THE FENWAY INSTITUTE

Optimizing PrEP Adherence: Life-Steps and Related Studies

Kenneth H. Mayer MD and Christina Psaros, PhD

HOPE Conference, Harvard CFAR

July 19th, 2022

Pre-Exposure Prophylaxis (PrEP) for HIV Prevention

PrEP is a regular course of antiretroviral drugs taken to prevent HIV infection

Oral PrEP (taken daily)

- **FTC/TDF**
- **FTC/TAF**

Injectable PrEP (given once every 2 months)

- **CAB-LA**

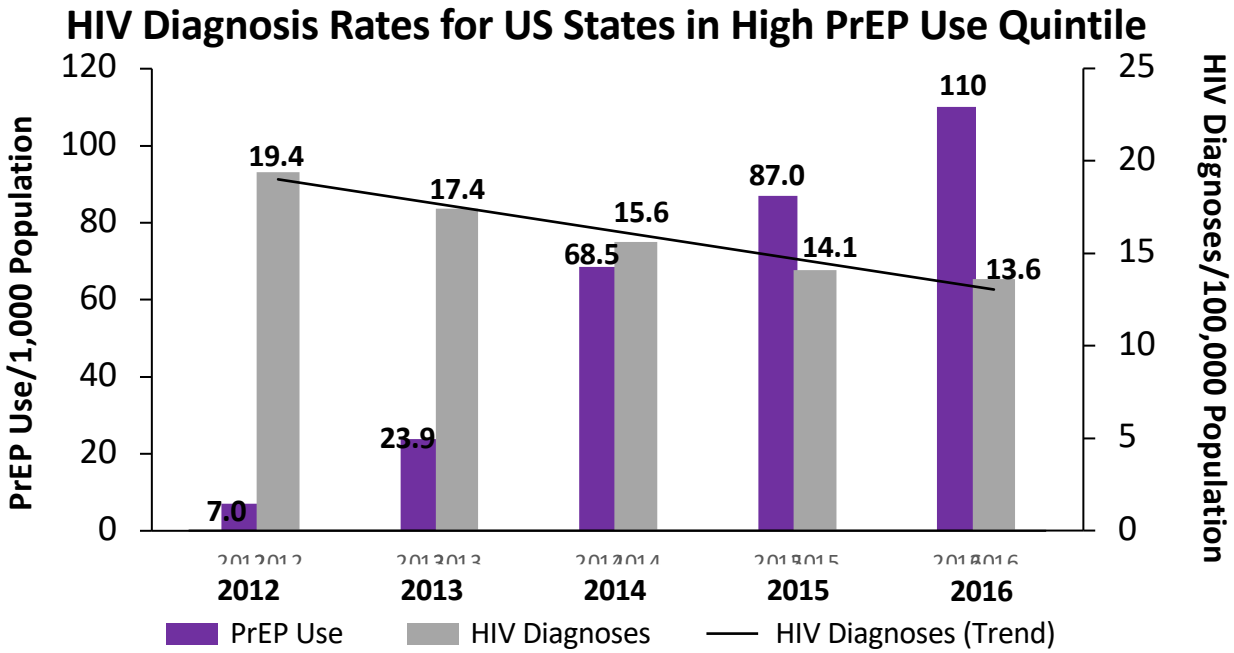
All forms of PrEP are highly effective at preventing HIV when taken as prescribed

Increased PrEP uptake is significantly associated with decreased HIV diagnosis rates

The first oral PrEP regimen (FTC/TDF) was approved in 2012

From 2012 and 2016 across the US:

- FTC/TDF **PrEP use** per 1,000 population **increased** (EAPC = +78.0%, 95% CI + 77.3%, +78.7%)
- The **rate of new HIV diagnosis** per 100,000 population **decreased** (EAPC = -1.6%, 95% CI -1.9%, -1.3%)

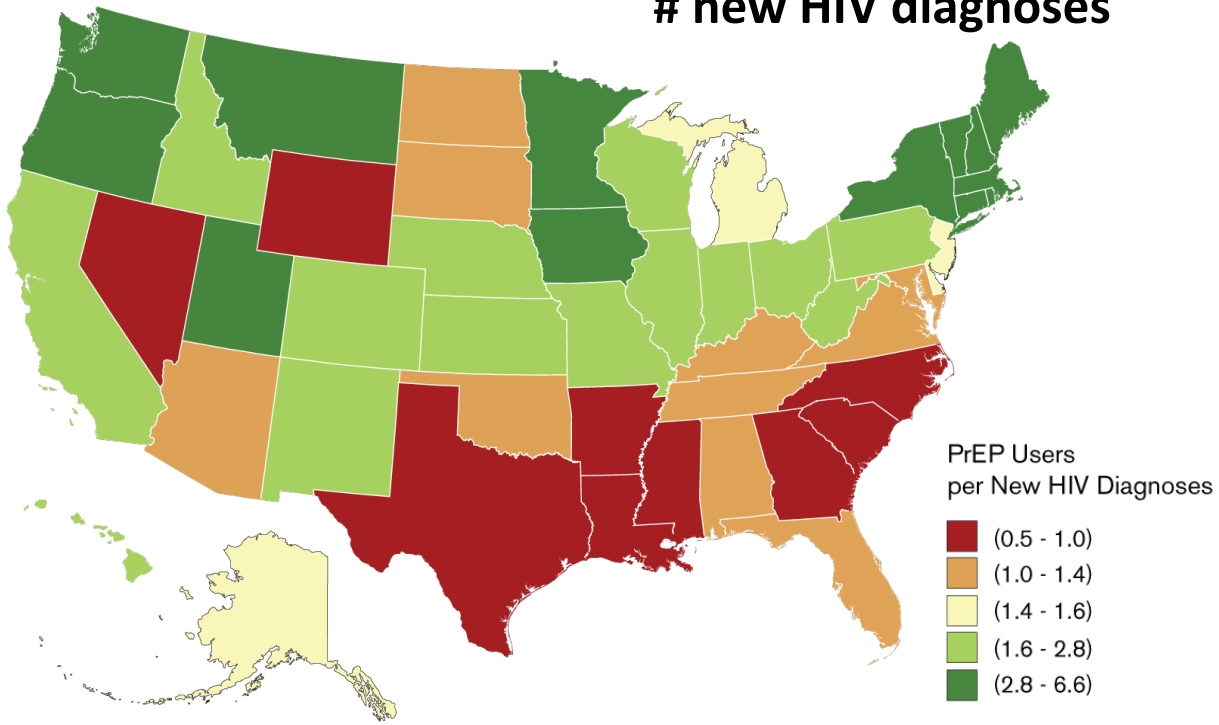


TDF = Tenofovir Disoproxil Fumarate; TAF = Tenofovir Alafenamide; FTC = Emtricitabine; CAB-LA = Cabotegravir-Long Acting; EAPC = Estimated Annual Percent Change

Sullivan PS, et al. 22nd International AIDS Conference 2018. Amsterdam, NL. Abstract 13004; Smith DK, et al. *Clin Inf Dis*. 2020;71(12):3144-3151.

