

Effect of HIV prevention in key populations: evidence accumulates, time to implement



In *The Lancet Global Health*, Michael Pickles and colleagues¹ show how Avahan, a large-scale prevention programme in India targeting female sex workers and men who have sex with men, is estimated to have averted about 202 000 HIV infections in its first 4 years and 606 000 infections over 10 years. These estimates are higher than that from a previous assessment by Ng and colleagues,² which suggested that Avahan had prevented 100 200 infections in the first 5 years of implementation. These estimates can be challenged because of the levels of uncertainty related to the methods and assumptions used within the modelling. However, the central message of this study is that this large-scale, targeted HIV prevention programme has been effective. Hundreds of thousands of HIV infections were averted through a combination prevention package addressing risk and vulnerability, customised to the needs of the populations.

Much has been documented about Avahan and its achievements, but Pickles and colleagues' results are important for several reasons. First, the study reinforces the notion that HIV prevention for marginalised and stigmatised populations such as sex workers is not only feasible, but also works. Since the beginning of the epidemic in the late 1980s, high rates of HIV have been reported in sex workers and evidence for effective condom promotion and prevention strategies for HIV or sexually transmitted disease emerged.³⁻⁵ Data for the effect of large-scale prevention programmes for sex workers are still scarce, mainly because scale and coverage of programmes for sex workers is low worldwide. And where national programmes do exist, insufficient investment is made for monitoring and assessment to allow for estimations of effect. Avahan, one of the largest prevention programmes in the world, had the vision and the capacity to build in an assessment system from the start, based mainly on extensive monitoring of the implementation and uptake of the programme components.^{6,7} In addition to providing the wealth of assessment data produced by Avahan, the report by Pickles and colleagues is an invaluable contribution to the international HIV prevention knowledge base.

There is strong agreement that HIV prevention should focus on approaches that are evidence based, but there is disagreement about how to obtain such rigorous evidence and whether this should refer only to randomised study designs.⁸ Pickles and colleagues' report provides a concrete example of an effectiveness assessment of a large-scale programme that uses a non-randomised design. The investigators make a plausible and convincing case for the effectiveness of the programme with mathematical modelling and data from a series of population-based biobehavioural surveys. They also provide a valid alternative to experimental designs, which are often impossible or inappropriate for complex combination prevention programmes.^{8,9}

The report also presents a convincing case that classic prevention approaches, including peer-led outreach and behaviour change supported by community mobilisation, and some structural interventions to address stigma or violence, are feasible and effective in preventing HIV. The recent breakthroughs and excitement caused by antiretroviral-based prevention have overshadowed the fact that prevention basics for and by key populations can be highly effective. In southern India, Bradley and colleagues¹⁰ showed that the proportion of sex acts between female sex workers and their clients protected by condoms increased from 16–24% to 81–89% in 5 years, resulting in a decline in HIV and other sexually transmitted diseases in sex workers and in the general population. Condoms are the cheapest, simplest, safest, and most effective instruments to reduce sexual transmission of HIV, but their effectiveness at the population level is determined by adherence. New, promising antiretroviral-based prevention will have to be promoted in combination with condoms, and adherence support will be key. The data from Avahan remind us to bring behavioural approaches and condom promotion back to the centre of the debate for HIV prevention and programming.¹¹

Evidence-based prevention planning is also about understanding the HIV epidemic within a country, and providing services to the people at highest risk of acquiring and transmitting HIV. In most countries, key

Published Online
September 30, 2013
[http://dx.doi.org/10.1016/S2214-109X\(13\)70096-2](http://dx.doi.org/10.1016/S2214-109X(13)70096-2)

See [Articles](#) page e289

Copyright © Laga. Open Access
article distributed under the
terms of CC BY-NC-ND

populations such as female sex workers and men who have sex with men have a disproportionate share of the HIV burden, both in concentrated epidemics and generalised epidemics in sub-Saharan Africa.¹² In Kenya, for example, 33% of new infections are attributed to transmissions by these two populations. But, despite these data and the availability of effective approaches, the coverage of prevention programmes is highly inadequate. Worldwide, less than half of countries report to UNAIDS on prevention programmes for female sex workers and men who have sex with men, and the median coverage of programmes is 55%.¹² Whether the non-reporting countries still have no programmes or their programmes are too small in scale to be mentioned is unclear. There are many explanations for this inaction, including cultural or legal barriers, poor leadership and planning, and the fact that same-sex intercourse is highly stigmatised, even criminalised, in many parts of Africa.¹¹ But this implementation gap remains an unacceptable shortcoming of the worldwide response to HIV.

