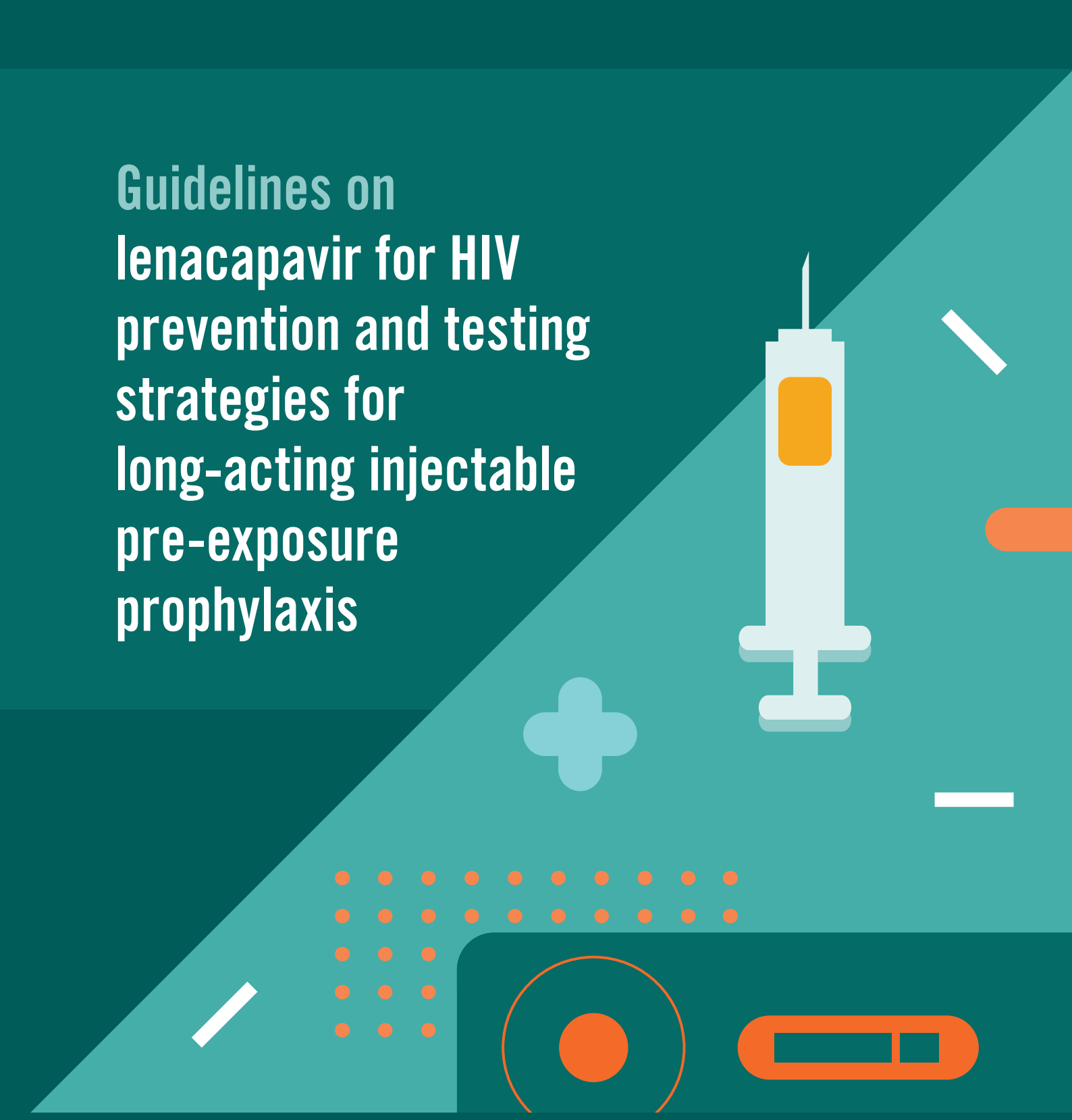
Guidelines on lenacapavir for HIV prevention and testing strategies for long-acting injectable pre-exposure prophylaxis



Web Annex D. Should HIV testing services with rapid diagnostic tests and/or self-tests be used for initiation or continuation of injectable long-acting PrEP?

World Health Organization

Guidelines on lenacapavir for HIV prevention and testing strategies for long-acting injectable pre-exposure prophylaxis

Web Annex D. Should HIV testing services with rapid diagnostic tests and/or self-tests be used for initiation or continuation of injectable long-acting PrEP?

World Health Organization

Suggested citation. Tieosapjaroen W, Williams E, Johnson CC, Baptista Da Silva C, Barr-DiChiara M, Ong JJ. Web Annex D. Should HIV testing services with rapid diagnostic tests and/or self-tests be used for initiation or continuation of injectable long-acting PrEP? In: Guidelines on lenacapavir for HIV prevention and testing strategies for long-acting injectable pre-exposure prophylaxis (PrEP). Geneva: World Health Organization; 2025. https://doi.org/10.2471/B09479

The named authors alone are responsible for the views expressed in this publication.

This publication forms part of the WHO document entitled *Guidelines on lenacapavir for HIV prevention and testing strategies for long-acting injectable pre-exposure prophylaxis (PrEP)*. It is being made publicly available for transparency purposes and information, in accordance with the *WHO handbook for guideline development*, 2nd edition (2014).

Should HIV testing services with rapid diagnostic tests and/or self-tests be used for initiation or continuation of injectable long-acting PrEP?

