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Telemedicine and Visit Completion Among People with HIV During the COVID-19 Pandemic Compared to Pre-Pandemic

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Abstract

Objectives: Telemedicine became the primary mode of delivering care during the COVID-19 pandemic. We describe the impact of telemedicine on access to care for people with HIV (PWH) by comparing the proportion of PWH engaged in care prior to and during the COVID-19 pandemic.

Design and Methods: We conducted an observational analysis of patients enrolled in the Johns Hopkins HIV Clinical Cohort, a single-center cohort of patients at an urban HIV subspecialty clinic affiliated with an academic center. Due to the COVID-19 pandemic, the clinic transitioned from in-person to mostly telemedicine visits. We compared patients receiving care in two time periods. The pre-pandemic period included 2,010 people with ≥1 visit scheduled between September 1st 2019 and March 15th 2020. The pandemic period included 1,929 people with ≥1 visit scheduled between March 16th 2020 and September 30th 2020. We determined the proportion of patients completing ≥1 of their scheduled visits during each period.

Results: Visit completion increased significantly from 88% pre-pandemic to 91% during the pandemic (p=0.008). Visit completion improved significantly for patients age 20–39 (82% to 92%, p<0.001), women (86% to 93%, p<0.001), Black patients (88% to 91%, p=0.002) and patients with detectable viremia (77% to 85%, p=0.06) during the pandemic. Only 29% of people that completed ≥1 telemedicine visit during the pandemic did so as a video (versus telephone) visit.

Conclusions: During the pandemic when care was widely delivered via telemedicine, visit completion improved among groups with lower pre-pandemic engagement, but most were limited to telephone visits.

Keywords

Telemedicine; Human Immunodeficiency Virus; COVID-19 Pandemic; Patient Engagement; Continuum of Care

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Introduction

Optimizing engagement in care is essential to ending the HIV epidemic.[1] With access to antiretroviral therapy and consequent durable viral suppression, prognosis among persons with HIV (PWH) dramatically improves[2] and HIV transmission risk is reduced.[3] As such, the majority of new infections arise from those inadequately engaged in care.[4]

The rapid scale-up of telemedicine during the COVID-19 pandemic[5,6] provides a unique opportunity to investigate telemedicine's potential as a tool for engagement. Prior to the pandemic, the use of video visits for care delivery was limited mainly to rural areas[7–9], prison systems,[10] Veterans Affairs systems,[9] and niches where chronically stable patients opted into telemedicine.[11] There are limited data on how most patients engage in routine HIV care when telemedicine is the default option for clinic visits. Furthermore, it is unknown whether telemedicine can reach groups that have been previously identified as being at risk for missing visits, including patients with history of substance use disorder, mental health disorders, limited social support, or those living in areas of increased unemployment or poverty.[12]

In this analysis, we describe visit completion during a period of telemedicine adoption early in the pandemic and compare this to visit completion prior to the pandemic when care was delivered exclusively in-person. We describe patient characteristics associated with visit completion in each period and test whether these associations changed with the introduction of telemedicine. Finally, among patients who completed at least one telemedicine visit, we identified demographic and clinical factors associated with probability of completing a video visit, as opposed to telephone visit(s).

Methods

Study sample.

The John G. Bartlett Specialty Practice is a large subspecialty clinic affiliated with the Johns Hopkins Hospital, caring predominantly for PWH or Hepatitis C in East Baltimore. PWH enrolled in continuity care at the clinic who consent to share their data are enrolled into the Johns Hopkins HIV Clinical Cohort (JHHCC).[13] The JHHCC extracts data from the electronic medical record on patient characteristics including self-reported age, sex at birth, race, ethnicity, HIV acquisition risk factors, and clinical information including clinical visits, hospitalizations, labs, prescribed medications, and clinical diagnoses including substance use and mental health disorders.

