HHS Public Access

Author manuscript

Sex Transm Dis. Author manuscript; available in PMC 2025 April 01.

Published in final edited form as:

Sex Transm Dis. 2024 April 01; 51(4): e11–e13. doi:10.1097/OLQ.0000000000001942.

Impact of text-based monthly check-ins on PrEP retention at a Sexual Health Clinic

Kaitlin A. Zinsli, MPH[1], **Meena S. Ramchandani, MD MPH**[2,3], **Julia C. Dombrowski, MD MPH**[1,2,3], **Chase A. Cannon, MD MPH**[2,3], **Matthew R. Golden, MD MPH**[1,2,3], **Cheryl Malinski, BS**[3], **Christine M. Khosropour, PhD MPH**[1]

[1.] Department of Epidemiology, University of Washington, Seattle, WA, USA

[2.] Department of Medicine, University of Washington, Seattle, WA, USA

[3.] Public Health – Seattle & King County, Seattle, WA, USA

Abstract

We conducted a retrospective cohort study of PrEP patients at the municipal Sexual Health Clinic in Seattle-King County, Washington from 2019–2021 to determine whether monthly check-in text messages impacted 4- and 6-month PrEP retention. Monthly check-ins did not appear to improve retention above and beyond open-ended texting and appointment reminders.

Keywords

PrEP; retention; text-message; evaluation

INTRODUCTION

Prior research supports the high effectiveness of pre-exposure prophylaxis (PrEP) in reducing the risk of HIV infection[1,2]. Interventions using short message service (SMS) or text messaging have been shown to increase adherence and retention in both people living with HIV taking antiretroviral drugs[3,4] as well as among people without HIV who are taking PrEP[5,6]. These SMS interventions often include multiple components; understanding which components of text message-based interventions improve retention may help clinics prioritize resources when necessary.

To promote PrEP retention, our sexual health clinic uses a text message-based intervention that includes: 1) appointment reminders, 2) bi-directional open-ended texting that can be initiated by patients or clinic staff and 3) automated monthly “check-in” messages. Due to limited resources, we stopped the monthly check-in text message on August 1, 2020 but maintained the other two components of the text message-based intervention. The monthly check-in message that was sent to patients was: “Hi! Just checking in. Everything ok?”, and allowed patients to respond and have a bidirectional discussion with the clinic team. We sought to examine whether the monthly “check-in” message was associated with retention in PrEP care to determine whether or not to re-instate the monthly check-in.

METHODS

We conducted a retrospective cohort study of PrEP patients at the municipal Sexual Health Clinic (SHC) in Seattle, Washington who were initiating PrEP for the first time. We only included patients who had initiated PrEP (i.e., picked up the prescription).

In our primary analysis we retrospectively constructed two cohorts of PrEP patients: those who had always received the monthly check-in (initiated PrEP between 5/1/2019–1/10/2020 and followed through 7/31/2020) and those who never received the monthly check-in (initiated PrEP between 8/1/2020–4/11/2021 and followed through 10/31/2021). PrEP retention was defined as a patient having a clinic visit post-initiation within 4 or 6 months of initiation. We compared PrEP retention at 4- and 6-months between these two groups and used log-binomial regression to estimate the adjusted relative risk (aRR) of retention, adjusting for age, gender, race/ethnicity, gender of sex partners, methamphetamine use, and insurance status.

In a secondary analysis, we used Kaplan Meier methods to compare time to first PrEP discontinuation (defined as the date that the patient was recorded in the medical record as stopping PrEP; our methods for categorizing discontinuation have been previously described[7]) between two cohorts of PrEP patients, defined differently than our primary analysis. Here the two cohorts were: (1) a “crossover” group of patients who began taking PrEP while the monthly check-in was active and were followed through after the monthly check-ins were turned off (initiated PrEP 10/01/2019–06/30/2020, followed until 01/31/2021); and (2) patients who started PrEP after the monthly check-in was turned off and were followed-up during the time period when the monthly check-in remained off (initiated PrEP 09/01/2020–05/31/2021 followed until 12/31/2021). Notably, our SHC classifies a patient’s PrEP stop date as the initial encounter date if the patient is lost to follow-up right after their initial prescription fill and as a result, some patients appear to be on PrEP for 0 days. This approach is conservative, since this assumes these patients did not take any PrEP.

This study was completed as a program evaluation intended to inform operations in our SHC and therefore was not considered to be research.

