 40 years at enrollment), more female (31% versus 18%) and more likely to have an IDU (18% versus 11%) or heterosexual (20% versus 13%) transmission risk category. The pilot enrollees had a slightly higher baseline proportion with VLS and a slightly *lower* median baseline CD4 counts than non-pilot enrollees (VLS: 60% in pilot versus 55% in non-pilot and median CD4 (interquartile range (IQR)): 478 cells/mm^3 (277, 711) in pilot and 498 cells/mm^3 (293, 743) in non-pilot).

Viral Load Suppression – PSH

The proportion of persons with viral load suppression was 76% among pilot enrollees and 74% among non-pilot enrollees (Table 4) and corresponded to a crude odds ratio (OR) of 1.03 ((95% Confidence Interval (CI)) (0.97, 1.10).

- In the adjusted analysis, which for the primary analysis was restricted to persons without missing CD4 or VL (N = 4,337 or 87% of all persons in the PSH cohort), the pilot intervention appeared to have no effect on the odds of VLS: aOR 1.11 (0.82, 1.50).
- When we ran the model with all enrollments (N = 4,987), the pilot intervention appeared to have no effect on the odds of VLS: aOR (1.09 (0.83, 1.45).

Most persons (80% of all PSH pilot enrollees, N = 288/359) were enrolled in the pilot for at least 180 days, one-fifth (19%, N=69/359) were enrolled for 30-179 days and 1% (N=2/359) were enrolled in the pilot for less than 30 days (Table 5). Viral suppression increased with length of enrollment in the pilot: 0% among 2 persons enrolled for 0-29 days, 64% among 69 persons enrolled for 30-179 days, and 79% for 288 persons enrolled for at least 180 days. For this interim report, we did not assess the trend for significance.

Viral Load Suppression – TSH

The proportion of persons with viral load suppression was 65% among pilot enrollees and 62% among non-pilot enrollees (Table 4), which corresponded to an odds ratio (OR) of 1.14 (0.93, 1.39).

- In the adjusted analysis, which for the primary analysis was restricted to persons without missing CD4 or VL at baseline (N = 2,011 or 82% of all enrollments), the TSH pilot intervention increased the odds of VLS: aOR 1.31 (1.02, 1.69).
- When we ran the model with all enrollments (N = 2,449), the TSH pilot intervention increased the odds of VLS. However, the effect was no longer statistically significant: aOR 1.19 (95% CI: 0.95, 1.50).

Most persons (65% of all TSH pilot enrollees, N = 327/506) were enrolled in the pilot for 30-179 days, 28% (N=139/506) were enrolled for at least 180 days, and 8% (N=40/506) were enrolled in the pilot for less than 30 days. Viral suppression increased with length of enrollment in the pilot: 58% among 40 persons enrolled for 0-29 days, 65% among 327 persons enrolled for 30-179 days, and 70% for 130 persons enrolled for at least 180 days. For this interim report, we did not assess the trend for significance.

Summary

- No difference in viral suppression was observed in the PSH pilot relative to non-pilot (aOR: 1.11 (0.82, 1.50)), and the odds of viral suppression were increased in the TSH pilot relative to the non-pilot (aOR 1.31 (1.02, 1.69)). These preliminary and observational findings support our hypotheses and suggest that the pilots may be working to increase VLS among the TSH pilot clients and are not having a negative impact on PSH pilot clients.
- The proportion of pilot enrollees with VLS increased with length of enrollment in the pilot. As specified in the analytic protocol, future analyses will examine the relationship between length of enrollment and outcomes, including more favorable housing outcomes, such as stability and moving on.
- Our preliminary results are based on an ITT framework. Thus, someone enrolled in the pilot for any length of time is included in the analysis. The advantage of the ITT approach is that we demonstrate the real-world-effect of the pilot, which includes short-enrollment periods. However, the ITT approach should also result in more conservative effect estimates than the true pilot effect, given some people, including those with very short enrollments, may not receive the pilot intervention as designed.
- In the secondary analysis, when we estimated the pilot effect among all TSH enrollees (N = 2,449), the estimate was no longer significant (aOR 1.19 (95% CI: 0.95, 1.50)). Whereas in the primary analysis, we restricted to the N = 2,011 people with complete data and observed a positive pilot effect ((aOR 1.31 (1.02, 1.69)). We note that the results from the primary and secondary analysis are generally aligned. The persons missing data were either missing baseline CD4 or baseline VL. For these secondary analyses, we used a crude adjustment method where missing data was coded as missing data. We did not impute or make assumptions about the values of the missing information, for example, assuming persons missing data were more likely to have high CD4 counts. Differences in persons missing data between the pilot and non-pilot may explain these results. As agreed in the analytic protocol, the final report will incorporate more sophisticated statistical analyses than was performed for these interim analyses.