On March 16th, 2020 the clinic transitioned to almost entirely telemedicine visits in response to the onset of the COVID-19 pandemic.[14] At the time of the transition, clinic staff attempted to contact all scheduled patients to reschedule their visits to telemedicine encounters. Telemedicine encounters were conducted between patients and providers as either synchronous audio-video encounters or audio-only telephone encounters. Clinicians were provided written instruction on using the electronic platform and were directed to use the telemedicine encounters to recreate in-person visits to the best of their ability. Providers were located either at home or on-site in individual clinic rooms, and were instructed to confirm that patients had the privacy to speak freely at the start of each encounter and understood the privacy risks inherent to a remote visit. All patients were encouraged to schedule a video visit by default, but if they declined or were unable to connect during their visit, the encounter was converted to a telephone call. During the studied pandemic period, a limited number of in-person visits were permitted for acute concerns or initiation of antiretroviral therapy.

This analysis included all cohort participants with at least one scheduled visit between September 1st 2019 and September 30th 2020, a thirteen-month period centered around the transition to telemedicine. Participants were sorted into two groups: a pre-pandemic group and a pandemic group. The pre-pandemic group included participants with at least one visit scheduled from September 1st 2019 to March 15th 2020. The pandemic group included participants with at least one visit scheduled from March 16th 2020 to September 30th 2020. Participants were eligible for inclusion in both groups if they had visits scheduled in both periods.

Outcome.

The primary outcome for patients in each period was the completion of at least one scheduled visit during the period of interest, irrespective of visit type (in-person or telemedicine). Pre-pandemic, all visits were in-person. During the pandemic, visits were primarily telemedicine (video or telephone), although a small number of in-person visits were also included.

Covariates.

Covariates included age, sex at birth, race, ethnicity, and self-reported HIV risk factors (not mutually exclusive): injection drug use (IDU), high-risk heterosexual intercourse, or men who had sex with men (MSM). Age was defined as a categorical variable using 3 intervals: 20–39 years, 40–60 years, and >60 years. We also included recent substance use, duration in care, and viral suppression. Recent substance use was defined based on the most recent medical record abstraction, conducted every 6 months by trained medical chart abstractors to identify medical record evidence of active substance use including physicians' notes, toxicology screens, and referrals to treatment. Duration in care was measured as years elapsed from a patient's first visit to the clinic until the start of the pandemic period (March 16th 2020). Viral suppression was defined as having a viral load ≤200 copies/ml at the most recent lab in the year prior to September 1st 2019 for the pre-pandemic group and the year prior to March 16th 2020 for the pandemic group.

Statistical analysis.

We present the proportion of participants that completed ≥1 visit, both pre-pandemic and during the pandemic. We examined risk factors for visit completion during each period using log-binomial regression models fit with generalized estimating equations to account for correlated outcomes due to the same participants possibly contributing records to both periods.[15] We report stratified, unadjusted risk ratios with 95% confidence intervals for each covariate above. We used a model with a single term for time period to examine overall differences in visit completion between the two periods for each subgroup. To identify whether risk ratios for the associations between participant characteristics and visit completion differed between the two periods we report p-values for an interaction term between each characteristic and time period. For interaction terms, given the smaller group sizes we defined statistical significance as p<0.1.[16,17] We did not adjust our estimates because we thought crude associations present a more realistic description of the associations in this descriptive analysis.[18]

Secondary analysis.

To contextualize our findings, a secondary analysis was conducted to specifically assess video visit completion. Our study sample was participants who completed ≥1 telemedicine visits from March 16 – September 30, 2020 to identify factors associated with completion of ≥1 video visit. We adjusted for age, race, HIV risk factor and recent substance use, and report adjusted risk ratios from a log-binomial model.

Results

Patient Characteristics:

During the pre-pandemic period (September 1st 2019 to March 15th 2020) 2,010 participants had at least one visit scheduled. During the pandemic period (March 16th 2020 to September 30th 2020) 1,929 participants had at least one visit scheduled. There were 1,834 participants with a visit scheduled in both periods. Given the substantial overlap, the two groups were very similar in distribution of age, gender, race, ethnicity, HIV risk factors and rates of viral suppression (Table 1). The median (interquartile range) numbers of scheduled visits per person during the pre-pandemic and pandemic periods were 2 (2, 4) and 2 (1, 4) respectively.

