

those involved in neglected tropical diseases, and the private sector. After the review, the African Ministers of Health made the Yaoundé Declaration (panel).²

The declaration also welcomes the longstanding commitment of donors and NGOs to onchocerciasis control and the pledge of Merck to provide ivermectin for as long as is needed. It also urged donors and development partners to support macrofilaricide research and onchocerciasis surveillance.

The battle against onchocerciasis can only be won through a sustained effort and contribution from all parties involved. The Yaoundé meeting showed a renewal of the commitment from the African health ministers as well as the partners to take the effort in onchocerciasis control further. This momentum must be maintained.

**Uche Amazigo, Boakye Boatin*

WHO/African Programme for Onchocerciasis Control, Burkina Faso (UA); and Special Programme for Research and Training in Tropical Diseases, WHO, Geneva, Switzerland (DB)
amazigouv@oncho.oms.bf

We dedicate this Comment to three colleagues, Enyinnaya Uchechukwu from Nigeria, and Ruhiso Moshi and Kanyika Nakijwa from Tanzania, who tragically died in the ADC plane crash on Oct 29, 2006 in Abuja, Nigeria. They were on a mission to Kebbi State to assess the performance of the onchocerciasis control programme at community and frontline health-facilities. We thank WHO/African Regional Office Director Luis Gomes Sambo for his leadership, care, and support in facilitating the recovery and return of their bodies to their families.

We declare that we have no conflict of interest.

- 1 WHO. Success in Africa: the onchocerciasis control programme in West Africa 1974–2002. Geneva: World Health Organization, 2002.
- 2 World Health Organization/African Programme for Onchocerciasis Control. Report of the Partners' Meeting the Future of Onchocerciasis Control in Africa, Yaoundé, Cameroon, September 26–27, 2006. October, 2006: http://www.apoc.bf/docum/APOC%20Partners%20Meeting%20Report_%20Yaounde%202006.pdf (accessed Nov 17, 2006).
- 3 World Health Organization/African Programme for Onchocerciasis Control. African Programme for Onchocerciasis Control (APOC). Programme document for phase II (2002–2007) and phasing-out period (2008–2010). Oct 28, 2001: <http://www.apoc.bf/docum/APOC%20Programme%20document%20for%20Phase%20II%20and%20Phasing%20out.pdf> (accessed Nov 17, 2006).
- 4 Jamison DT, Breman JG, Measham AR, et al, eds. Disease control priorities in developing countries, 2nd edn. Oxford: Oxford University Press/World Bank, 2006.
- 5 World Health Organization/African Programme for Onchocerciasis Control. A strategic overview of the future of onchocerciasis control in Africa. August, 2006: <http://www.apoc.bf/docum/Final%20-%20Report%20of%20the%20Working%20Group%20-%20EN-new.pdf> (accessed Nov 17, 2006).

Confessions of a condom lover

My devotion to condoms spans nearly three decades. I have steadfastly helped my agency provide billions and helped develop new ones, including the female condom. I have bemoaned the condom gap in Africa,¹ and I believe condom promotion with sex workers (along with fewer clients) in concentrated epidemics has been the most important intervention in the entire HIV pandemic. But I see major limitations of condoms and abstinence in the intractable high-prevalence generalised hyperepidemics still raging in certain southern African countries.

First, many men (and some women) do not like using condoms. Use is especially low in established relationships. In Kenya in 2003, only 1–2% of married women used condoms for contraception.² Such low use in established relationships is troubling because concurrent regular sexual partnerships are critical in generalised epidemics, partly because the very high infectiousness of new infections allows for rapid transmission through continuing sexual networks.³ Second, condoms provide about 90% protection if used correctly and consistently,⁴ but use is typically inconsistent. In Rakai, Uganda, inconsistent use was almost four times as common as consistent use.⁵ Third, as with all prevention technologies, people might

believe that they can engage in risky sex with impunity so long as they use (or plan to use) condoms.⁶ Evidence from Uganda has shown that such condom disinhibition is real.⁷

Condoms are important for individual protection, especially for high-risk situations including discordant couples. Disappointingly, however, it is difficult to see much effect in generalised epidemics. In South Africa, for example, with 48 million people in 2004, public programmes provided 346 million condoms, and condom use at last sex was high, especially among single people aged 15–24 years (69%).⁸ Yet infection continues apparently unabated.

