Editorial

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The central theme of this first SACEMA Quarterly Epidemiological Update of 2010 is the rate of occurrence of new HIV infections – also known as HIV incidence. The issue is examined through three distinct perspectives: 1) Recent advances in measuring the HIV incidence in a population, and/or how it changes over time, 2) estimating the relative importance of various 'modes of transmission' in contributing to new cases of HIV infection, and 3) the use of antiretroviral treatment of infected individuals to curb their infectivity and hence reduce HIV incidence.

The issue of measuring, more precisely 'estimating', disease 'incidence' (rate of occurrence of new cases/infections) is central to understanding most epidemiological trends. There are exceptions, such as assessing the legacy of health impacts long after the key triggers of infection, injury or other harm, like in the wake of industrial accidents and conflicts. Certainly, in assessing the state of the HIV epidemic, incidence, rather than prevalence (the proportion of a group currently infected), holds the key to understanding the state of the nation, as well as the planning for studies on interventions and the evaluation of their impact.

Incidence estimation is a priority area of research at SACEMA. This involves the development of theoretical and computational tools, as well as partnerships with laboratory scientists and major studies in the field. We hope this helps to create space for technically correct, demystified discussion of incidence estimation, against the background of contentious, sometimes divisive, debate about the interpretation of available data. There is no simple method for measuring incidence precisely, for any illness, but the relevant theoretical and laboratory technologies are improving, and the question will not go away, neither for HIV, nor for other serious illnesses.

The article by Thomas McWalter gives an overview for the non-specialist of some important advances in making incidence estimation more feasible and robust. SACEMA affiliates have produced some of the crucial research reviewed in this article.

Eleanor Gouws explains a model, supported by UNAIDS, which focuses on assessing the priorities for intervention in the light of the dominant modes of transmission characterizing a HIV epidemic at a point in time. SACEMA has played a role in this by applying the "incidence by modes of transmission" model to the South African Context, in the form of a report to the South African National AIDS council.

In the first edition of the SACEMA Quarterly (March 2009) Brian Williams provided a discussion on the various arguments for and against the in a Lancet article suggested approach of treatment for prevention of HIV (1,2). As this topic continues to be the topic of – often heated – debate, another article is devoted to this issue, focusing on how feasible and realistic this approach is. Demographic and epidemiological models are routinely used to shed light on the potential of interventions for reaching a long-term victory in the struggle against HIV/AIDS. Considerable evidence points to the need to make treatment available as soon as possible after infection, both to prevent irreversible harm or unnecessary risk which accrues due to allowing unchecked viral infection, and also to reduce the 'infectious pressure' experienced by the uninfected population. Models and relevant data will be under intense scrutiny in the coming months and years, in efforts to better understand the tough choices funders and policy makers face in prioritising and advocating for the best mix of interventions.

Ultimately, all management of disease should focus on prevention as a way to eliminate illness and the burden of treatment. In the case of infectious diseases, the arguments are subtle and circular, but it is all about understanding and reducing incidence. This edition of the SACEMA Quarterly aims to clarify these issues as they relate to HIV and our region today.

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Reference list

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2. Williams BG. Universal Testing and Immediate ART. SACEMA Quarterly, issue March 2009.