Pre-Pandemic Period:

Pre-pandemic, 88% of scheduled participants completed at least one visit (Table 2). During that same period, participants age > 60 were 1.14 (95% Confidence Interval (CI): 1.07,1.20) times as likely as those aged 20–39 to complete ≥1 visit (93% vs. 82%). Men were 1.05 (95% CI: 1.01,1.08) times as likely as women to complete ≥1 visit (90% vs. 86%). Participants who were virally suppressed were 1.17 (95% CI: 1.07, 1.28) times as likely as those who were not to complete ≥1 visit (90% vs. 77%).

Pandemic Period:

Among participants scheduled during the pandemic period, 84% had ≥1 scheduled telemedicine visit, while 16% were scheduled exclusively for in-person visits. During this period, 91% of all scheduled participants completed at least one visit, irrespective of visit type (in-person vs. telemedicine). Of those with telemedicine visits scheduled, 99% completed ≥1 telemedicine visit. Of those with only in-person visits scheduled during the pandemic, 48% completed ≥1 visit. In contrast to pre-pandemic, during the pandemic no participant characteristics were statistically significantly associated with visit completion.

Differences between the Pre-Pandemic and Pandemic Periods:

The increase in visit completion from 88% pre-pandemic to 91% during the pandemic was statistically significant (p=0.008). In the pandemic period, there were no differences in visit completion across age groups. This was primarily due to visit completion improvement among younger age groups compared to pre-pandemic. Similarly, disparities in visit completion associated with sex at birth and race were also diminished; visit completion for women increased from 86% pre-pandemic to 93% during the pandemic (p<0.001) and among Black patients it increased from 88% pre-pandemic to 91% during the pandemic (p=0.002). Participants who had detectable viremia had an increase in visit completion from 77% pre-pandemic to 85% during the pandemic (p=0.06). In the appendix we present adjusted risk ratios, which are largely similar.

Factors Associated with Video Visits:

Among 1,600 participants who completed at least one telemedicine visit, only 468 (29%) completed ≥1 visit using a video visit as opposed to a telephone visit (Table 3). We adjusted for age, sex at birth, HIV risk factor and recent heroin or cocaine use in our subgroup analyses. Participants age ≥60 years were 0.60 [95% CI: 0.49, 0.75] times as likely as those aged 20–39 to complete a video visit (23% vs. 42%). Male participants were 0.76 [95% CI: 0.62, 0.94] times as likely as female participants to complete a video visit. Video visit completion among Black participants was 0.60 [95% CI: 0.42, 0.87] times as likely as among white participants (25% vs. 46%). Participants with IDU as a risk factor for HIV acquisition were 0.62 [95% CI: 0.47, 0.81] times as likely as other participants to complete a video visit (15% vs. 34%). Those with recent heroin or cocaine use were 0.53 [95% CI: 0.32, 0.89] times and those with recent smoking were 0.70 [95% CI: 0.58, 0.85] times as likely as those without to complete a video visit.

Discussion

During the first 6.5 months of the COVID-19 pandemic when care was predominantly delivered via telemedicine, overall visit completion was higher than during the pre-pandemic comparison period. This improvement was concentrated among populations with lower pre-pandemic visit completion: younger patients, women, patients whose most recent viral load was not suppressed, patients who had recently established care, or non-MSM patients. While many patients engaged with telemedicine during the pandemic, 71% of their telemedicine visits were telephone visits. Patients who were older, male, Black, or had a history of substance use disorder were most likely to have a telephone rather than video visit. The effect of telephone visits compared to video visits or in-person visits on quality of care is unknown; future studies are needed to investigate the differential impact of these engagement modalities.