This report¹ should help to convince policy makers and programme managers worldwide to address this unfinished agenda of targeted HIV prevention. Investments in programmes for key populations and creation of a conducive environment for HIV prevention and human rights can make a great difference to the future course of the HIV epidemic. The evidence from India is overwhelming. The time for scaling up in the rest of the world is now.

Marie Laga

HIV-AIDS Centre and Department of Public Health, Institute of Tropical Medicine, Antwerp, Belgium
mlaga@itg.be

I declare that I have no conflicts of interest.

- 1 Pickles M, Boily M-C, Vickerman P, et al. Assessment of the population-level effectiveness of the Avahan HIV-prevention programme in South India: a preplanned, causal-pathway-based modeling analysis. *Lancet Glob Health* 2013; published online Sept 30. [http://dx.doi.org/10.1016/S2214-109X\(13\)70083-4](http://dx.doi.org/10.1016/S2214-109X(13)70083-4).
- 2 Ng M, Gakidou E, Levin-Rector A, Khera A, Murray CJ, Dandona L. Assessment of population-level effect of Avahan, an HIV-prevention initiative in India. *Lancet* 2011; **378**: 1643–52.
- 3 Ngugi EM, Simonsen N, Bosire AR, et al. Prevention of transmission of Human Immunodeficiency virus in Africa: effectiveness of condom promotion and health education among prostitutes. *Lancet* 1988; **332**: 887–890.
- 4 Laga M, Alary M, Nzila N, et al. Condom promotion, sexually transmitted diseases treatment, and declining incidence of HIV-1 infection in female Zairian sex workers. *Lancet* 1994; **344**: 246–48.
- 5 Shahmanesh M, Patel V, Mabey D, Cowan F. Effectiveness of interventions for the prevention of HIV and other sexually transmitted infections in female sex workers in resource poor setting: a systematic review. *Trop Med Int Health* 2008; **13**: 659–79.
- 6 Chandrasekaran P, Dallabetta G, Loo V, et al. Evaluation design for large scale HIV prevention programs: the case of AVAHAN, the India AIDS initiative. *AIDS* 2008; **22**: S1–S15.
- 7 Laga M, Vuylsteke B. Evaluating AVAHAN's design, implementation and impact : lessons learned for the HIV prevention community. *BMC Public Health* 2011; **11** (suppl 6): S16.
- 8 Laga M, Rugg D, Peersman G, Ainsworth M. Evaluating HIV prevention effectiveness: the perfect as the enemy of the good. *AIDS* 2012; **26**: 779–83.
- 9 UNAIDS. Strategic guidance for evaluating HIV prevention programmes, 2010. UNAIDS; Geneva. http://toolkits-mle.k4health.org/bouncer?t=http%3A%2F%2Fwww.unaids.org%2Fen%2Fmedia%2Funaids%2Fcontentassets%2Fdocuments%2Fdocument%2F2010%2F12_7_MERG_Guidance_Evaluating%2520HIV_PreventionProgrammes.pdf&nc=169 (accessed Sept 26, 2013).
- 10 Bradley J, Moses S, Blanchard JF, et al. Assessing reported condom use among female sex workers in southern India through examination of condom availability. *Sex Transm Infect* 2010; **86**: 44–48.
- 11 Laga M, Piot P. Prevention of sexual transmission of HIV: real results, science progressing, societies remaining behind. *AIDS* 2012; **26**: 1223–29.
- 12 UNAIDS. UNAIDS report on the global AIDS epidemic, 2012. UNAIDS; Geneva. http://www.unaids.org/globalreport/documents/20101123_GlobalReport_full_en.pdf (accessed Sept 26, 2013).