

## **Editorial:** **Can we use antiretroviral therapy to curb or even eliminate the HIV pandemic?**

**John Hargrove - Director of SACEMA**

The first week of November saw SACEMA fully represented at two meetings in Geneva to decide how, if at all, antiretroviral therapy (ART) could be used as an offensive weapon against the HIV pandemic – rather than simply in its current defensive role of keeping alive people who have generally already reached late stages of infection. The meetings were prompted by the enormous interest generated through the publication of a recent mathematical model developed by Brian Williams, who has been closely involved with SACEMA, and published in the *Lancet* with colleagues from WHO (1,2). They argued that annual HIV testing, followed immediately by ART for all HIV positive people, could reduce global HIV incidence by 95 percent within a decade.

The first meeting, involving senior HIV workers from around the globe – in the fields of human rights, advocacy, administration and funding as well as scientific investigation – reaffirmed the urgent need for universal access to ART for the treatment of people living with HIV, emphasizing the clinical benefit of early treatment for individuals, as well as the preventive impact of increased access to ART in reducing HIV transmission and tuberculosis (TB) incidence (3).

The second meeting concerned itself with the particular problems associated with modelling the costs and effects of early treatment. There was robust debate in both meetings regarding the model, with interest centring on whether the advantages accruing from early treatment would possibly be overcome by a combination of behavioural compensation, drug resistance and a failure of long-term treatment compliance, coupled with uncertainty about the real reductions in HIV transmission due to ART. There were, further, strong concerns regarding the dangers of human rights violations associated with a move towards universal testing. A strong consensus nonetheless emerged that there was a need to investigate, in a careful step-wise manner, the possible advantages associated with the new intervention.

At least two cluster randomised control trials (RCTs) are currently being planned – with an emphasis on the need to carry out feasibility studies and pilot projects. What becomes clear from the time scale of this projected process, however, is that it is likely that the RCTs will be overtaken by events if, as seems likely, it becomes ever more evident that HIV infection is anyway associated with serious

health risks for the infected individual - even at very early stages of infection.

This matter was emphasised by a presentation of data from Zimbabwe showing that postpartum women with CD4 counts of greater than 650 cells/ $\mu$ L were six times more likely to die within 24 months than HIV negative women. If further work confirms this level of risk in wider sections of the population it will become ever less defensible to deny ART to any HIV positive person – regardless of the downstream population effects on HIV incidence. It thus becomes a matter of some urgency to carry out trials aimed at estimating the medical consequences of early initiation of ART for the individual, rather than the population. Such trials have the important advantage that the medical outcomes for individuals are very much easier to estimate quantitatively than the population effects. SACEMA staff are currently discussing how, when and where, such trials could be carried out.

Testing and treating people as early as possible will also have a substantial impact on TB and Brian Williams presented an extension of his earlier model to incorporate the impact on TB and presented this at the meeting on behalf of SACEMA.

Many international organizations and donors, including NIAID, PEPFAR, the Gates Foundation, the World Health Organization, the Global Fund, ANRS, the Wellcome Trust, UNAIDS, TAC and others were represented at the meeting.

This fourth issue of the SACEMA quarterly epidemiological update features an article on age-disparate relationships and the influence on condom use. We also share two historical perspectives from guest authors on occupational lung disease in South Africa and life expectancy. As usual, we also present a section on brief updates.

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### **Reference list**

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2. Williams BG. Universal Testing and Immediate ART. SACEMA Quarterly, issue March 2009. [[http://www.sacemaquarterly.com/index.php?page=detailview&p\\_id=3&d\\_id=18](http://www.sacemaquarterly.com/index.php?page=detailview&p_id=3&d_id=18)] Accessed May 19, 2009.
3. WHO. Antiretroviral therapy for HIV prevention. [<http://www.who.int/hiv/events/artprevention/en/index.html>] Accessed November 16, 2009.