Groups with lower probabilities of in-person visit completion pre-pandemic saw the greatest improvement in visit completion with telemedicine during the pandemic. While older participants maintained high levels of visit completion in both study periods, younger participants significantly improved visit completion during the pandemic period. This may reflect high technological literacy among younger patients,[19,20] but the appeal of telemedicine compared to in-person visits among this group warrants more study. Similarly, women saw an improvement in visit completion during the pandemic, while men's visit completion rate was unchanged. This may be due to telemedicine's ability to mitigate barriers to care that disproportionately impact female patients such as transportation and the burden of caregiving.[21,22] Those who were not virologically suppressed also saw improved visit completion during the pandemic, while those who were suppressed maintained the same high pre-pandemic visit completion. The improved visit completion in various subgroups suggests that telemedicine may overcome barriers to care faced by populations historically at risk for missing visits.

Although telemedicine was associated with higher visit completion, a significant proportion of participants used telephone rather than video for their visits. Telephone-only visits were more common in patients who were older, male, had substance use disorder or were Black. The higher use of telephone over video visits among our participants is likely multifactorial, including inconsistent access to a high-speed internet connection or a video-capable device (smartphone, tablet, or computer).[5,23–25] This "digital divide" may partly be a function of socioeconomic status,[26,27] which has an outsize effect on PWH, a population disproportionately affected by social determinants of health.[5,23,28] Our telephone use findings mirror demographics across the digital divide, with older patients and racial minorities at higher risk for limited internet and computer access.[5,29,30] In our study, older individuals had higher use of telephone over video visits which may be explained by the lower rates of technological literacy[19,20] and disparities in computer and internet access seen in this group[29–31] Our findings of lower video visit use among Black participants are consistent with emerging data on this topic,[29,31,32] which may also be due to the disparate impact of the digital divide.[33] This mirrors a wide array of racial disparities seen across the healthcare system, rooted in the interlocking systems of structural racism. This may include but is not limited to sequelae of historically segregated housing policies, employment discrimination, wage disparities, and other factors that create and compound socioeconomic disparities.[34] This in turn likely translates to reduced access to the technology and infrastructure needed for video visits.[35] Participants with substance use disorder were also less likely to use video visits, which warrants further study given the increasing interest in telemedicine as a modality for providing substance use treatment, both before and during the pandemic.[36] The effect of telephone compared to video visits is not yet fully understood and may negatively impact the quality of care for these patients, because video visits provide for a more personal encounter and allow some degree of visual examination.[5] The findings also have meaningful implications for access to care. Prior to the pandemic, telephone visits were not consistently reimbursed at the same rate as video visits.[5] If we revert to this payment model, this may disincentivize clinics from offering telephone visits thereby limiting telemedicine access to some groups and exacerbating disparities in care.

The groups scheduled for a visit in both study periods have a large number of overlapping patients. This mitigates the probability that our results are biased by unmeasured, time-fixed confounders (since patients are largely acting as comparisons for themselves). Historically, telemedicine has been implemented selectively in populations where it was anticipated to improve access to care, such as rural settings where the distance to care was a factor, correctional facilities where specialist care was limited, or patients who opt-in due to technological literacy and access.[7,11,37–39] This pandemic is the first time that telemedicine has been adopted this widely, creating a unique opportunity to understand if its effects on engagement vary across subgroups. The findings can be used to inform the implementation of telemedicine beyond the pandemic, by recognizing what populations are at risk for disparate telemedicine access and tailoring interventions to mitigate those effects or continuing telephone visit reimbursement at levels comparable to video visits.

