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## Study of laboratory tests to discern ‘recently’ from ‘non-recently’ acquired HIV infection opens new possibilities for HIV surveillance and clinical management of HIV

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In collaboration with a multi-national team of researchers SACEMA has published a benchmark-setting evaluation of HIV disease-staging diagnostic tests which have the potential to revolutionise HIV incidence surveillance (1). It is a persistent challenge that disease incidence (the rate of occurrence of new cases) is much harder to measure than disease prevalence (the fraction of a population which has the condition at a certain point in time). Incidence is much more informative, as it tells us about recent disease transmission, and hence about effectiveness of efforts to curb transmission.

Incidence estimation is more than an academic technical challenge. Charged debate ensues when politicians, activists, and researchers struggle to agree on what the epidemiological trends actually are. Prevalence of HIV is widely tracked and cited, but very difficult to interpret, as it emerges over a long time scale of interplay between new infections and post infection survival. For example (such as has occurred in South Africa) in the context of a rapidly growing effective antiretroviral treatment programme, an established high stable prevalence is expected to be nudged upwards as mortality decreases, even if incidence actually declines. Alternatively, a decline from high prevalence peaks, in the absence of treatment (as has been seen in numerous countries) could initially be a sign of alarming mortality increases, rather than decreased incidence.

The work just published in the high profile journal AIDS, is the first landmark publication from a major initiative, funded by the Bill & Melinda Gates Foundation, known as the Consortium for the Evaluation and Performance of HIV Incidence

Assays (CEPHIA <http://www.incidence-estimation.org/page/cephia>).

At the end of the year, the CEPHIA consortium will complete its first major phase, which includes benchmarking further ‘recent infection’ assays and exploring combinations of separately developed biomarkers into more complex tests, or ‘algorithms’. CEPHIA phase II includes the expansion of the specimen repository through ongoing studies, and supporting, through the provision of specimens and analytical tools, numerous independent ‘biomarker discovery’ projects.

SACEMA is also involved in a World Health Organisation (WHO) working group which has helped to coordinate guidelines for the use of recent infection tests for surveillance, and is hosting and facilitating a WHO sponsored training workshop on this work in Stellenbosch in September. A SACEMA policy brief (2) has been released, on the occasion of the appearance of the article in AIDS, to provide a qualitative briefing note on recent infection testing technology and its applicability.

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### References:

1. Kassanje R, Pilcher CD, Keating SM, et al. Independent assessment of candidate HIV incidence assays on specimens in the CEPHIA repository. AIDS. 2014 Aug 19. [Epub ahead of print]
2. SACEMA Policy Brief: Status update in the search for laboratory tests for ‘Recent HIV infection’ to support HIV surveillance.