PrEP is Not Getting to the People Who Need it Most

PrEP-to-Need Ratio (PnR) = $\frac{\text{\# PrEP prescriptions}}{\text{\# new HIV diagnoses}}$

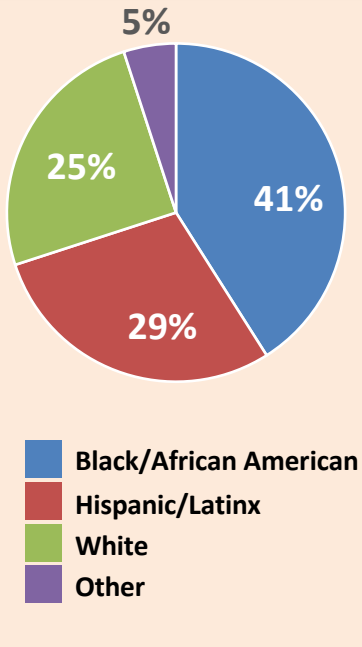


Fewer PrEP users relative to the need for PrEP ⟷ **More PrEP users relative to the need for PrEP**

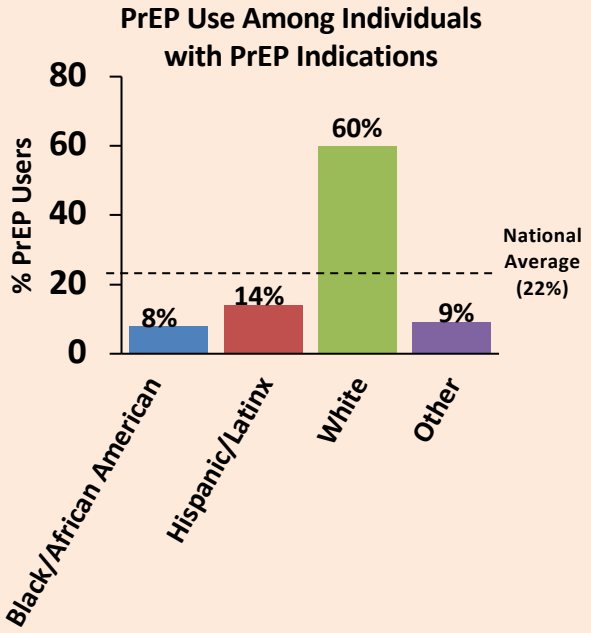
PrEP Use and New HIV Infections by Race/Ethnicity in the US

2019

New HIV Infections



PrEP Utilization

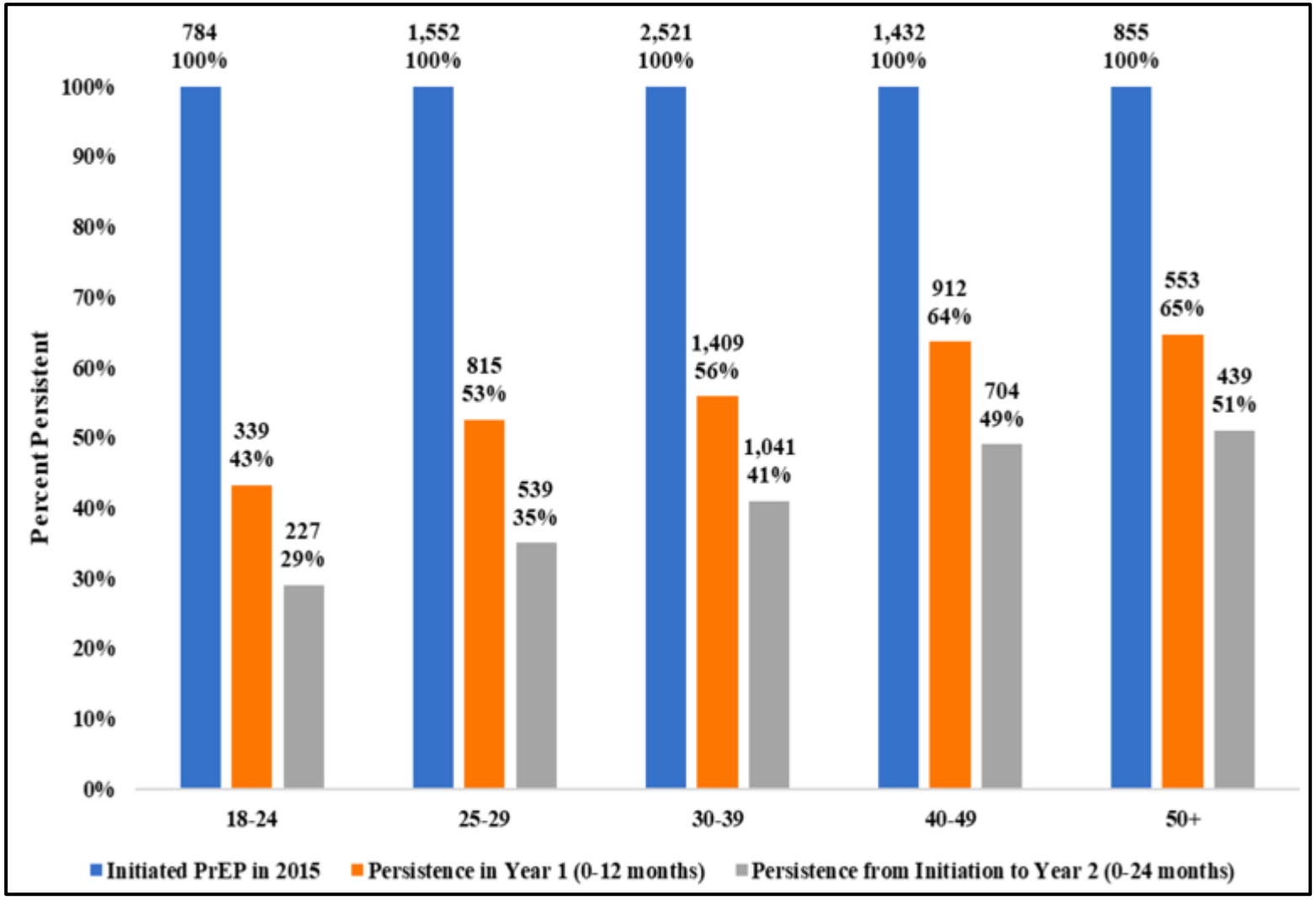


How can improve PrEP coverage and persistence?