Limitations

Uncontrolled confounding. As is the case with all observational research, these effects may be subject to confounding or differences between the pilot and non-pilot clients that could not be controlled for in the analysis and may otherwise explain the pilot effect on VLS. For instance, we observed differences between the pilot and non-pilot arms with respect to baseline VLS and baseline CD4 counts. These baseline differences between the pilot and non-pilot arms are due to the non-random design. Therefore, we aim to control these differences in baseline characteristic, which may otherwise explain the pilot effect on VLS. This analysis adjusted for demographic and clinical confounders, such as baseline care engagement which would be expected to influence VLS. We cannot control for differences outside of what is captured in the Registry. For example, differences between the pilot and non-pilot with respect to caseworkers, housing providers, HIV treatment, or services received outside of housing (e.g., receipt of medical case management) may influence the observed association. One important consideration would be differences in who was selected to be a pilot caseworker or a pilot housing provider.

The small effect estimate reported for the TSH pilot is of concern (aOR: 1.31, 95% CI 1.02-1.69). When effect estimates from observational studies are close to the null value of 1, we worry that further model

adjustment may move the value closer to the null or that residual confounding may otherwise explain the positive results. (10, 11)

Statistical power. The study remains underpowered, which may impact conclusions thus far, as an underpowered study could result in null effect estimates. However, after the first 12 months or one-third of the pre-planned recruitment period, the PSH cohort has nearly met final recruitment targets. The TSH cohort has met interim recruitment targets.

- The pre-specified sample size for the PSH was a cohort of 5,270 persons with N = 370 in the pilot. The sample size after 12 months was 4,987 enrollments with 359 pilot enrollments). One-third of the overall sample size (0.33 * 5,270) is N=1,739 and N = 122 pilot enrollees
- The pre-specified sample size for the TSH was a cohort of 4,700 persons (with N = 1,300 in the pilot). The sample size after 12 months was 2,499 people in the PSH cohort with 506 pilot enrollments. One-third of the overall sample size (0.33 * 4,700) is N=1,551 and N = 429 pilot enrollees.

Conclusion

These preliminary findings, based on a non-randomized, observational study design, should be interpreted cautiously, and the final impact evaluation should include a robust assessment of differences between the pilot and non-pilot arms that may otherwise explain VLS effects. However, after 12 months of enrollment, these findings provide early support of the hypotheses and suggest that the pilots may be working to increase VLS among the TSH pilot clients and are not having a negative impact on PSH pilot clients.

Tables

Table 1. Key Elements of the Pilots: Permanent and Transitional Supportive Housing Models

PSH and TSH pilot elements					
Pilot	**Pilot design**	**Estimated # of unique clients to be enrolled over 3 years**	**Caseload to caseworker ratios intervention arm & type of clients**	**Caseload to caseworker ratios control arm & type of clients**	**Research aims and intended outcomes**
Permanent	Cohort study	~ 370 (intervention) ~4900 (control)	50:1 Single clients. Non-mix/single housing	Mandated 34:1,for single clients. 25:1 family cases. Mixed housing types	Maintain rates of VLS and transition to independent living relative to non-pilot clients
Transitional	Cohort study	~1300 (intervention) ~3400 (control)	25:1 Single clients. Non-mix/single housing	Mandated 34:1,for single clients. 25:1 family cases. Mixed housing types	Improve VLS and transition to permanent housing relative to non-pilot clients

Table 2. Characteristics of Persons in Permanent Supportive Housing and Enrolled from September 24, 2018 to September 15, 2019

