

PrEP uptake, adherence and related behavior



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Health Behavior Research Lab

Three dimensions of health behavior

Complexity	involving higher levels of knowledge, skill or resources to perform than simple behaviors
Frequency	health behaviors can be frequent and repetitive, one time only, or periodic
Volitionality	the degree of personal control over the behavior

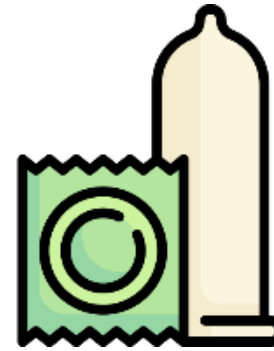
HIV prevention toolkit



Get tested



Take PrEP



Use condoms



Get on treatment

U=U

HIV prevention toolkit



Get tested



Take PrEP

PrEP (pre-exposure prophylaxis) is medicine taken to prevent getting HIV. PrEP is highly effective for preventing HIV when taken as prescribed.

PrEP facts



PrEP reduces the risk of getting HIV from sex by about **99%** when taken as prescribed.

Dosing regimen

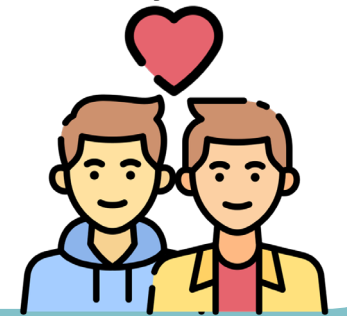
Daily

- Recommended across genders and various subgroups
- Taking TDF/FTC every day

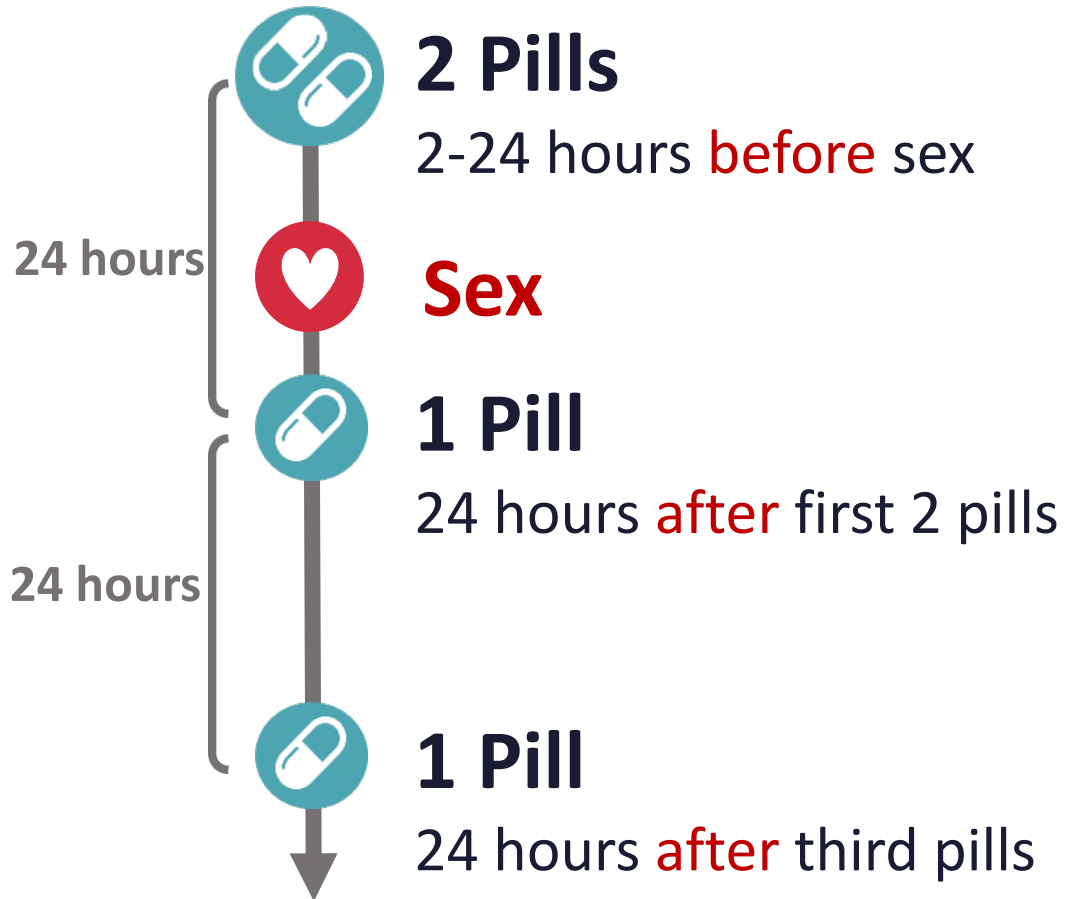


Event-driven

- Currently recommended only for MSM
- Taking TDF/FTC in specific way when needed



Event-driven regimen



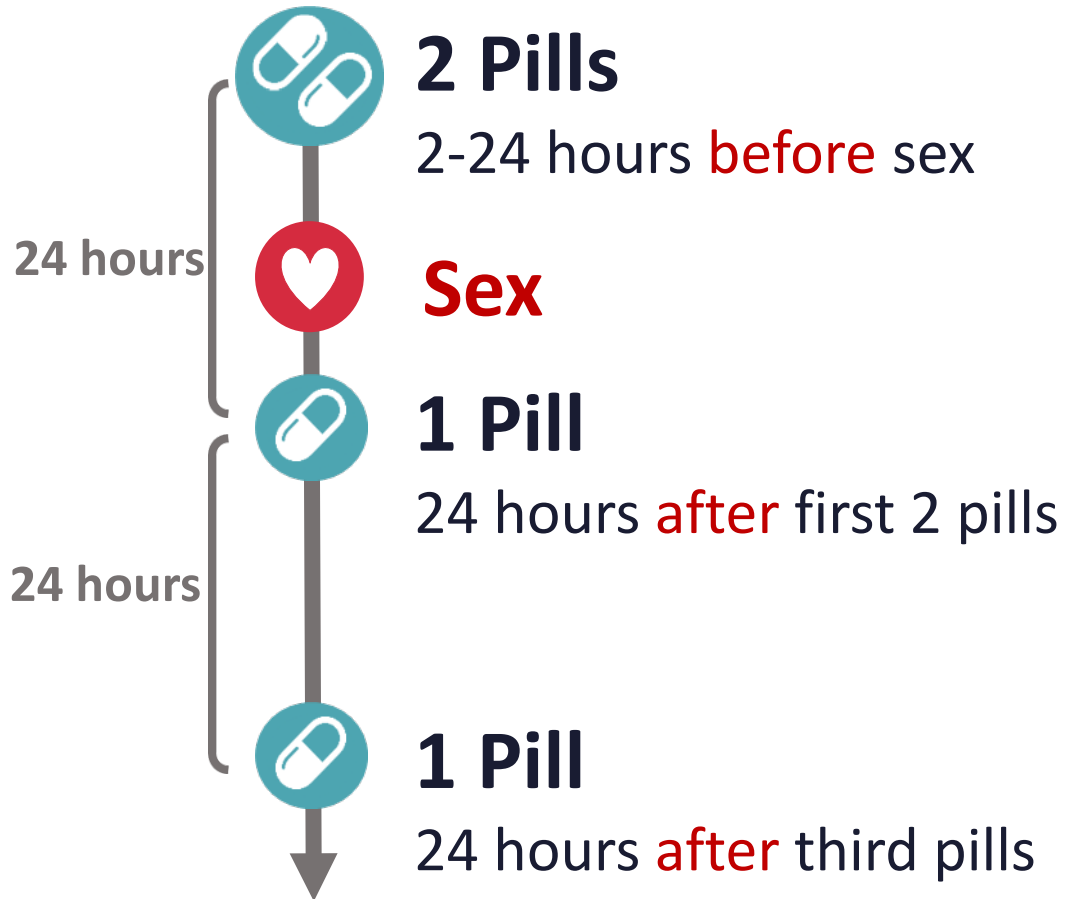
Need to anticipate when **sex** will happen
+
After pills should take at the right time