Siegler AJ, et al. *Ann Epidemiol*. 2018; 28(12):841-849; National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention Newsroom: HIV by the Numbers – 2019-2020. Available at: https://www.cdc.gov/nchhstp/newsroom/fact-sheets/hiv/hiv-in-the-us-by-the-numbers.html. Accessed 3/8/2022.

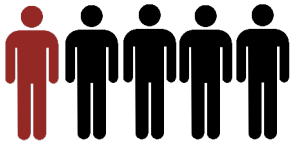
PrEP discontinuation is a substantial issue

- Pharmacy data
- n=7,148
- Individuals with ¾ period coverage classified as persistent
- Y1 discontinue: 44%
- Y2 discontinue: 37%
- Y0-Y2 discontinue: 59%



Coy, K … Siegler, A.J. (2019). Persistence on HIV Preexposure Prophylaxis Medication Over a 2-Year Period. JIAS

Barriers to HIV Prevention in Clinical Settings



Only **1 in 4 people with indications for PrEP** were prescribed PrEP in the US

System-level Challenges

- Delayed linkage to PrEP
- Insurance coverage for different PrEP options
- Pharmacy coverage, billing

Provider-level Challenges

- Competing provider priorities, time constraints, and workforce shortages
- PCP preference to defer PrEP management to specialists
- Comfort or confidence taking sexual history
- Knowledge about or confidence prescribing PrEP
- Implicit bias

Patient-level Challenges

- Awareness of PrEP and personal risk for HIV
- Stigma related to HIV
- Family/social support
- **Substance use and/or mental health disorders**
- **Adherence**
- Ability to pay
- Distrust of health care professionals

SODH such as housing, poverty, transportation, or health literacy can be persistent barriers to PrEP, and need to be addressed as part of HIV prevention

Mayer K, et al. *Adv Ther.* 2020;37(5):1778-1811; Smith DK, et al. *Ann Epidemiol*. 2018;28(12):850-857; AAMC. AAMC Report Reinforces Mounting Physician Shortage. https://www.aamc.org/news-insights/press-releases/aamc-report-reinforces-mounting-physician-shortage. Accessed 2/24/22. National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention Newsroom: HIV by the Numbers – 2019-2020. Available at: https://www.cdc.gov/nchhstp/newsroom/fact-sheets/hiv/hiv-in-the-us-by-the-numbers.html. Accessed 3/8/2022.

Reasons for non-persistence in HIV and PrEP care

- Insurance/coverage/cost issues
- Medication challenges: Side effects, regimens
- Perceived need/benefit
- Shame
- Other events in life require attention
- Too busy, hard to get time off work
- Transportation barriers
- Navigating care: extra planning, scheduling
- Stigma perceived when seeking care

Potentially mitigated by home care

Patient-Centered PrEP

What settings best support patient linkage to preventive care?

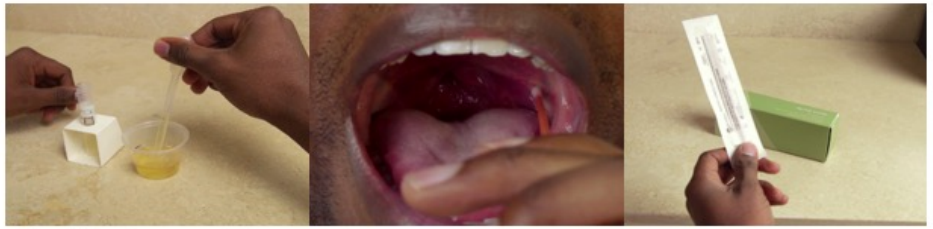
- Same-day (immediate) PrEP
- Pharmacist-initiated PrEP
- Community-based organizations
- Mobile units
- STI clinics
- Harm reduction centers
- Telemedicine
- Web Based

Providing tailored, appropriate care

EMORY UNIVERSITY
PrEP AT HOME

Home care system for PrEP could reduce clinician visits from 4/year to 1/year

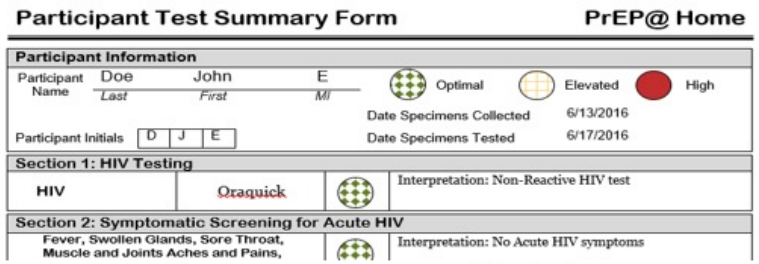
1. Kit mailed



2. Urine, throat, rectal specimens

3. Blood specimens

4. Prepaid mailer, survey



5. Results report to clinician

6. Rx, care as needed

Siegler AJ, Mayer KH, et al. Developing and assessing the feasibility of a home-based PrEP monitoring and support program. Clinical infectious diseases 2018;Jul 4.

- Pilot R34 showed acceptability
- Full RCT in Atlanta, Boston, Cleveland, Jackson, and St. Louis underway
- Over half enrolled, good retention
- Pandemic has slowed enrollment and made control condition more similar to intervention because of the increased use of Tele-PrEP

Lifesteps Intervention

PERGAMON

Behaviour Research and Therapy 39 (2001) 1151–1162

BEHAVIOUR RESEARCH AND THERAPY

www.elsevier.com/locate/brat

Two strategies to increase adherence to HIV antiretroviral medication: Life-Steps and medication monitoring

Steven A. Safren [a, b,*], Michael W. Otto [a], Jonathan L. Worth [a], Elizabeth Salomon [b], William Johnson [b], Kenneth Mayer [b], Steven Boswell [b]

[a] *Massachusetts General Hospital and Harvard Medical School, Boston MA, USA*
[b] *Fenway Community Health, Boston MA, USA*