We note several caveats and limitations in this analysis. Given the high baseline visit completion, the maximum possible observable risk ratios for this outcome are capped at 1.14. This would correspond to visit completion of 100%, relative to 88% pre-pandemic. Thus, despite the modest magnitude of the presented ratios, we interpret them as representing meaningful gains among the 12% of patients who were missing visits pre-pandemic. It is important to note however that the transition to telemedicine occurred due to the pandemic, thus we are unable separate the effects of conversion to telemedicine from the effects of the pandemic. This should frame the interpretation of the data, and raises several important points. Telemedicine visit completion rates during this early period of the pandemic may not reflect rates during other periods of time when there is not an abrupt conversion of in-person visits to telemedicine visits. Our data were also collected from a single-site, in an urban setting at an academic center in a comparatively resource rich setting. Any generalizations of our findings made beyond this context need to be done so cautiously, given the heterogeneity of patient populations and means of implementation of telemedicine across the world. Additionally, any future implementation of telemedicine beyond the pandemic would likely be complementary to, rather than a replacement of, in-person care. Importantly, this work only analyzes visit completion and does not evaluate the quality of care provided via telephone versus video versus in-person visits. Future studies will be needed to determine if engagement through telemedicine translates into viral suppression, in the same way in-person engagement does,[40] which would have implications for disease mortality[2] and infection transmission.[3] Questions around the impact of telemedicine apply not only to viral suppression, but to the management of comorbid conditions, prevention measures such as screening and counseling, and overall quality of care. This includes the effect of telemedicine on privacy, which exceeds the scope of this study but remains a critical consideration given the stigma associated with HIV. Despite these potential limitations, telemedicine visits are still a form of engagement, which is valuable for patients who would otherwise be largely disengaged when only in-person care is available.[5] Our findings demonstrate that telemedicine has the potential to augment access to care for these patients, by providing an additional avenue for engagement. Moving forward, if telemedicine is incorporated into a mixed model of care combining remote and in-person visits to maximize engagement it can be used a means to reach a wider segment of our patient population.

Conclusion

Telemedicine uptake beyond the pandemic will likely persist at higher than pre-pandemic levels, so understanding telemedicine's effect on engagement is critical to continued implementation. In this study, telemedicine improved visit completion among PWH, and had the greatest impact on groups who historically have not fully engaged with in-person care. However, many patients were limited to telephone rather than video visits, particularly among certain subgroups. The effect of either video or telephone visits on the quality of care compared to in-person visits is not yet known, and warrants further study but it is plausible that at least some engagement via telemedicine (even telephone) improves care for patients who would otherwise be fully disengaged from in-person care. Disengaged patients account for most new HIV infections,[1] so successfully engaging them in care is crucial to ending the HIV epidemic. While telemedicine is unlikely to replace in-person care, capitalizing on the wider uptake of telemedicine offers a promising approach to improve engagement for PWH. Successful implementation will require ongoing study of equitable approaches to telemedicine delivery and its impact on clinical outcomes in different populations.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Table 1:

Demographic and Clinical Characteristics of Participants With A Scheduled Visit in the 6.5 Months Pre- and During- the COVID-19 Pandemic, Johns Hopkins HIV Clinical Cohort

	Pre-Pandemic Sep 1, 2019 – Mar 15, 2020 (n = 2,010)	**Pandemic Mar 16, 2020 – Sep 30, 2020 (n = 1,929)**
Age Category		
20–39	282 (14%)	273 (14%)
40–59	992 (49%)	949 (49%)
60+	736 (37%)	707 (37%)
Male	1,247 (63%)	1,213 (63%)
Race		
White	379 (19%)	369 (19%)
Black	1,552 (77%)	1,482 (77%)
Other	79 (4%)	78 (4%)
Hispanic	52 (3%)	53 (3%)
HIV Risk Factor		
Men who had Sex with Men	634 (32%)	612 (32%)
Intravenous Drug Use	477 (24%)	441 (23%)
High-risk Heterosexual Contact	1,070 (53%)	1,031 (53%)
Viral Suppression [1]		
Not Virally Suppressed	146 (7%)	116 (6%)
Virally Suppressed	1,713 (85%)	1,665 (86%)
No viral load in the past year	151 (8%)	148 (8%)
Duration of Care at JHHCC		
< 1 year	74 (4%)	79 (4%)
1–5 years	325 (16%)	302 (16%)
6–10 years	349 (17%)	324 (17%)
10+ years	1,262 (63%)	1,224 (63%)
History of Depression	824 (41%)	775 (40%)
Recent Heroin Use [2]	79 (4%)	72 (4%)
Recent Cocaine Use [2]	134 (7%)	121 (6%)
Recent Hazardous Alcohol Use [2]	166 (8%)	152 (8%)
Recent Smoking [2]	672 (33%)	624 (32%)

