

Preventing HIV infection with prophylactic drugs important to reversing HIV epidemic among men who have sex with men

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The use of antiretroviral therapy (ART) taken as pre-exposure prophylaxis (PrEP) could lead to a marked decline in HIV incidence—the annual rate of infection—among men who have sex with men (MSM) in the UK by the end of this decade, new modelling research published in *The Lancet HIV* journal suggests.

The research shows that offering PrEP alongside regular HIV testing and early treatment to just a quarter of MSM at high risk of contracting HIV could prevent around 7400 new HIV infections (44% of total incidence) in the UK before 2020.

"Current [prevention](#) efforts in the UK that focus on correct and consistent condom use and regular HIV testing have been falling short. HIV rates among men who have sex with men remain high with around 2800 men who have sex with men becoming infected with HIV in 2014, and the trend shows no sign of abating," explains lead author Dr Narat Punyacharoensin who conducted the research while at the London School of Hygiene & Tropical Medicine, London, UK.

"Our results show that pre-exposure prophylaxis offers a major opportunity to curb new infections and could help reverse the HIV epidemic among men who have sex with men in the UK."

Dr Punyacharoensin and colleagues used a mathematical model fitted with behavioural and surveillance data to evaluate the ability of various HIV prevention measures (ie, expansion of HIV testing, test-and-treat programmes, PrEP, and sexual behavioural changes) to avert HIV infections in MSM (aged 15 to 64 years old) in the UK between 2014 and 2020. If the status quo is maintained, the researchers predict 16955 new HIV infections in MSM between 2014 and 2020 (table 1).

The researchers estimate that even when targeted only at high-risk men, PrEP was more effective than all other individual measures aimed at the entire UK MSM population, preventing 59% of new infections (9955). However, they predict that the greatest number of infections would be prevented by a 'practical combined prevention programme' that includes PrEP alongside yearly HIV testing for HIV-negative men and immediate ART for HIV-positive men (table 2).

One of the main concerns about PrEP is whether [men](#) who know they are protected by prophylaxis will compensate for this by increasing their sexual risk-taking, for example by increasing their levels of unprotected sex (risk compensation). In this study, risk-compensation analyses indicate that even a substantial increase in unprotected anal intercourse and sexual partners is unlikely to completely counteract the strong HIV prevention benefit of prophylaxis (table 2).

According to Professor Noel Gill, Head of Public Health England's HIV and STI Department and a co-author, "The findings imply that a pre-exposure prophylaxis programme could be an important addition to current efforts to prevent HIV transmission in England. Public Health England has provided much evidence to NHS England to help inform their decision analysis process. This evidence includes studies on the cost-effectiveness, the budgetary impact, and [public health](#) impact of a possible publically funded HIV pre-exposure prophylaxis policy."

Writing in a linked Comment, Emily Arnold and Wayne Steward from the Center for AIDS Prevention Studies at the University of California, San Francisco, USA, discuss the work that needs to be done in health systems to make PrEP a viable and accessible prevention strategy for MSM. They

write, "To maximise success, PrEP implementation needs to include the ability to engage with MSM communities and reach [high-risk](#) individuals, and should provide a point of access that is convenient and does not elicit fears of stigma, adherence counselling and monitoring for drug side-effects to ensure that individuals use PrEP effectively, and support for the uptake of complementary behavioural prevention strategies (eg, reduced number of partners and condom use). Additionally, medical providers need guidance about how to manage patients receiving PrEP, and how drug and ancillary care costs should be covered. Finally, gay communities should be mobilised and educated about PrEP use and its use not only in prevention of HIV transmission but also in promotion of sexual health and wellbeing."

More information:

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