RESULTS

There were 220 PrEP patients who initiated PrEP while the check-in was active and 162 who initiated PrEP after it stopped (Table 1). The average age of patients was 30.9 years and 94% were cisgender men who have sex with men. There were no substantial differences in characteristics between the two groups, though the average age of patients was slightly higher in the group that did not receive the check-ins.

In our primary analysis, the proportion of patients that were retained on PrEP was similar for those who received monthly check-ins versus those who did not, at 4 months (63.2% vs. 61.7%) and 6 months (59.1% vs. 58.6%). The aRR of retention was the same for both groups (4 months: aRR=0.97, 95% confidence interval [CI]=0.83–1.15; 6 months: aRR=0.96, 95% CI=0.81–1.15).

In our secondary analysis, patients who never received the check-in message appeared to have a longer time to first PrEP discontinuation retention compared to the "crossover" group (see Figure, Supplemental Digital Content 1, which depicts the Kaplan-Meier curve); log rank $p<0.05$). However, the curves were overlapping and differed only at the very beginning (0 days). This difference coincided with the start of the COVID pandemic for the group who received the check-in messages. Many of the patients during this time period were lost to follow-up immediately in March and April of 2020, corresponding to a large immediate drop in the survival curves for this group, which accounts for the only difference in the curves.

DISCUSSION

Our original motivation for undertaking this analysis was to determine whether or not to re-instate monthly check-in text messages for PrEP patients in our SHC in Seattle. This particular component of our text message system was stopped in August 2020 because of limited human resources. Feedback from our clinic staff indicated that at that time they were not able to keep up with the text responses from patients that resulted from these check-ins (e.g., if a patient responded to the check-in with "Everything is good, how are you?", our staff believed it was important to respond to maintain the rapport and relationship they had established with patients). The results from this analysis suggest that the monthly text message check-in did not appear to increase short-term PrEP retention. Thus, in the setting of continued limited human resources, our clinic has decided not to re-instate these check-in messages.

Prior evaluations in our clinic[6] and others[5] have demonstrated the beneficial impact of text message-based interventions on PrEP retention. In our setting – where our clinic's text message intervention also includes open-ended texting and appointment reminders – it is possible that the check-in message simply did not impact retention to a measurable degree above and beyond that of the other components. It is also possible that the language of the check-in message we used was not specific enough to engage patients in a way that was directly linked to PrEP retention. Other studies that have shown a positive impact of check-ins used messages that were more varied in content[5]. To more comprehensively evaluate the impact of the monthly check-ins, further research could evaluate patients' qualitative experiences with the monthly check-ins as well as the content of the messages to better understand if and how these messages were utilized by patients.

There are several limitations to our study. First, we compared cohorts who initiated PrEP during two different time periods so we cannot tease apart any influence of secular trends on our results. Second, COVID-19 occurred during this time period and resulted in fewer patients coming into the clinic and potentially more PrEP discontinuations due to behavioral changes and pandemic restrictions. This makes it difficult to distinguish the effect of the PrEP check-in text from changes in clinical services and access due to COVID. Third, we only included individuals who were initiating PrEP for the first time. Excluding PrEP re-starts could have resulted in bias if these individuals were systematically different than the rest of the population (e.g., more or less likely to be retained on PrEP) and were disproportionately represented in one of the two cohorts. Despite these limitations, we believe our evaluation – which leverages existing data to create a longitudinal cohort of

patients – is an important step to determine where to allocate resources and time to improve PrEP retention.

In conclusion, we found that eliminating one component of a text message-based intervention did not substantially impact PrEP retention. However, we believe the other components of our clinic's text message intervention have improved retention[6], and our staff appreciate the ease of texting with patients. Elucidating which components of text-message interventions have the greatest impact on PrEP retention may help streamline resource utilization.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments:

The authors thank the Public Health – Seattle & King County STD Clinic staff.

Financial Support:

This work was supported by the Center for Disease Control Sexually Transmitted Disease Public Health Training Center grant (NU62PS924588).

Conflict of Interest Statement

M.S.R. received research funding from Nabriva unrelated to this work that has since ended. J.C.D. has conducted research with support from Hologic, Inc. and Mayne Pharmaceuticals. M.R.G. has received funding from both Hologic, Inc. and SpeeDx. C.M.K. has conducted research with support from Hologic, Inc. and Gilead Sciences.

