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Cost-effectiveness of lenacapavir for PrEP in Africa

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Injectable lenacapavir administered every 6 months for pre-exposure prophylaxis (PrEP) has the potential to revolutionise HIV prevention in countries with high HIV prevalence. The PURPOSE-1 study[1] showed the efficacy of lenacapavir in preventing HIV among adolescent girls and young women, with zero infections reported in the lenacapavir group compared with background incidence of 2·41 per 100 person-years (95% CI 1·82–3·19). PURPOSE-1 was conducted in adolescent girls and young women in South Africa and Uganda, who continue to face the highest HIV incidence rates compared with male counterparts despite increased access to oral PrEP and the preventive effects of antiretroviral therapy. In South Africa alone, 89 000 women contracted HIV in 2023 compared with 50 000 men.[2] An estimated 1·3 million people acquired HIV in 2023 globally, exceeding the 2025 target of 370 000 by more than three-fold.[2] Although oral PrEP use has increased to approximately 3·5 million global users in 2023, it remains far below the global 2025 target of 21·2 million.[2] Effective use of oral PrEP remains a challenge, particularly among adolescent girls and young women who face difficulties with daily pill use and encounter social and logistical barriers to consistent use.[3,4] Editors at *The Lancet HIV* recently described lenacapavir as a potential game-changer in HIV prevention, provided it is made rapidly and affordably accessible to those who need it most, including adolescent girls and young women in Africa.[5]

In *The Lancet HIV*, Linxuan Wu and colleagues[6] report the results of the first modelling study to assess the impact of scaling up lenacapavir use in eastern and southern Africa. The authors used an agent-based network model to simulate the rollout of lenacapavir in Zimbabwe, South Africa, and western Kenya over the next decade.[6] The study estimated the maximum per-dose price for lenacapavir that would achieve cost-effectiveness (under US$500 per disability-adjusted life-year averted) compared with oral PrEP. The findings showed that lenacapavir, if reaching 1·6–4·0% of the population, could avert 12·3–18·0% of HIV infections. The maximum cost per dose to achieve cost-effectiveness ranged from US$16·58 (95% uncertainty interval 15·44–17·70) in western Kenya to $106·28 (95·72–115·87) in South Africa. Under a scenario with higher lenacapavir coverage, in which 64–76% of key subgroups (such as female sex workers, male clients of female sex workers, adolescent girls and women, and older women and males with multiple partners) were reached, lenacapavir scaled up to 3·2–8·1% population coverage and averted 21·2–33·3% of HIV infections. Expanding coverage led to more infections being prevented, resulting in approximately 10–18% lower price thresholds for cost-effectiveness. Interestingly, another recently published analysis showed that lenacapavir, assuming voluntary licensing and multiple suppliers, could be mass-produced at less than US$100 per person per year, suggesting that the price thresholds reported by Wu and colleagues might be possible.[7]

Future studies should seek to include other populations with a high HIV burden in their models, including pregnant and lactating women and men who have sex with men. The PURPOSE-2 study (NCT04925752) is evaluating lenacapavir among men who have sex with men and results are expected later in 2024. Further information on the use of oral PrEP combined with lenacapavir, in addition to other long-acting PrEP (eg, long-acting cabotegravir and dapivirine vaginal rings) will be important to inform policy decisions.[8] In their study, Wu and colleagues[6] made important assumptions that some PrEP clients would still prefer oral PrEP despite the availability of long-acting products, in line with recent studies on choice of PrEP agents.[9,10] They assumed that lenacapavir would be available in eastern and southern Africa by 2026, which might be optimistic; delayed access might cause lower price thresholds due to lower HIV incidence over time. Furthermore, modelling and survey data can help identify variations in HIV risk among adolescent girls and young women by age and geographical location, enabling programme managers and policy makers to target expanded PrEP choice more effectively based on the specific needs of each community.[2]

Lenacapavir has the potential to substantially reduce HIV incidence and could be a pivotal tool in achieving UNAIDS targets. Modelling studies of long-acting PrEP are useful in estimating the price thresholds needed to achieve cost-effectiveness in high burden, and often resource-constrained, countries. Estimates can indeed assist governments or funders with price negotiations

with manufacturers; however, they should not become a barrier to access if these prices are not achieved. Clinical trials of new PrEP modalities are conducted in Africa yet, when effective, they are not available to these countries due to unaffordability or manufacturing constraints, hindering equitable and cost-effective distribution. The affordability of new long-acting PrEP options, along with the speed of their rollout to those who need them most, will be crucial factors in their impact.

We declare no competing interests.

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