# Point-of-Care Urine Tenofovir Feedback Counseling Improves PrEP Adherence for U.S. MSM in Pilot RCT

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## BACKGROUND

- Young men who have sex with men (YMSM) have high HIV incidence and challenges with PrEP adherence are common
- Point-of-care (POC) urine tenofovir (TFV) testing permits real-time objective adherence monitoring at low cost
- A prior study among Kenyan women demonstrated improved long-term adherence when PrEP users had drug-level feedback using the POC test in the clinic (PUMA Study, PMID: 38976993)
- Pilot tested a 2-session, MI-informed intervention with POC self-testing and remote counseling over Zoom among 49 YMSM recruited through a social networking application

## METHODS

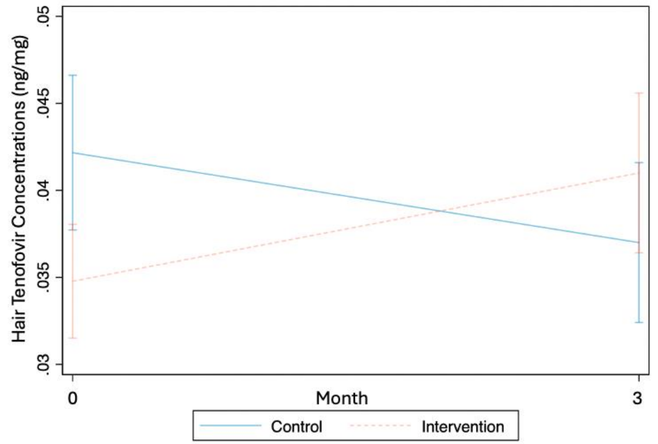
- Participants (age<30; n=49) who reported being prescribed daily oral PrEP (F/TDF or F/TAF) were recruited remotely from a geospatial networking application; randomized 2:1 to standard-of-care vs. a MI-informed POC drug-level feedback, 2 session, 30 min. counseling intervention delivered remotely by psychology students/post-docs over a 3-month period on Zoom
  - 1st session: Reflection on PrEP use and action plan to improve or maintain adherence
  - 2nd session (4 weeks later): choice of focus on relevant contributors to adherence including navigating primary partnerships, mental health, and substance use
- Urine POC TFV tests suitable for both F/TAF and F/TDF mailed to participants and self-administered before each session, informing the counseling
- Self-collected hair samples analyzed for TFV at baseline and 3 months using liquid chromatography/mass spectrometry
- GEE models analyzed the change in hair TFV levels over 3 months in both the intervention and control groups

**Following a remote adherence intervention using feedback from a point-of-care urine tenofovir test, there was a 1-2 tablet/week increase in PrEP adherence based on hair tenofovir levels (0.01 ng/mg; 95% CI: 0.00-0.18; p=0.04)**

## RESULTS

- Participants (n=49; 31 intervention/18 control) had median age 26 (IQR: 23-29) years; 30% were Hispanic, 26% Black; 46% used F/TAF
- Of 31 intervention participants, 100% successfully self-administered the urine test and 100% reported the intervention was somewhat/very acceptable
- Over the 3 months of the intervention, observed 0.01 ng/mg increase in hair TFV levels in the intervention group compared to the control group (95% CI: 0.00-0.18; p=0.04; **Figure**), equivalent to a 1-2 dose/week increase in pill-taking
- Among those with <4 doses/week adherence at baseline, 6 of 8 of the intervention participants increased above 4 doses/week compared to 0 of 4 participants in the control group

**Figure:** Hair Tenofovir Concentrations Before and After the Point-of-Care Urine Tenofovir Feedback Counseling Intervention




## CONCLUSIONS

- Pilot RCT of a telehealth MI-informed POC urine TFV testing intervention demonstrates preliminary efficacy for biologically verified increases in long-term adherence among YMSM using PrEP, assessed via hair TFV levels
- Future studies should test intervention impact with different counselors (i.e. clinicians, nurses, case managers)
- Given the low-cost of the POC test, the remote nature of the intervention, and increasing use of telehealth to provide PrEP care, approach could be scaled nationally and implemented outside of in-person clinic settings if more definitive RCTs provide evidence of efficacy

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