Accepted 2 August 2000

2.3.2. *Life-Steps condition*

The Life-Steps protocol is fully described elsewhere (Safren et al., 1999). Life-Steps is a single-session intervention utilizing cognitive-behavioral, problem-solving (D'Zurilla, 1986), and motivational interviewing (Miller & Rollnick, 1991) techniques to enhance motivation, rehearse adherence-related behaviors, and solve problems that interfere with adherence to HIV medications. It also consists of a follow-up telephone review (10 min) one week later. The first portion of Life-Steps involves informational and motivational interventions, aided by a videotape presentation. The videotape presents psychoeducational information about HIV medications in suppressing viral replication, and the consequences of missing a dose, and includes an animated cartoon segment that illustrates the inhibition of viral replication and the consequences of a missed dose. The session with the clinician includes eleven informational, problem-solving, and cognitive-behavioral steps for improving adherence:

1. psychoeducation;
2. transportation to appointments;
3. obtaining medications;
4. communication with providers;
5. coping with side-effects;
6. formulating a daily medication schedule;
7. storage of medications;
8. cues for pill-taking;
9. guided imagery review of successful adherence in response to daily cues
10. responses to slips in adherence; and
11. review of procedures (written on a note card for participants to take with them).

Available online at www.sciencedirect.com

ScienceDirect

Cognitive and Behavioral Practice 24 (2017) 38-49

Contains Video [1]

Cognitive and Behavioral Practice

www.elsevier.com/locate/cabp

"Life-Steps" for PrEP Adherence: Demonstration of a CBT-Based Intervention to Increase Adherence to Preexposure Prophylaxis (PrEP) Medication Among Sexual-Minority Men at High Risk for HIV Acquisition

S. Wade Taylor, *Wheelock College and Fenway Health*
Christina Psaros, *Harvard Medical School and Massachusetts General Hospital*
David W. Pantalone, *Fenway Health and University of Massachusetts Boston*
Jake Tinsley, *Fenway Health*
Steven A. Elsesser, *Fenway Health and Thomas Jefferson University, Sidney Kimmel Medical College*
Kenneth H. Mayer, *Fenway Health and Harvard Medical School and Massachusetts General Hospital*
Steven A. Safren, *Fenway Health, Harvard Medical School and Massachusetts General Hospital, and University of Miami*

- Focus groups and key informant interviews with HIV-negative at risk MSM to determine what additional supports would help with PrEP adherence.
- Determined that one session was not sufficient
- Pts wanted more information about PrEP (e.g. onset of protection, what happens if a pill is missed, interactions with drugs)
- Pts wanted broader education about sexual health, e.g. STI)
- Pts thought that a nurse-delivered intervention with workbooks and exercises would be helpful when initiating PrEP

AIDS Behav (2017) 21:1350–1360
DOI 10.1007/s10461-016-1606-4

ORIGINAL PAPER

Optimizing Pre-Exposure Antiretroviral Prophylaxis Adherence in Men Who Have Sex with Men: Results of a Pilot Randomized Controlled Trial of "Life-Steps for PrEP"

Kenneth H. Mayer[1,2] · Steven A. Safren[1,3] · Steven A. Elsesser[1,4] · Christina Psaros[5] · Jake P. Tinsley[1] · Mark Marzinke[6] · William Clarke[6] · Craig Hendrix[6] · S. Wade Taylor[1,7] · Jessica Haberer[5] · Matthew J. Mimiaga[1,8]

3 month visit		6 month visit	
Randomization	Mean [Tenofovir] (SD)	Randomization	Mean [Tenofovir] (SD)
Control	131.0 ng/ml (119.6)	Control	101.0 ng/ml (84.1)[a]
Intervention	166.6 ng/ml (121.7)	Intervention	157.8 ng/ml (131.6)

[a] $p = 0.037$ compared to intervention group at 6 months, using mean substitution for the imputation of missing data

- R34 pilot c/w efficacy, but most pts were adherent in both conditions
- R01 underway in Boston and Miami enrolling pts more likely to be non-adherent (e.g. depression, SUD)

Table 3 Plasma tenofovir levels, stratified by dosing pattern

3 month visit			6 month visit		
TFV doses in past week[a]	Adherence category percent[b]		TFV doses in past week[a]	Adherence category percent[c]	
	Intervention (n = 20) (%)	Control (n = 21) (%)		Intervention (n = 19) (%)	Control (n = 19) (%)
None	0	4.8	None	0	5.3
<7	10	14.3	<7	15.8	31.6
7	90	81	7	84.2	63.2

[a] Number of doses per week estimated by plasma tenofovir levels: <0.5 ng/ml = None; 0.5–52 ng/ml = <7; >52.0 ng/ml = 7

[b] p = NS between intervention and control

[c] $p = 0.03$ using mean substitution for the imputation of missing data

Lifesteps is an EBI

Reference for trial: Mayer, K. H., Safren, S. A., Elsesser, S. A., Psaros, C., Tinsley, J. P., Marzinke, M., Clarke, W., Hendrix, C., Wade Taylor, S., Haberer, J., & Mimiaga, M. J. (2017). Optimizing pre-exposure antiretroviral prophylaxis adherence in men who have sex with men: Results of a pilot randomized controlled trial of "Life-Steps for PrEP." AIDS and Behavior, 21, 1350-1360.

Reference for intervention manual: Psaros, C., Mayer, K. H., Mimiaga, M. J., Puccinelli, M. J., Taylor, S. W., Elsesser, S. A., & Safren, S. A. (2020). Life-Steps for PrEP. Unpublished intervention manual. [Available from author, Steven A. Safren]

LIFE-STEPS for PrEP

Evidence-Informed for PrEP Medication Adherence/Persistence

INTERVENTION DESCRIPTION

Goal of Intervention

- Increase PrEP adherence/persistence

Target Population

- Men who have sex with men (MSM) who are HIV-uninfected and at high risk for HIV acquisition

Brief Description

Life-Steps for PrEP is a nurse-delivered, individual-level, cognitive-behavioral intervention that focuses on PrEP adherence, sexual behavior, and barriers to adherence. *Life-Steps for PrEP* is adapted from *Life-Steps*, a brief intervention to increase ART adherence for persons with HIV. The intervention consists of four counseling sessions and two booster sessions, and participants are provided with a six-month supply of PrEP* over the course of the study. At the initial session, participants are given a 30-day supply of PrEP and are introduced to the program. The first session includes rapport building, discussing the psychosocial context in which PrEP use would occur, a brief motivational interviewing exercise, and exploring the establishment of a regular dosing schedule. The second session focuses on understanding participants' experiences taking PrEP and engaging in a problem-solving activity to address any reported barriers to adherence. The third session introduces sexual risk behavior education, identifies high-risk activities, and factors that could increase and decrease personal risk for HIV as well as other sexually transmitted infections. The session also involves a discussion about biological factors associated with HIV transmission (e.g., partners' level of infectiousness, measured by plasma HIV RNA) and discusses ways to reduce their risk in the context of taking PrEP. The final session involves setting PrEP adherence goals and discussing prior session content, as well as the participant's plans for continued PrEP use upon intervention completion. The session context is designed to be flexible, allowing participants to identify their adherence support needs; optional modules provide a framework to help interventionists work with participants who are experiencing substance abuse or mental health concerns that are adversely impacting PrEP adherence. The two booster sessions include electronic real-time adherence monitoring.

