

Universal access to preventive drugs could reduce HIV incidence in sub-Saharan Africa

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SEARCH study health fair in southwestern Uganda. Credit: Gabriel Chamie

Universal HIV testing with linkage to treatment and prevention may be a promising approach to accelerate reductions in new infections in generalized epidemic settings, according to a study published February 9th, 2021 in the open-access journal *PLOS Medicine* by Catherine Koss of the University of California, San Francisco, and colleagues.

Despite major gains in HIV testing and treatment, in 2019 there were 1.7 million new HIV infections, of which nearly 60% occurred in sub-Saharan Africa. Daily oral pre-exposure prophylaxis (PrEP) with tenofovir disoproxil fumarate/emtricitabine is highly effective for HIV

prevention and could substantially reduce new HIV infections if offered alongside access to HIV testing and treatment. But little is known about the incidence of new HIV infections among PrEP users in settings with generalized HIV epidemics, particularly outside of selected risk groups. To address this knowledge gap, Koss and colleagues conducted community-based HIV testing and offered [universal access](#) to PrEP in 16 communities in the Sustainable East Africa Research in Community Health (SEARCH) study in rural Kenya and Uganda. They offered rapid or same-day PrEP initiation and flexible service delivery with follow-up visits at facilities or community-based sites over a period of 144 weeks. According to the authors, this study is the first in sub-Saharan Africa to assess HIV incidence after offering PrEP at a population level.

Among 74,541 individuals who tested negative for HIV, 21% were assessed to be at elevated HIV risk, and 5,447 (35%) of those individuals initiated PrEP, with 79% participating in follow-up visits. Over 7,150 person-years of follow-up, HIV incidence was 0.35 per 100 person-years (95% CI 0.22-0.49) among PrEP initiators. Among matched historical controls in 8 of the communities, HIV incidence was 0.92 per 100 person-years (95% CI 0.49-1.41) over the year prior to PrEP availability. Compared to matched historical controls, HIV incidence was 74% lower overall in PrEP initiators in 8 of the communities (adjusted incidence rate ratio [aIRR] 0.26, 95% CI 0.09-0.75; $p=0.013$), and 76% lower among women (aIRR 0.24, 95% CI 0.07-0.79; $p=0.019$), but not significantly lower in men. Data on HIV incidence among historical controls were not available for the remaining 8 communities.

Because rates of new HIV infections are higher in women than in men, the results suggest that PrEP may help to close the gender gap in new infections. According to the authors, universal access to HIV testing, treatment, and prevention, including rapid provision of PrEP with flexible service delivery, could reduce HIV incidence in generalized epidemic settings.

Dr. Kanya states "We know that PrEP is highly effective—and now we need systems that make it easier to start and continue taking it. This study showed that providing broad access to PrEP in community-based settings significantly reduced HIV incidence."

Dr. Koss adds "We found that universal HIV testing with easy access to PrEP was associated with lower rates of HIV, particularly among women."

More information: Koss CA, Havlir DV, Ayieko J, Kwarisiima D, Kabami J, Chamie G, et al. (2021) HIV incidence after pre-exposure prophylaxis initiation among women and men at elevated HIV risk: A population-based study in rural Kenya and Uganda. *PLoS Med* 18(2): e1003492. doi.org/10.1371/journal.pmed.1003492

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