

Preplanned Studies

A Pilot Program of Pre-Exposure and Post-Exposure Prophylaxis Promotion among Men Who Have Sex with Men — 7 Study Sites, China, 2018–2019

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Summary

What is already known on this topic?

Pre-exposure prophylaxis (PrEP) and post-exposure prophylaxis (PEP) had been proved to be effective in HIV prevention among men who have sex with men (MSM) internationally. Use of either PrEP or PEP was found to be limited among Chinese MSM. Relatively little data was reported in China.

What is added by this report?

Our program indicated that PEP was more acceptable than PrEP among MSM in China. Drugs of lower cost and related knowledge dissemination could increase PrEP and PEP uptake among MSM in China.

What are the implications for public health practice?

PrEP and PEP are likely to contribute significantly to human immunodeficiency virus (HIV) prevention in China.

Human immunodeficiency virus (HIV) prevalence among men who have sex with men (MSM) continues to rise globally (1), and China has faced the same epidemic. Pre-exposure prophylaxis (PrEP) and post-exposure prophylaxis (PEP) are innovative strategies that have been proven to be effective in HIV prevention among MSM (2). However, the strategies have not been implemented nationwide in China. From October 2018 to September 2019, a pilot program was conducted to establish a delivery mode of PrEP/PEP services and inform the development of national PrEP/PEP guidelines. This pilot program established PrEP and PEP services targeting MSM in seven sites in China. Data such as the number of MSM taking PrEP/PEP and the number of follow-up for PrEP/PEP users were collected. In the pilot program, MSM users of PrEP or PEP were limited. There were more MSM taking PEP than those who were taking PrEP. The high costs of drugs were the main barrier for MSM who met the criteria of PrEP or PEP uptake

but chose not to take it. Follow-up rates were low for both PrEP and PEP users. PrEP and PEP knowledge dissemination should be strengthened among MSM. Generic low-cost drugs for PrEP and PEP may increase the availability and acceptability of these drugs in controlling the HIV epidemic.

This pilot program was implemented from October 2018 to September 2019 in 7 sites including the following areas: Beijing Municipality, Tianjin Municipality, Harbin City of Heilongjiang Province, Changsha City of Hunan Province, Nanning City of Guangxi Zhuang Autonomous Region, Kunming City of Yunnan Province, and Guiyang City and Zunyi City (site covered both cities) of Guizhou Province. Each site set up 1–2 PrEP/PEP clinics for implementing the program. Information of the program was disseminated through online advertising posted in mobile phone applications, instant messaging chat rooms, and other websites known to be frequently used in the Chinese MSM community. The program was also promoted at China CDC voluntary counseling and testing clinics and by peer referral from community-based organizations.

Participant eligibility criteria for PrEP/PEP uptake included the following: 1) being biologically male; 2) being 18 years or older; 3) having had at least one sexual contact with another male in the past; 4) being tested HIV negative; and 5) being at risk of HIV infection, which could mean that the individuals in the past six months have had multiple male sex partners or sexually transmitted diseases, have been involved in commercial sex, or have had male sex partners who have used club drugs or who have infected with HIV. In addition, potential PEP users must have been exposed to HIV within the last 72 hours.

At PrEP/PEP clinics, participants received counseling and risk assessment of HIV infection. If assessed to be at risk of HIV infection, they would be tested for HIV, syphilis, Hepatitis B, and serum creatinine. Those tested as HIV negative would sign a

written informed consent form and received a prescription from doctors at clinics. The first follow-up was one month after the first visit at clinics, and the following follow-ups took place every three months. At each follow-up, participants received the same testing as the first visit and a prescription. With the prescription, they could purchase drugs at hospitals or pharmacies. PrEP users took drugs on a daily basis or sex-event driven basis, and PEP users took drugs every day for 28 days (3–4).

Data on the PrEP/PEP users' demographic characteristics, HIV-risk assessments, test results, drug prescriptions, and follow-ups were collected by clinic medical staff and recorded using Microsoft Excel 2010. Data were reported to local CDCs and the national program team every month. Data analysis was performed in SPSS (version 17.0, SPSS Inc, Chicago, IL, USA).

Among 417 MSM who consulted staff about PrEP and met PrEP uptake criteria, 65.2% (272/417) chose to take PrEP. Around 98.2% (267/272) of the MSM taking PrEP were located in Beijing. Among 900 MSM who consulted about PEP and met PEP uptake criteria, 83.7% (753/900) chose to take PEP. The MSM taking PEP were mainly located in Tianjin (22.7%, 171/753), Guizhou (20.2%, 152/753), and Guangxi (22.6%, 170/753) (Table 1). Main reasons for not taking PrEP or PEP were high drug costs and concerns of side effects.

Most PrEP (59.6%) or PEP (53.5%) users were in the 25–35 age group. A total of 68.5% (185/272) of PrEP users and 42.2% (318/753) of PEP users

attended the first follow-up. Older MSM in both groups were more likely to attend the first follow-up than young MSM (Table 2). Around 10.0% (27/272) and 20.2% (152/753) of MSM attended the second follow-up for PrEP and PEP, respectively. No MSM attended the third or later follow-ups.