Missing any pill may cause
insufficient protection



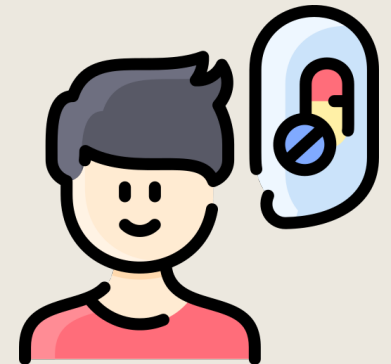
Event-driven regimen



Number of pills need for event-driven regimen are fewer than for daily regimen

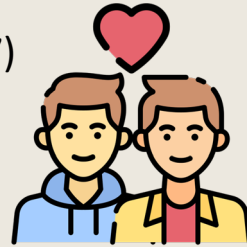


Less cost may improve the usage of PrEP



In Taiwan, both daily and ED regimen were recommended

The majority of PrEP users were MSM and nearly 90% of them preferred **event-driven** PrEP. (Lee YC, 2017)



The coverage of PrEP remains **low**. (PrEPWatch, 2019)

18,000–19,000

1,000–1,500



25.3 million



23.8 million

Constrained by the high cost : 400 USD / 30 pills

Cost is similar to UK, but income differs.

Average GDP :



\$25,026

(National Statistics of Taiwan, 2019)

vs



\$42,491

(The World Bank, 2019)

Today's talk

- 1 Switches between dosing regimens among MSM
- 2 PrEP adherence
- 3 Development of the UPrEPU app

1

Switches between dosing regimens among MSM

Wu, H. J., Ku, S. W. W., Li, C. W., Ko, N. Y., Yu, T., Chung, A. C., & **Strong, C.*** (2021).

Factors associated with preferred pre-exposure prophylaxis dosing regimen among men who have sex with men in real-world settings: a mixed-effect model analysis. *AIDS and Behavior*, 25(1), 249-258.

Suggestion

- MSM who switched between the two regimens have increased complexity of taking PrEP correctly -> need for specific adherence support
- For MSM who have less frequent sexual intercourse-> PrEP event-driven is feasible, more cost-effective, and may also increase the MSM's willingness and motivation to uptake PrEP
- We are concerned that MSM who take PEP may be more likely to have unplanned sex-> Whether PrEP users with PEP experience are suitable for the event-driven PrEP regimen needs more detailed case-by-case evaluation

2

PrEP adherence

Wu, H. J., Wen-Wei Ku, S., Chang, H. H., Li, C. W., Ko, N. Y., & **Strong, C.*** (2021). Imperfect adherence in real life: a prevention-effective perspective on adherence to daily and event-driven HIV pre-exposure prophylaxis among men who have sex with men—a prospective cohort study in Taiwan. *Journal of the International AIDS Society*, 24(5), e25733.