	Non-Pilot		**Pilot**	
	N	**%**	**N**	**%**
Total	4628	100.0	359	100.0
Sex				
Female	1274	27.5	94	26.2
Male	3354	72.5	265	73.8
Race/Ethnicity				
Black	2662	57.5	208	57.9
Hispanic	1254	27.1	91	25.3
White	451	9.7	45	12.5
Asian/Pacific Islander	27	0.6	3	0.8
Other/Unknown	234	5.1	12	3.3
Age as of pilot enrollment - median	54		55	
Transmission Risk				
Men who have sex with men (MSM)	1469	31.7	111	30.9
Injection Drug Use History (IDU)	1095	23.7	83	23.1
MSM-IDU	293	6.3	21	5.8
Heterosexual Contact	827	17.9	76	21.2
Transgender People With Sexual Contact	133	2.9	10	2.8
Other/Unknown	811	17.5	58	16.2
AIDS diagnosis as of pilot enrollment				
No	1404	30.3	118	32.9
Yes	3224	69.7	241	67.1
Baseline VL				
<200	3414	73.8	279	77.7
≥200	809	17.5	56	15.6
Missing	405	8.8	24	6.7
Baseline CD4 Count - median (IQR)	517 (314, 761)		538 (309, 797)	
Number of Labs in Year Prior - median (IQR)	2 (1, 2)		2 (1, 2)	

Table 3. Characteristics of Persons in Transitional Supportive Housing and Enrolled from September 24, 2018 to September 15, 2019

	Non-Pilot		Pilot	
	N	**%**	**N**	**%**
Total	1943	100.0	506	100.0
Sex				
Female	369	19.0	157	31.0
Male	1574	81.0	349	69.0
Race/Ethnicity				
Black	1123	57.8	311	61.5
Hispanic	466	24.0	131	25.9
White	191	9.8	29	5.7
Asian/Pacific Islander	21	1.1	4	0.8
Other/Unknown	142	7.3	31	6.1
Age as of pilot enrollment - median	40		45	
Transmission Risk				
Men who have sex with men (MSM)	915	47.1	183	36.2
Injection Drug Use History (IDU)	206	10.6	92	18.2
MSM-IDU	139	7.2	23	4.5
Heterosexual Contact	252	13.0	100	19.8
Transgender People With Sexual Contact	151	7.8	40	7.9
Other/Unknown	280	14.4	68	13.4
AIDS diagnosis as of pilot enrollment				
No	1035	53.3	245	48.4
Yes	908	46.7	261	51.6
Baseline VL				
<200	1070	55.1	304	60.1
≥200	521	26.8	148	29.2
Missing	352	18.1	54	10.7
Baseline CD4 Count - median (IQR)	498 (293, 743)		478 (277, 711)	
Number of Labs in Year Prior - median (IQR)	2 (1, 3)		2 (1, 3)	

Table 4. Short-term Viral Suppression Permanent or Transitional Supportive Housing, Persons Enrolled from September 24, 2018 to September 15, 2019

	Overall		Non-Pilot		Pilot		OR (95% CI)	aOR[1,2] (95% CI)
Group	Denominator	% VLS	Denominator	% VLS	Denominator	% VLS		
PSH	4,987	74%	4,628	74%	359	76%	1.03 (0.97, 1.10)	1.11 (0.82, 1.50)
TSH	2,449	63%	1,943	62%	506	65%	1.14 (0.93, 1.39)	1.31 (1.02, 1.69)

1.Model adjusted for sex, race, age, transmission risk, AIDS diagnosis, baseline VL, baseline CD4 and number of laboratory events
2.N = 4,337 (87%) of observations used in PSH model. N = 2,011 (82%) observations used in the TSH model

Table 5. Short-term Viral Suppression Permanent or Transitional Supportive Housing Pilot – Stratified by length of Enrollment, September 24, 2018 to September 15, 2019

Group	N (%)	Proportion with VLS
PSH Total	359 (100)	
Enrolled <30 days	2 (0.6)	0%
30 – 179	69 (19.2)	64%
180+ days	288 (80.2)	79%
TSH Total	506 (100)	

Enrolled <30 days	40 (7.9)	58%
30 – 179	327 (64.6)	65%
180+ days	139 (27.5)	70%

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