Lifesteps Applications

J Acquir Immune Defic Syndr. Author manuscript; available in PMC 2018 Dec 15.
Published in final edited form as:
J Acquir Immune Defic Syndr. 2017 Dec 15; 76(5): 501–511.
doi: 10.1097/QAI.0000000000001538
PMCID: PMC5681370
NIHMSID: NIHMS903354
PMID: 28902074

Plasma Tenofovir-levels to Support Adherence to TDF/FTC Pre-exposure Prophylaxis for HIV Prevention in MSM in Los Angeles, California

Raphael J. Landovitz, MD MSc,* Matthew Beymer, PhD MPH, Ryan Kofron, MS, K. Rivet Amico, PhD, Christina Psaros, PhD, Lane Bushman, BChem, Peter L. Anderson, PharmD, Risa Flynn, BA, David P. Lee, MSW, MPH, Robert K. Bolan, MD, Wilbert C. Jordan, MD MPH, Chi-Hong Tseng, PhD, Rhodri Dierst-Davies, PhD, MPH, Jim Rooney, MD, and Amy Rock Wohl, PhD, MPH

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Antiretroviral Therapy for the Prevention of HIV-1 Transmission

M.S. Cohen, Y.Q. Chen, M. McCauley, T. Gamble, M.C. Hosseinipour, N. Kumarasamy, J.G. Hakim, J. Kumwenda, B. Grinsztejn, J.H.S. Pilotto, S.V. Godbole, S. Chariyalertsak, B.R. Santos, K.H. Mayer, I.F. Hoffman, S.H. Eshleman, E. Piwowar-Manning, L. Cottle, X.C. Zhang, J. Makhema, L.A. Mills, R. Panchia, S. Faesen, J. Eron, J. Gallant, D. Havlir, S. Swindells, V. Elharrar, D. Burns, T.E. Taha, K. Nielsen-Saines, D.D. Celentano, M. Essex, S.E. Hudelson, A.D. Redd, and T.R. Fleming, for the HPTN 052 Study Team*

Results from a Pre-exposure Prophylaxis Demonstration Project for At-risk Cisgender Women in the United States

Get access

Jill Blumenthal ✉, Sonia Jain, Feng He, K Rivet Amico, Ryan Kofron, Eric Ellorin, Jamila K Stockman, Christina Psaros, Gifty M Ntim, Karen Chow, Peter L Anderson, Richard Haubrich, Katya Corado, David J Moore, Sheldon Morris, Raphael J Landovitz

Clinical Infectious Diseases, Volume 73, Issue 7, 1 October 2021, Pages 1149–1156,
https://doi.org/10.1093/cid/ciab328

NIH Public Access
Author Manuscript
J Acquir Immune Defic Syndr. Author manuscript; available in PMC 2015 August 15.
Published in final edited form as:
J Acquir Immune Defic Syndr. 2014 August 15; 66(5): 522–529. doi:10.1097/QAI.0000000000000212.

An intervention to support HIV pre-exposure prophylaxis (PrEP) adherence in HIV serodiscordant couples in Uganda

Christina Psaros, PhD[1,2], Jessica E. Haberer, MD[2,3], Elly Katabira, MBChB[4], Allan Ronald, MD[5], Elioda Tumwesigye, MBChB[6], James D. Campbell, MD, MS[7], Jonathan Wangisi, MBChB[7], Kenneth Mugwanya, MBChB[8], Alex Kintu, MBChB[6,14], Michael Enyakoit, MBChB[9], Katherine K. Thomas, MS[10], Deborah Donnell, PhD[10,11], Meighan Krows, BA[10], Lara Kidoguchi, MPH[10], Norma Ware, PhD[2], Jared M. Baeten, MD, PhD[12], Connie Celum, MD[12], David R. Bangsberg, MD[1,2,13,14], and **Steve A. Safren, PhD[1,2]**

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 AUGUST 2, 2012 VOL. 367 NO. 5

Antiretroviral Prophylaxis for HIV Prevention in Heterosexual Men and Women

J.M. Baeten, D. Donnell, P. Ndase, N.R. Mugo, J.D. Campbell, J. Wangisi, J.W. Tappero, E.A. Bukusi, C.R. Cohen, E. Katabira, A. Ronald, E. Tumwesigye, E. Were, K.H. Fife, J. Kiarie, C. Farquhar, G. John-Stewart, A. Kakia, J. Odoyo, A. Mucunguzi, E. Nakku-Joloba, R. Twesigye, K. Ngure, C. Apaka, H. Tamooh, F. Gabona, A. Mujugira, D. Panteleeff, K.K. Thomas, L. Kidoguchi, M. Krows, J. Revall, S. Morrison, H. Haugen, M. Emmanuel-Ogier, L. Ondrejcek, R.W. Coombs, L. Frenkel, C. Hendrix, N.N. Bumpus, D. Bangsberg, J.E. Haberer, W.S. Stevens, J.R. Lingappa, and C. Celum, for the Partners PrEP Study Team*