Findings & Discussion

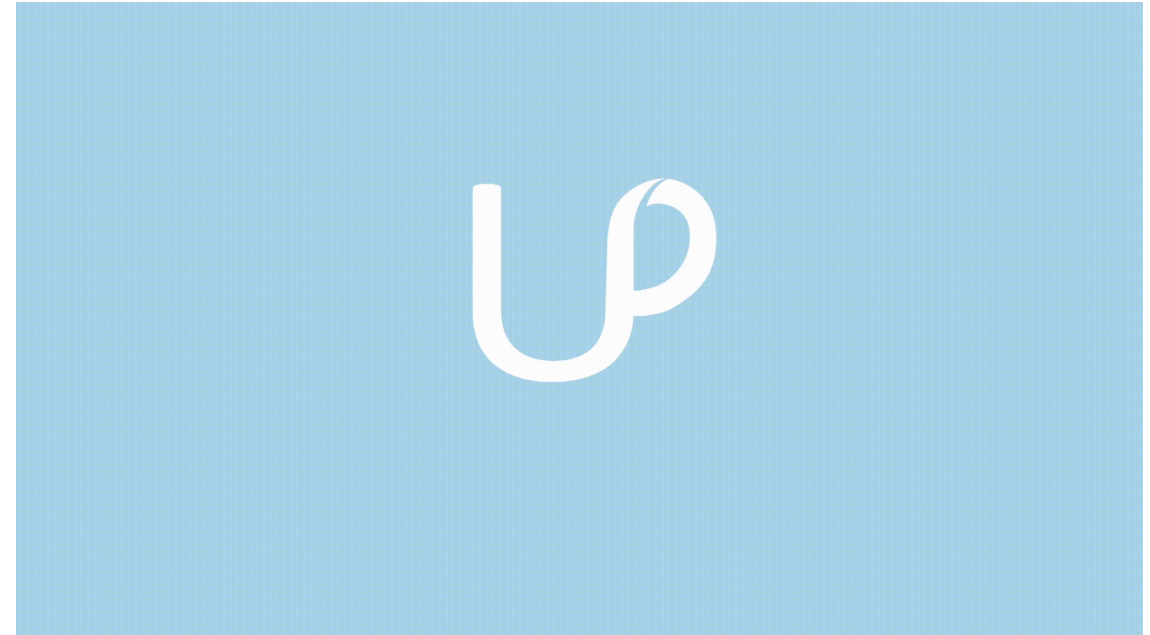
1. Switching to ED dosing regimen had lower adherence than daily users and users who never switched
 - ED PrEP is more complex and technically demanding dosing
 - Familiarized by users by repeating the regimen
2. Not all participants choosing ED PrEP were capable of planning sexual intercourse in advance
3. Novel interventions to assist PrEP users in self-monitoring their PrEP adherence
 - Guide for correct PrEP dosing
 - Allow PrEP users to switch their dosing regimens safely

3 Development of the UPrEPU app

Wu, H. J., Yu, Y. F., Ku, S. W. W., Tseng, Y. C., Yuan, C. W., Li, C. W., Huang, P.H., Ko, N, Y., Anderson, P, L., & **Strong, C***. (2022). Usability and effectiveness of adherence monitoring of a mobile app designed to monitor and improve adherence to event-driven and daily HIV pre-exposure prophylaxis among men who have sex with men in Taiwan. *Digital Health*, 8, 20552076221102770.

UPrEPU

- UPrEPU is a novel mobile application designed with a user-centered approach and was developed following the multiphase optimization strategy framework (comprising a preparation phase, an optimization phase, and an evaluation phase).
- UPrEPU allows flexibility for MSM's dynamic dosing choices and aims to improve PrEP adherence by sending reminders based on the current dosing regimen and users' sexual practices.

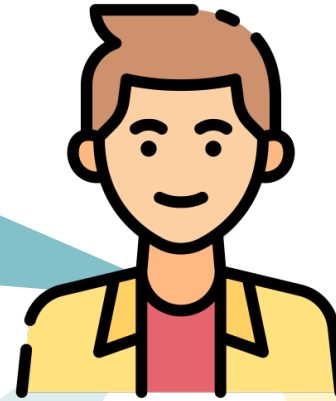


The complexity of PrEP uptake, adherence and behavior



Sex behavior

Relationship status?
HIV status?
How many?
Condom use?
Sexual risk?
Chemsex?



Age?
Salary?
Education level?



Access to PrEP services?
Medical visit payments?
Public subsidy?
Pill burden?
Multiple ways to take PrEP?
Side-effects?

Stigma

- Interpersonal stigma
- Disclosure concerns
- PrEP-related stigma
- HIV-related stigma
- Negative self-image

Thank you.



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