Authors: Warittha Tieosapjaroen,[1,2] Eloise Williams,[3,4] Cheryl C. Johnson,[5] Carlota Baptista Da Silva,[5] Magdalena Barr-DiChiara[5] and Jason J. Ong[1,2,6]

1. Melbourne Sexual Health Centre, Alfred Health

2. School of Translational Medicine, Monash University

3. Victorian Infectious Disease Reference Laboratory

4. Department of Microbiology, Alfred Health

5. Department of Global HIV, Hepatitis and Sexually Transmitted Infections Programmes, World Health Organization

6. Faculty of Infectious and Tropical Diseases, London School of Hygiene and Tropical Medicine

Background. As the global effort to scale up HIV pre-exposure prophylaxis (PrEP) intensifies, long-acting PrEP (LA-PrEP) products such as injectable cabotegravir (CAB-LA) and lenacapavir (LEN) present innovative approaches. Safe, effective and affordable HIV testing strategies are critical for scaling up access to PrEP, including the new LA-PrEP options. This systematic review synthesizes evidence on the use of different testing approaches for injectable LA-PrEP, with a focus on rapid diagnostic tests (RDTs), self-tests (HIVST) and nucleic acid testing (NAT).

Methods. We systematically searched for studies through 18 October 2024 that assess the use of different HIV testing strategies in the context of injectable LA-PrEP delivery. We also contacted authors and researchers from registered studies, identified through a survey, through 1 December 2024. Studies were eligible if they reported on one or more of the following outcomes related to HIV testing: time to linkage for those testing positive for HIV, PrEP discontinuations, HIV positivity, diagnostic accuracy and performance, time to diagnosis/delayed detection of HIV infection, detection of resistance-related mutations, testing frequency, sexual risk behaviour and clinical or social harm. Additional information on values and preferences, feasibility, equity and resource use were collected and summarized descriptively. Meta-analyses of studies reporting comparable outcomes were conducted using a random-effects analysis for relative risks (RR) and 95% confidence intervals (CI). GRADE methodology was used to assess the certainty of evidence. ROBIN-I and QUADAS-2 were used to determine the quality of non-randomized studies and diagnostic accuracy studies, respectively.

Results. Out of 7698 records, 53 reports were selected, representing 22 studies (CAB-LA 20, LEN 2) across 15 countries spanning Africa, Asia, Europe and North and South America. Of these studies 14 were observational; six were non-randomized comparator studies; one was a case report; and one was a case series. The certainty of evidence was determined to be low.

Key findings from the review were that, when compared with HIV testing algorithms using lab-based testing and/or NAT techniques, RDT-based algorithms are likely to be more acceptable, feasible and affordable, may have faster turnaround time and could enable clients to link to ART after a positive diagnosis. RDTs may make little or no difference to HIV positivity rates (RDT compared with NAT: odds ratio (OR) 0.66, 95% CI: 0.29-1.50, absolute

difference of one fewer infection detected per 1000 tests (range: two fewer to one more). There may have been little to no difference in the negative predictive value and the absolute numbers of delayed HIV detection at initiation (OR 7.08, 95% CI: 1.87–26.86) and no absolute difference in delayed detection per 1000 tests (range: 0 fewer to 0 more) or testing frequency.

Seven studies reported no clinical or social harms related to RDTs compared with lab-based testing and/or NAT techniques. While there was no direct evidence that different testing approaches in real-world settings could have prevented the development of resistance-associated mutations (RAM), 12/8171 (0.1%) cases of RAMs were reported in four studies implementing LA-PrEP. Using data from HPTN 083 open label extension, detecting one additional case using NAT - missed by RDT at an earlier time point - would require testing 5305 people using NAT. Average turn-around time of test results were same-day for RDT and a median of 35 days or more for lab-based testing. Costs ranged from US$ 3.00 to 5.00 for HIVST, US$ 0.17 to 4.00 for RDT, US$ 1.20 to 24.08 for laboratory-based Ag/Ab tests and US$ 8.80 to 85.10 for NAT.

Minimal data on HIVST were available. However, there was some evidence that HIVST could increase testing frequency and flexibility of service delivery (that is, users could self-test at any time). Indirect evidence also suggested potential cost savings or limited to no effect on PrEP costs and high acceptability, feasibility and opportunity to diversify and streamline PrEP implementation through demedicalized services, such as self-care, pharmacy-based, telehealth and community-led approaches.

Conclusion. HIV testing strategies and algorithms relying on RDTs largely result in similar or better outcomes for injectable LA-PrEP users at a population level when compared with lab-based Ag/Ab testing and NAT techniques. An RDT-based algorithm may improve access to injectable LA-PrEP in limited resource settings, where NAT resources are often unavailable. By reducing cost and infrastructure barriers, an RDT-based algorithm promotes health equity, particularly among marginalized populations and those in remote areas. Implementing RDT-based testing in injectable LA-PrEP services is feasible due to their minimal infrastructure requirements, ease of use and immediate results, which facilitate ongoing PrEP or linkage to HIV confirmatory testing. This feasibility is particularly beneficial in limited resource settings and for mobile or underserved populations. Indirect evidence suggests that RDTs and HIVST are highly acceptable to users and health care providers. Their convenience, affordability and discreet nature make them preferable to more invasive and time-consuming NAT procedures.

Department of Global HIV, Hepatitis and Sexually Transmitted Infections Programmes

World Health Organization
Avenue Appia 20
1211 Geneva
Switzerland

www.who.int