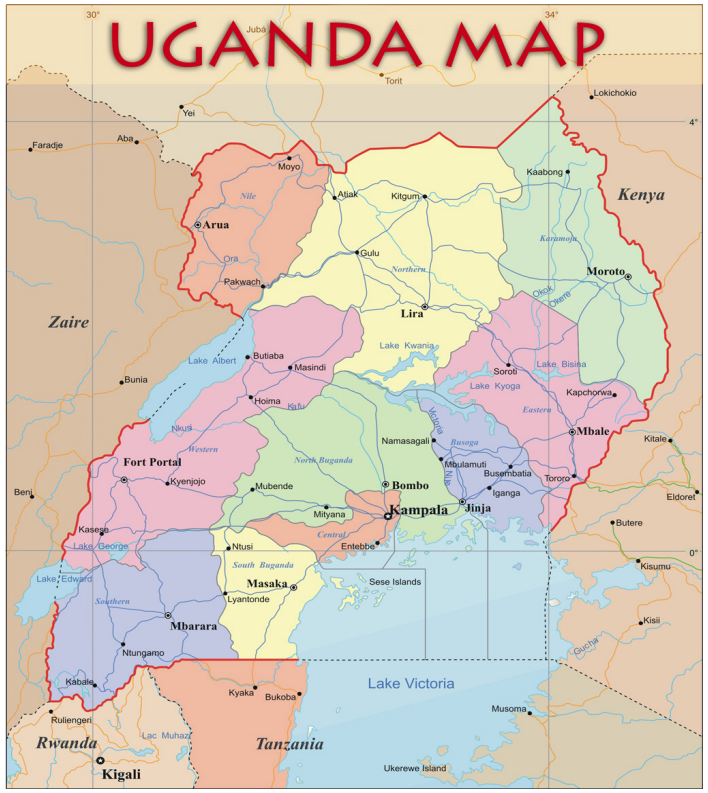
Principles of Lifesteps for PrEP

- Core principles consistent with a CBT approach
  - Providing information
  - Exploring motivation
  - Collaboratively problem-solving barriers to adherence and sexual health goals
- Manualized to support delivery by persons with variable levels of training and experience (e.g., lay counselors in LMICs, nurses, etc.)
  - Adaptable based on study setting and population
  - Use of formative data to refine
- Standardized content, but flexible and client centered
  - Variable session length (20-45 minutes)
- Training
  - Didactics, role-plays, and ongoing supervision

Overview of Lifesteps for PrEP Content

- **Individual, nurse led intervention**
- **4 weekly, and 2 monthly booster sessions**
  - Session 1: education, psychosocial assessment, motivational exercise, dosing schedule
  - Session 2: check-in, problem solving
  - Session 3: check-in, sexual risk behavior education, problem-solving
  - Session 4: check-in, problem-solving, planning for future
  - Booster sessions: check-in, problem-solving, planning for future
  - Optional modules to facilitate referrals to mental health / substance use services
  - Designed as in-person intervention, but COVID necessitated virtual delivery across some studies

Study #1: Partners PrEP Study



- **Phase III, double-blind, three-arm, randomized, placebo-controlled trial of daily oral PrEP among 4700 serodiscordant African couples.**
  - **Ancillary adherence study in Uganda at three of the nine study sites**
- **DSMB recommended discontinuation of placebo on July 10, 2011.**
  - **62% fewer infections in TDF group and 73% fewer infections in FTC/TDF group.**

Baeten et al. (2012). Antiretroviral Prophylaxis for HIV Prevention in Heterosexual Men and Women. NEJM, 367(5), 399-410.

Ancillary Adherence Study (AAS)

- **Goals: To determine the level, pattern, and predictors of PrEP adherence using objective adherence measures (e.g., MEMS, unannounced home pill counts, random drug levels).**
- **AAS findings (*Haberer et al., 2013*):**
  - **1,147 HIV negative participants enrolled**
  - **Median adherence: 99% by UPC and 97.2% by MEMS.**
  - **PrEP efficacy within AAS was 100% (95% CI 83.7-100%, p<0.001).**

Unannounced home-based pill counts (UPC)

Haberer et al. (2013). Adherence to antiretroviral prophylaxis for HIV prevention: a substudy cohort within a clinical trial of serodiscordant couples in East Africa. PLoS Med, 10(9).

Ancillary Adherence Study: Intervention Aim

- **To deliver an intervention targeted to HIV-negative participants with low (<80%) unannounced pill count adherence**
- **Iterative process of intervention development**
  - **Informal focus groups with study participants**
  - **Ongoing feedback from sites and counselors**
  - **Counselors trained over a two day-period; participate in monthly supervision calls and yearly site visits**

Intervention Delivery

- **After the intervention is triggered, counseling occured in two phases:**
  - **With individual on PrEP**
    - **Monthly contact with interventionist**
    - **Number of sessions tailored and variable**
  - **With their HIV infected partner (optional)**
    - **Participant on PrEP dictated information to be shared with their partner**

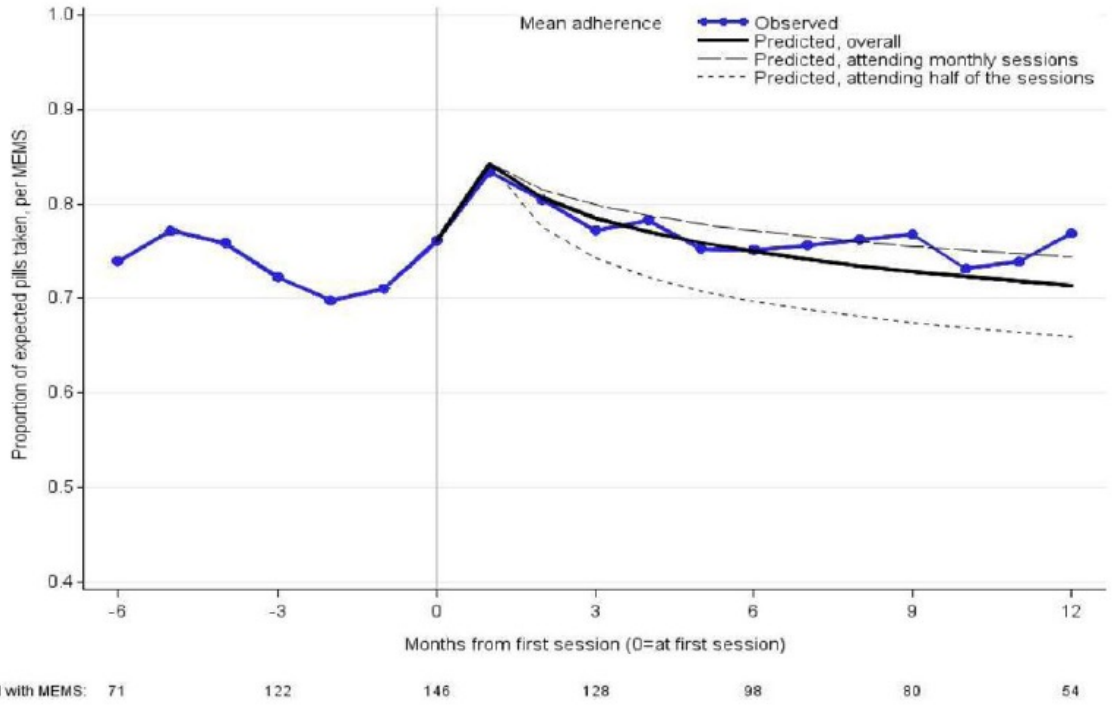
Lessons Learned

- Average length of sessions = 30.2 minutes
- Average number of intervention sessions = 6.8 (range = 1-16)
- Most frequently endorsed barriers across <u>all</u> sessions:
  - Travel 19.2%
  - Forgetting 18.0%
  - Perceived PrEP side effects 4.0%
  - Partner discord 3.8%
  - Stigma/privacy concerns 3.8%