References

1. Marcus JL, Volk JE, Pinder J et al. Successful Implementation of HIV Preexposure Prophylaxis: Lessons Learned From Three Clinical Settings. Curr HIV/AIDS Rep. 2016 Apr;13(2):116–24. [PubMed: 26898645]
2. McCallister SM, Guzman R, Shcachko V et al., Gilead Sciences Inc. HIV-1 seroconversion across 17 international demonstration projects with pre-exposure prophylaxis (PrEP) with oral emtricitabine/tenofovir disoproxil fumarate (FTC/TDF). Interscience Conference on Antimicrobial Agents and Chemotherapy,; 2016.
3. Fuchs JD, Stojanovski K, Vittinghoff E et al. A Mobile Health Strategy to Support Adherence to Antiretroviral Preexposure Prophylaxis. AIDS Patient Care STDs. 2018 Mar;32(3):104–11. [PubMed: 29565183]
4. Moore DJ, Jain S, Dubé MP et al. Randomized Controlled Trial of Daily Text Messages to Support Adherence to Preexposure Prophylaxis in Individuals at Risk for Human Immunodeficiency Virus: The TAPIR Study. Clin Infect Dis Off Publ Infect Dis Soc Am. 2018 May 2;66(10):1566–72.
5. Liu AY, Vittinghoff E, von Felten P et al. Randomized Controlled Trial of a Mobile Health Intervention to Promote Retention and Adherence to Preexposure Prophylaxis Among Young People at Risk for Human Immunodeficiency Virus: The EPIC Study. Clin Infect Dis Off Publ Infect Dis Soc Am. 2019 May 30;68(12):2010–7.
6. Khosropour CM, Lester RT, Golden M et al. Text Messaging is Associated with Improved Retention in a Clinic-Based PrEP Program. CROI; 2017 Feb 13; Seattle, Washington.
7. Ramchandani MS, Berzkalns A, Cannon CA et al. A De-medicalized Model to Provide PrEP in a Sexual Health Clinic. J Acquir Immune Defic Syndr 1999. 2022 Aug 15;90(5):530–7.

Table 1:

Demographics and Behavioral Characteristics of PrEP Patients at the Municipal Sexual Health Clinic in Seattle, by Exposure to a Monthly Check-in Text Message, N=381

	Received PrEP Texts		Did not Receive PrEP Texts		
Characteristic	**N=220**	**%**	**N=162**	**%**	**p-value[A]**
Age (Mean, SD)					
	30.1	+/−8.3	32.2	+/−10.0	**0.03**
Gender					
Cisgender woman	5	2.3	3	1.9	0.93
Cisgender man	207	94.1	153	94.4	
Transgender	4	1.8	4	2.5	
Non-binary/Genderqueer	4	1.8	2	1.2	
Men who have sex with men (MSM)					
Non-MSM	16	7.3	12	7.5	0.93
MSM	203	92.7	147	92.5	
Race/Ethnicity [B]					
American Indian/Alaska Native	0	0.0	1	0.6	0.20
Asian	22	10.0	19	11.7	
Black	17	7.7	14	8.6	
Native Hawaiian/Pacific Islander	2	0.9	3	1.9	
White	128	58.2	103	63.6	
Missing	51	23.2	22	13.6	
Hispanic	56	25.6	32	19.8	0.18
Methamphetamine Use (past 12 months)					
No	158	71.8	131	80.9	0.11
Yes	15	6.8	9	5.5	
Missing	47	21.4	22	13.6	
Insurance Status at Baseline					
No insurance	83	37.7	57	35.4	0.64
Had insurance	137	62.3	104	64.6	
Retained on PrEP for 4 months					
No	81	36.8	62	38.3	0.77
Yes	139	63.2	100	61.7	
Retained on PrEP for 6 months					
No	90	40.9	67	41.4	0.93
Yes	130	59.1	95	58.6	

Group 1: Enrolled May 1st, 2019 to January 10th, 2020 and followed through July 31st, 2020. Group 2: Enrolled August 1st, 2020 to April 11th, 2021 and followed through October 31st, 2021.

[A] P-values were calculated for continuous variable with t-tests assuming unequal variance (Satterthwaite) for continuous variables and chi squared tests for categorical variables.

[B] Race categories are not mutually exclusive with Hispanic ethnicity category.

Missing/Refused: MSM status (n=4), Race (n=73), Hispanic ethnicity (n=1), Meth Use (n=69), Insurance Status (n=1)