

Long-term protection from HIV infection in the expanded and extended EPIC-NSW prospective cohort study of oral HIV pre-exposure prophylaxis in gay and bisexual men

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Background:

Daily pre-exposure prophylaxis (PrEP) is effective in preventing HIV, but there are few long-term data on effectiveness and adherence in real-world settings.

Methods:

The Expanded PrEP Implementation in Communities–New South Wales (EPIC-NSW) study was an observational study of daily, oral PrEP in high-risk participants. Originally planned for 3700 participants followed for one year, the study was expanded so that all eligible NSW and ACT participants could obtain PrEP and was extended until publicly-subsidised PrEP became available in Australia. Adherence was estimated by medication possession ratio (MPR), defined as the proportion of PrEP pills dispensed in 90 days, assuming daily dosing.

Results:

We enrolled 9709 participants of whom 9596 (98.3% gay/bisexual men) were dispensed PrEP, between March 1 2016 and April 30 2018. Participants were followed until March 31 2019, with at least one follow-up HIV test available in 9520 (99.2%) participants. Mean MPR declined from 0.93 to 0.64 from the first to the ninth quarter. There were 30 HIV seroconversions over 18628 person years (PY), an incidence of 1.61 per 1000 PY (95% CI 1.13-2.30). Being younger, living in a postcode with fewer gay men, reporting more risk behaviours at baseline and having an MPR of less than 0.6 were each univariately associated with increased HIV incidence. In the final year of follow-up, when PrEP was mostly purchased through the PBS rather than provided free by the study, HIV incidence remained low at 2.24 per 1000PY (95% CI 1.46-3.44).

Conclusion:

HIV incidence remained low over up to three-years of follow-up, including during a transition from study-provided to publicly-subsidised PrEP. In a setting of affordable PrEP and associated health care services, very low HIV incidence of one to two per thousand person-years can be maintained in previously high-risk gay and bisexual men.

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