Adherence Changes

	Trigger	Post intervention	Difference	P-value**
MEMS (N=146)	64.8%	84.1%	8.4%	<0.001

*Adherence is by MEMS caps. Trigger interval is the 28 day period prior to the home visit at which the participant triggered (adherence by unannounced pill count <80%).
** p-value obtained using Wilcoxon signed rank test.



Study #2: HPTN083 Adherence outcomes:

- Pill count adherence: 96% (IQR 90-100%) for both study arms.
- In a randomly-selected subset of 390 TDF/FTC-arm participants,
  - 74.2% had TFV concentrations >40 ng/mL (consistent with daily TDF/FTC dosing in the previous week)
  - 257 86% had concentrations above the lower limit of quantitation (0.31 ng/mL). TFV-DP
  - 258 concentrations in DBS consistent with >4 TDF/FTC doses per week over the previous 1-2 months were detected in 72.4% of samples overall (Figure S1);

Landovitz et al., Cabotegravir for HIV Prevention in Cisgender Men and Transgender Women, N Engl J Med 2021; 385:595-608

Counseling Approach

OVERVIEW

Now we will talk about a few different things that everyone will need to do in order to be an effective user of the study products. There are six things we will talk about together:

1. Getting to study appointments, obtaining refills of oral product, and receiving injections on time.
2. Communicating with study staff about questions and concerns.
3. Coping with side effects.
4. Formulating a daily medication schedule and reminders for oral study product.
5. Storing oral study product.
6. Handling missed doses of oral study product and missed injections.

For each of these topics, we will come up with a plan and a back-up plan.

WITH PARTICIPANT

INSTRUCTIONS FOR COUNSELOR: TWO PATHS

- The session will follow two paths based on the participant's reporting of adherence or desire for additional adherence counseling
- Path 1: Reporting no difficulties with adherence (Slides 42-45)
- Path 2: Reporting difficulty with adherence (Slides 46-52)

WITH PARTICIPANT

HPTN
HIV Prevention Trials Network

HPTN083-02: A qualitative substudy

Original design

- Objectives:
  - (1) Identify barriers and facilitators of adherence
  - (2) Gather explanatory qualitative data on study experiences to guide next steps for HIV prevention

Unplanned events

- 03/2020: Interviews halted due to COVID-19
- 05/2020: DSMB recommended unblinding

Revised design

- 5 sites enrolling participants who:
  - (1) Received injectable PrEP and wish to continue
  - (2) Received oral PrEP and wish to continue
  - (3) Received injectable PrEP and desire oral PrEP
  - (4) Received oral PrEP and desire injectable PrEP

- Desire to prevent vs. treat illness
- Novelty and convenience of injectable PrEP
- Enhance health and contribute to community

I take mine for that purpose 'cause it's a PrEP study to stay safe, so that's my purpose. That keeps me motivated to keep taking it 'cause I don't wanna have [HIV]. There's two choices you have. You either try to prevent it or you can be taking a pill for it. – Adherent, MSM

The study also gave me this opportunity of hormonal therapy... I have been discovering many things regarding my transition, I believe that the study has made me think much more about my body than before. How it can affect my life.

- Discontinued product, TGW

Increased visit scheduling flexibility

Frequent and thorough communication

Open, affirming staff and environment

“Hey. I'm interested in getting on PrEP." A doctor's first question is, "Why?" With the studies, that's not it.
– Adherent, MSM

Easy to use, with minimal discomfort

Some described initial injection anxiety

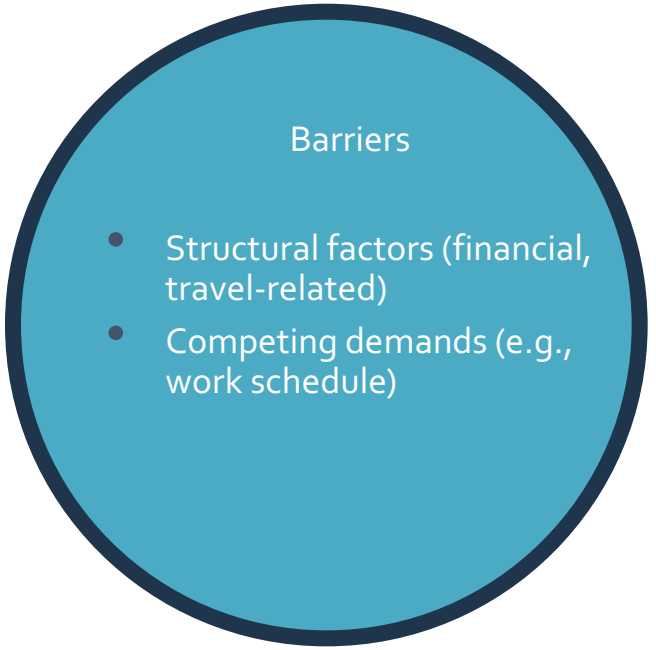
Some concerns around efficacy and tolerability

The first two times I got the shot, it took me back to when I got raped. It was almost just like, okay, I'm bent over. The only difference is that I'm an adult. I can fight for myself now versus being younger, but that's the experience that it jogged. Now, it became a little more normal, so I don't feel that way.

– Imperfectly adherent / non-adherent, MSM

I'm generally a healthy person, so I never would wanna put myself in a way that would compromise my good health. I know, when it comes to a shot, that lasts longer in your body, too, and once it's in there, it's just kinda like, girl ... It's in there. You can take a pill, and hopefully get your stomach pumped right away, or whatever. You get a shot, that's not gonna come out right away.

– Adherent, MSM



Recently, it was more complicated due to personal issues more than any other thing. I stayed away this time, three months… it is always a hurry to look after work, money and eating and many things, as difficulties of life indeed, that it ended up not being prioritized... Not that I was not caring, but if I would choose between assuring my life and my well-being or coming to the... appointment, I gave priority to this over coming here.