[1] Virally suppressed at most recent lab within the year prior to each study period

[2] As recorded on medical chart review

Table 2:

Proportion of Participants Completing ≥1 Visit During the 6.5-Month Periods before and during the pandemic stratified by patient characteristics and unadjusted risk ratios for visit completion, Johns Hopkins HIV Clinical Cohort

	6.5 Mo. Pre-Pandemic		**6.5 Mo. During Pandemic**		**p-value**[1]
All Participants	**88% (1773/2010)**		**91% (1753/1929)**		**0.008**[2]
Age Category					
20–39	82%	-	92%	-	-
40–59	87%	1.06 (1.00, 1.13)	90%	0.98 (0.94, 1.02)	0.032
60+	93%	1.14 (1.07. 1.20)	92%	1.00 (0.96, 1.05)	0.001
Female	86%	-	93%	-	-
Male	90%	1.05 (1.01, 1.08)	90%	0.97 (0.94, 1.00)	0.001
Race					
White	90%	-	88%	-	-
Black	88%	0.98 (0.94, 1.02)	91%	1.03 (0.99, 1.08)	0.07
Other	89%	0.99 (0.91, 1.08)	94%	1.06 (0.99, 1.13)	0.22
Not Hispanic	88%	-	91%	-	
Hispanic	87%	0.98 (0.88, 1.09)	94%	1.04 (0.97, 1.11)	0.35
HIV Risk Factor					
Not MSM	87%	-	92%	-	
MSM	90%	1.03 (1.00, 1.07)	89%	0.97 (0.94, 1.01)	0.009
Not IDU	89%	-	91%	-	
IDU	86%	0.97 (0.93, 1.01)	91%	1.00 (0.97, 1.04)	0.19
No High-risk Heterosexual Contact	89%	-	90%	-	
High-risk Heterosexual Contact	88%	0.98 (0.95, 1.01)	92%	1.02 (0.99, 1.05)	0.11
Viral Suppression					
Not Virally Suppressed	77%	-	85%	-	
Virally Suppressed	90%	1.17 (1.07, 1.28)	92%	1.07 (0.99, 1.16)	0.14
No viral load in the past year	82%	1.07 (0.95, 1.20)	87%	1.02 (0.93, 1.13)	0.59
Duration of Care at JHHCC					
< 1 year	84%	-	89%	-	
1–5 years	85%	1.02 (0.91, 1.13)	90%	1.01 (0.93, 1.11)	0.95
6–10 years	83%	0.99 (0.89, 1.11)	90%	1.01 (0.93, 1.11)	0.80
10+ years	91%	1.08 (0.98, 1.19)	92%	1.03 (0.95, 1.12)	0.50
No History of Depression	89%	-	91%	-	
History of Depression	87%	0.97 (0.94, 1.01)	91%	0.99 (0.97, 1.02)	0.89
No Recent Heroin Use	89%	-	91%	-	
Recent Heroin Use	80%	0.90 (0.80, 1.01)	79%	0.87 (0.77, 0.98)	0.62
No Recent Cocaine Use	89%	-	91%	-	
Recent Cocaine Use	84%	0.94 (0.87, 1.02)	87%	0.95 (0.89, 1.02)	0.89
No Recent Hazardous ETOH Use	88%	-	91%	-	

	6.5 Mo. Pre-Pandemic		6.5 Mo. During Pandemic		p-value[1]
All Participants	**88% (1773/2010)**		**91% (1753/1929)**		**0.008[2]**
Recent Hazardous ETOH Use	88%	1.00 (0.94, 1.06)	92%	1.01 (0.96, 1.06)	0.82
No Recent Smoking	90%	-	91%	-	
Recent Smoking	85%	0.95 (0.92, 0.99)	90%	0.98 (0.95, 1.02)	0.16

[1] p-value for interaction between patient characteristic and time period

[2] p-value for the unadjusted effect of the pandemic on visit completion

Table 3:

