

An exceptional year

As 2013 draws to a close, the world says goodbye to the man whose wisdom, forgiveness, and devotion to what was right gave rise to the South Africa we know today. The economic disparities between South Africa's many ethnic groups may still perturb, but no one could watch a performance by Johannesburg's Wits Choir and not give thanks to Nelson Mandela for nurturing a landscape in which these multitonal faces and voices could blend so naturally.

Mandela's commitment to equality and against stigma also set South Africa on the path towards addressing what, after apartheid, became its next human rights catastrophe: HIV/AIDS. Following soaring increases in prevalence throughout the 1990s, the epidemic slowed into the 21st century and reached a peak around 2005—the year in which Mandela announced publicly that his son had died of an HIV-related illness. South Africa now has the largest HIV treatment programme in the world, with an estimated 66% of eligible patients on treatment in 2011.

This figure could change, however, as a result of new guidelines released by WHO earlier in 2013. The guidelines recommend that all adults with HIV be started on antiretroviral treatment when their CD4 cell count drops to 500 per μL —a substantially higher threshold than the previously recommended 350 cells per μL . How should a government such as South Africa's respond? What is most cost-effective and has the most health benefits: to follow the guideline and increase the number of people on treatment as a result of the higher threshold; to continue to direct resources towards detection and follow-up of previously undiagnosed patients who may be more ill; or to expand some other programme?

Jeffrey Eaton and colleagues' Article in this month's issue provides some answers. The paper, a project of the HIV Modelling Consortium, compares these scenarios in four different country settings using 12 existing mathematical models of the HIV epidemic. The results are reassuring with respect to the ambitiousness of the guideline and extremely useful for countries weighing up different strategies for advancing their HIV treatment programmes. To take South Africa as an example of a country with a generalised epidemic and moderate antiretroviral coverage, the combination of outputs from the models suggest that expansion of antiretroviral

eligibility to 500 CD4 cells per μL would have a lower cost per disability-adjusted life-year (DALY) averted over 20 years than would expansion of testing and linkage to care. In settings with lower baseline antiretroviral treatment coverage, the opposite is likely to be the case.

Once they start treatment, patients need to be monitored to check for non-adherence and treatment failure, and to prevent further transmission. Monitoring can be achieved clinically, immunologically (by measuring CD4 count), or virologically (by measuring viral load). The new WHO guidelines recommend that governments move away from immunological monitoring and towards viral load monitoring for people on antiretroviral therapy. Yet the latter is expensive and largely unavailable at the point of care. Is this recommendation likely to be cost-effective and how should it be considered alongside the expanded eligibility guideline? In a further Article, again from the HIV Modelling Consortium, the answer is clear: viral load monitoring is the most effective of the three monitoring strategies, but also the most costly; it should be rolled out only after countries have reached high antiretroviral coverage at the new threshold of 500 CD4 cells per μL .

Botswana is one country that has achieved high antiretroviral coverage at the previous criterion of 350 CD4 cells per μL . An Article by Mansour Farahani and colleagues assesses the effects on mortality of this flagship programme—the first national HIV/AIDS treatment programme in Africa. The programme enrolled 140 patients in 2002, its first year, and by the end of 2012 included more than 200 000. That deaths in patients on the programme decrease from 12.8 per 100 person-years within the first 3 months to 1.16 per 100 person-years after 1 year is testament to the effectiveness of the programme. Nevertheless, more than 15 000 patients were lost to follow-up over the 9-year period studied, indicating a need to address the reasons why people leave this free-of-charge programme.

François Dabis states in a Comment, "2013 will be remembered as an exceptional year in shaping our strategy to control HIV/AIDS". It will be, and Nelson Mandela's legacy will be no small part of that.

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For the new WHO guidelines on the use of antiretroviral drugs for treating and preventing HIV infection see <http://www.who.int/hiv/topics/treatment/technical/en/>