– Discontinued product, TGW

Conclusions: HPTN 083 Qualitative

- Positive study experience
  - A means for participants to care for themselves
  - Contributions to their communities
  - Access for injectable (or oral) PrEP at no cost
- Implementation = challenge paradigms of standard delivery of medical care:
  - “Whole body” care and health screenings
  - Open and affirming staff
  - Build relationships over time
  - Flexible visit schedules
- Provider awareness of:
  - Injection anxiety (and relevant trauma history)
  - Varying degrees of patient understanding about how injectable PrEP works
  - Anxiety decreased over time
- Accessing PrEP
  - free of cost
  - Remuneration was important
  - Managing financial constraints of using PrEP

Study #3: Lifesteps for PrEP for Youth (ATN 158)

- **Overall goal: to adapt and test Lifesteps for YMSM who wish to use PrEP**
- Phase I: Formative, qualitative interviews with 20 YMSM (ages 15-24) and 10 key informants to inform intervention adaptation and refinement for target population
  - Completed 20 youth and 9 key informant interviews
  - Manuscript submitted July 2022
- Phase 2: Pilot RCT of 50 YMSM to assess feasibility, acceptability, and preliminary efficacy of intervention
  - Follow-up data collection completed May 2022

Summary of qualitative findings and adaptations

Finding	Quote	Adaptation
Payment for PrEP can be a barrier; use of parental insurance can compromise privacy	**"I wouldn't want them to know I'm having sex because they don't like the gay thing in general…So I don't know what they see with the tests and all, but I can't care about that, can I? I'm trying not to care about it, because it's my health."**	Information on payment options; problem-solving payment challenges
Youth experience regular disruptions in routine	**"This past month has probably been the month where I've been the least adherent just with like moving apartments. It took me a few days to unpack and so there are a few days where my pills were packed up somewhere and they didn't come out of the bag they were in for a few days and so I missed a few doses. And then I think the other time I missed more doses than usual was a month where I went on vacation for a week. And I just was on a completely different schedule and forgot to take my pills almost every morning that week."**	Emphasis on anticipating disruptions in routine; problem-solving
Youth lack relevant sex ed	**"The only sexual education I got was abstinence… I think for a lot of people my age I don't think it's something we're very educated about. It's almost seen as something to be ashamed of and hidden. So, talking to people about that and talking to healthcare providers about it is kind of nerve wrecking."**	Provision of information on HIV and STIs
Youth hide PrEP use to avoid stigma	**"Some depending on whether they lived with family or other roommates and they feel they have to hide the medication, so that they want to know and then that creates a little bit of a barrier to access because it's not useful and now it's hard to – you know I had one guy who hid it inside a shoe, inside a gym bag in his closet. And so, if he was in a hurry, he couldn't get to it or so that kind of shame or hiding aspect of it is one thing."**	Positive disclosure tools; problem-solving around privacy

Recruitment

Screened			Eligible				Enrolled					
Total Screened	*Complete* Screeners		Total Eligible of Complete Screeners		Total Eligible Provided Contact Info		Total Enrolled		Intervention		Control	
1136	849	75%	158	19%	131	83%	32	20%	15	47%	17	53%

Reason Ineligible	Count
Multiple Reasons	315
Not between ages 16 and 24 (inclusive)	109
Does not plan to take PrEP in next month	85
No sex risk behaviors	41
No Anal Sex	22
HIV diagnosis	11
Not male identity	5
Not male sex	3
Not willing to download Zoom	2
Does not own cellphone	1
English not main language	1

Session completion

Intervention N =15						
Site	**Total # of Sessions Completed**	**Avg. Sessions Completed mean (range)**	**Avg Core Session Completed mean (range)**	**Total # of Booster Sessions Completed**	**Avg Booster Session Completed mean (range)**	**Avg. # months to complete core sessions ***
Total	54	3.6 (0-6)	3 (0-4)	10	0.7 (0-2)	1.1
Atlanta	9	4.5 (4-5)	4 (4-4)	1	0.5 (0-1)	1.3
Chicago	18	4.5 (0-6)	3 (0-4)	6	1.5 (0-2)	0.8
Boston	27	3.0 (0-5)	2.7 (0-4)	3	0.3 (0-1)	1.1

*Average # of months between Intervention 1 to Intervention 4, of those who have done all 4

Exit interview data: Normalizing PrEP use

- "… I talked about it I think a bit in the sessions, but like my relationship with PrEP was really odd, because when I first tried to get on it, the like doctor was like, oh like we only give this to like porn stars basically or like sex workers… so I just had this whole conflated notion of what PrEP was, and I think a lot of my reason for taking it was to kind of like deconstruct that, and that's what I think was hoping for…Because it really was just like this mystic thing to me that it was like, only the like circuit queens and porn stars take it."

Formal analysis not yet completed

Exit Interview data: Virtual sessions

- "… I mean, I'm fortunate I live with people who I can openly discuss sexual health around. So it wasn't a problem I was doing this from my house, instead earlier in my apartment, instead of doing it from like in the office due to the pandemic. But fortunately for myself I can comfortably speak about like sexual health without much worry for consequences or judgment or anything like that."
- "I have started remote and always been remote, I think it would have felt little less in personal. That honestly could have made it also -- I can't really put myself there but it very well could make it easier to than you not even talking to a person in front of you, there was more degrees of separation…"

Formal analysis not yet completed

Exit Interview data: Reminder tools

- "…I think a little maybe too in depth where it was like if you don't -- I feel like it was very, you have to set an alarm, you have to do this -- it was very, like maybe too much involvement… Yeah, I feel like they expect us to write notes, set alarms. I can remember things, I mean, most of them I'm pretty good at remembering things in my head, but I don't need like 10,000 times, you know, reminders about taking my pills and stuff."

Formal analysis not yet completed

Overall conclusions

- CBT based adherence counseling (LifeSteps) appears to be adaptable to and effective in a variety of PrEP-needing populations domestically and globally
- Next steps
  - Complete randomized efficacy/effectiveness trials
  - Determine level of intervention is required (minimum number of sessions) for prevention effective adherence and persistence
  - Implementation science
  - Cost effectiveness

Thank you

- Thank you to our participants.
- Thank you to our colleagues.
- Thank you to our funders (especially the NIH: NICHD, NIDA, NIMH, NIMHD, NIAID).

Questions and contact

- Kenneth H. Mayer, MD kmayer@fenwayhealth.org
- Christina Psaros, PhD cpsaros@mgh.harvard.edu

@DrPsaros
@KHMayer1