DISCUSSION

No real-world tenofovir disoproxil fumarate/emtricitabine (TDF/FTC) regimen PrEP uptake data in China has been reported, although the first related study is being conducted (5). Our pilot program found that many MSM took PrEP and PEP services in the seven study sites in less than one year, which indicated relatively high demand of PrEP/PEP services among MSM. However, high costs of the drugs made MSM consulting staff for PrEP or PEP but ultimately deciding not to use the drugs. Around 98% (267/272) of the MSM taking PrEP were located in Beijing, which was likely due to a research study providing free PrEP drugs for MSM in Beijing. As of November 2020, PrEP drugs cost around 1,980 RMB (approximately 300 USD) per month and PEP costs 3,980 RMB (approximately 570 USD) per time. Some sites reported that some MSM inquired about PrEP or PEP and associated costs at clinics but chose to purchase generic drugs of much lower price from Thailand or India. Therefore, generic drugs of lower price would likely increase the availability and acceptability of the regimen. The other main barrier reported by MSM was that they were concerned about

TABLE 1. Pre-exposure prophylaxis (PrEP) or post-exposure prophylaxis (PEP) taken among men who have sex with men in the 7 study sites, China, 2018–2019.

Study site	PrEP			PEP		
	Number inquiring about drugs, n (%)	Number of taking, n (%)	Main reasons for not taking	Number inquiring about drugs, n (%)	Number of taking, n (%)	Main reasons for not taking
Beijing	327(78.4)	267(98.2)	Side effects, bone mineral density	55(6.1)	32(4.2)	Side effects
Tianjin	69(16.6)	0(0)	High cost, side effects	218(24.2)	171(22.7)	High cost, side effects
Kunming, Yunnan	0(0)	0(0)		118(13.1)	115(15.3)	High cost
Guiyang and Zunyi, Guizhou	8(1.9)	0(0)	High cost	184(20.5)	152(20.2)	High cost
Nanning, Guangxi	4(1.0)	4(1.5)		173(19.2)	170(22.6)	high cost
Changsha, Hunan	9(2.1)	1(0.3)	High cost, side effects	146(16.2)	107(14.2)	
Harbin, Heilongjiang	0(0)	0(0)	No pilot for PrEP	6(0.7)	6(0.8)	
Total	417(100.0)	272(100.0)	High cost, side effects	900(100.0)	753(100.0)	High cost

TABLE 2. Attendance of first follow-up at one month after taking pre-exposure prophylaxis or post-exposure prophylaxis among men who have sex with men in the 7 study sites, China, 2018–2019.

Age	Total, n (%)	Attending first follow-up		p value*	OR (95% CI)
		Yes, n (%)	No, n (%)		
PrEP					
18–24 years	37(13.6)	19(51.4)	18(48.6)	0.011	0.33(0.14–0.77)
25–35 years	162(59.6)	112(69.1)	50(30.9)	0.284	0.71(0.37–1.34)
≥36 years	71(26.1)	54(76.1)	17(23.9)		
Total	270(100.0)	185(68.5)	85(31.5)		
PEP					
18–24 years	204(27.1)	65(31.9)	139(68.1)	0.001	0.47(0.31–0.74)
25–35 years	403(53.5)	181(44.9)	222(55.1)	0.326	0.83(0.57–1.21)
≥36 years	145(19.3)	72(49.7)	73(50.3)		
Total	752(100.0)	318(42.3)	434(57.7)		

Abbreviation: PrEP=Pre-exposure prophylaxis; PEP=Post-exposure prophylaxis; OR=odds ratio; 95% CI=95% confidence interval.

* p values were calculated using uni-variate logistic regression, setting the independent value of age as a categorical variable.

side effects of the drugs, which was in accordance with previous studies (6). This implies that the safety of PrEP/PEP drugs should be highlighted during PrEP and PEP knowledge dissemination in the future.

Most PrEP or PEP users were between 25–35 years old, likely because MSM of this age group were generally more sexually active than other MSM. Follow-up rates were generally low, but rates were much lower among PEP users than PrEP users, which was likely due to PEP users not needing to come back for further prescription drugs while PrEP users often must return for this reason. Given the importance of follow-ups, factors contributing to low follow-up rates need further study. Also, PrEP/PEP clinic doctors, local CDC staff, and community-based organization (CBO) staff who work with MSM should prioritize increasing PrEP/PEP follow-up rate.

This report on the pilot program was subject to some limitations. First, there was limited data for analyzing factors for PrEP or PEP usage, which should be further explored in future studies. Second, the MSM in the program were not representative. Third, as no free drugs were provided in the program, limited numbers of MSM took PrEP outside of Beijing. Hence, there was no relative data in other areas of China or abroad to draw comparisons for our conclusions. However, the program still demonstrated some real needs of MSM in these study sites.

In conclusion, both PrEP and PEP services were acceptable among MSM in China. Current high cost of original drugs limit their uptake. To scale up the

services, the cost of original drugs should be reduced or generic drugs of lower cost should be produced. To ensure adherence to the strategy, CBOs should also be involved to coordinate with hospitals.

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