Associations between participant characteristics and completion of ≥1 Video Visit, among those who Completed ≥1 Telemedicine visit during the COVID-19 pandemic, Johns Hopkins HIV Clinical Cohort, March 15, 2020 - September 30, 2020

	N (row percent)			
	Phone Visit Only	**At least 1 video visit**	**Unadjusted Risk Ratio for Video**	**Adjusted Risk Ratio[a] for Video**
Total	1312 (71%)	468 (29%)	-	-
Age Category				
20–39	137 (60%)	91 (40%)	-	-
40–59	533 (69%)	237 (31%)	0.77 (0.64, 0.93)	0.82 (0.67, 1.00)
60+	462 (77%)	172 (23%)	0.58 (0.47, 0.72)	0.60 (0.49, 0.75)
Female	449 (73%)	166 (27%)	-	-
Male	683 (69%)	302 (31%)	1.14 (0.97, 1.33)	0.76 (0.62, 0.94)
Race				
White	159 (54%)	136 (46%)	-	-
Black	927 (75%)	311 (25%)	0.54 (0.47, 0.64)	0.62 (0.52, 0.73)
Other	46 (69%)	21 (31%)	0.68 (0.47, 0.99)	0.60 (0.42, 0.87)
Not Hispanic	1,100 (71%)	454 (29%)	-	-
Hispanic	32 (70%)	14 (30%)	1.04 (0.69, 1.62)	0.85 (0.43, 1.71)
HIV Risk Factor				
Not MSM	848 (77%)	257 (23%)	-	-
MSM	284 (57%)	211 (43%)	1.83 (1.58, 2.13)	1.49 (1.27, 1.74)
Not IDU	821 (66%)	414 (34%)	-	-
IDU	311 (85%)	54 (15%)	0.44 (0.34, 0.57)	0.62 (0.47, 0.81)
Not Hetero	475 (64%)	262 (36%)	-	-
Heterosexual Contact	657 (76%)	206 (24%)	0.67 (0.58, 0.78)	1.01 (0.81, 1.24)
No Depression	674 (71%)	275 (29%)	-	-
History of Depression	458 (70%)	193 (30%)	1.02 (0.88, 1.19)	1.12 (0.96, 1.30)
Viral Suppression				
Not Virally Suppressed	64 (74%)	23 (26%)	-	
Virally Suppressed	990 (71%)	408 (29%)	1.10 (0.77, 1.58)	1.05 (0.74, 1.49)
No lab in the past year	78 (68%)	37 (32%)	1.22 (0.78, 1.89)	1.12 (0.73, 1.70)
Duration of Care at JHHCC				
1^{st} year	42 (68%)	20 (32%)	-	-
1–5 years	163 (65%)	89 (35%)	1.09 (0.74, 1.63)	1.26 (0.86, 1.85)
6–10 years	190 (73%)	71 (27%)	0.84 (0.56, 1.27)	1.09 (0.73, 1.64)
10+ years	737 (72%)	288 (28%)	0.87 (0.60, 1.27)	1.23 (0.84, 1.81)
No Recent Cocaine or Heroin Use	1,032 (69%)	455 (31%)	-	-
Recent Cocaine or Heroin Use	100 (86%)	3 (12%)	0.38 (0.22, 0.63)	0.53 (0.32, 0.89)

	N (row percent)			
	Phone Visit Only	**At least 1 video visit**	**Unadjusted Risk Ratio for Video**	**Adjusted Risk Ratio[a] for Video**
No Recent Hazardous Alcohol Use	1,046 (71%)	432 (29%)	-	-
Recent Hazardous Alcohol Use	86 (70%)	36 (30%)	1.00 (0.76, 1.34)	1.11 (0.84, 1.47)
No Recent Smoking	726 (67%)	364 (33%)	-	-
Recent Smoking	406 (80%)	104 (20%)	0.61 (0.50, 0.74)	0.70 (0.58, 0.85)

[a]Adjusted for age, race, MSM risk factor, and recent substance use.