What of abstinence? One question is whether abstinence promotion can work, especially when young women may be coerced into sex. Nevertheless, young people do have enough agency to postpone sexual debut somewhat, as seen in Uganda and eastern Zimbabwe.^{9,10} But primary abstinence is only practicable for young people, and such narrow shifts in debut have only modest effect. Moreover, the gap between age at first sex and marriage is often narrow. For example, in Malawi, median age at first intercourse is 17.3 years for women and that at marriage is

See [Viewpoint](#) page 2028

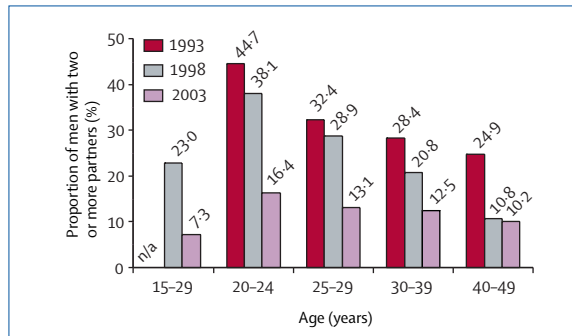


Figure: Proportion of men with two or more partners, Kenya, 1993–2003*
 *Last 6 months for 1993, last 12 months for 1998 and 2003. n/a=not available. 1993 and 1998 data have specific tabulations on sex partners provided to conform with 2003 data.

18-0.¹¹ Also, while adolescents are important, they are not the engine of transmission as often assumed. In South Africa, overall peak incidence occurs at age 25–34 years.⁸ In eastern Zimbabwe, women aged 20–29 years and men aged 20–39 years have the highest incidence.¹⁰

Ironically, while HIV prevention witnesses a relentless argument pitting condoms against abstinence, the key intervention for behavioural change is largely ignored—partner reduction. Earlier evidence from Uganda¹² is now bolstered by that from Kenya, where HIV incidence has been declining since the early-to-mid-1990s.¹³ Kenya had three successive Demographic and Health Surveys between 1993 and 2003.¹¹ Multiple partners among all men dropped substantially across the entire reproductive age range between 1993 and 2003 (figure; note that the change in survey question after 1993 from partners within 6 to 12 months would only underestimate the decline).¹¹ While these data are not proof, such a sea-change in behaviour would plausibly and decisively reverse the epidemic. Probably much of this behavioural change was spontaneously adopted and fear-based.

South Africa, conversely, has had no such reduction in HIV and no such decline in the number of partners as revealed in surveys in 2002 and 2005.^{8,14} While South Africa's context is different and the period of observation shorter than that in Kenya, a reasonable inference is that in generalised epidemics predominant reliance on vast numbers of condoms without a strong foundation of partner reduction fails to stem the epidemic.

Thus partner reduction is pivotal. Yet the idea of changing societal-level behaviour must daunt most medical professionals: they generally deal with people one-on-one, and sexual behaviour is deemed refractory

to change. The good news is that faced with the prospect of the feared AIDS, many individuals seem disposed to such behavioural change. Also, the public-health discipline has best practices in behaviour change to apply, such as promoting a sense of personalised risk and clear articulation of desired behaviour through various social channels, including political leadership. Programmes have thus far focused little on partner reduction, and few people recognise that multiple regular partners are particularly high risk.

Meanwhile, the other prevention methods can provide support. With a strong backdrop of partner limitation (and disinhibition kept to a minimum), condoms are a vital backstop for high-risk situations, including discordant couples. Abstinence efforts provide an opportunity to promote personal self-efficacy more broadly among young people, as well as fidelity and partner limitation once sexual activity commences. And secondary abstinence,¹⁵ or longer spacing between partners, can contribute. Counselling and testing should reinforce partner limitation and condom use, in combination with overall messages about prevention. Finally, the potential new technologies for HIV prevention, including male circumcision, vaccines, microbicides, and antiretrovirals, need a foundation of strong partner-limitation lest their protective effects be eroded by disinhibition.⁶

I truly love any effective instrument against AIDS. So an armistice in the polarised argument pitting condoms against abstinence is imperative, as is a strong focus on partner limitation, which should provide constructive common ground for those of any political stripe. Every year, many more people become infected than the cumulative number on antiretroviral treatment. Only prevention can reverse these generalised epidemics. We need a harmonised HIV prevention strategy that uses all valid approaches, where partner limitation takes centre stage.

James D Shelton

Bureau for Global Health, US Agency for International Development, Washington, DC 20523, USA
 JShelton@USAID.GOV

The views expressed are solely mine and not necessarily those of USAID. I declare that I have no conflict of interest.

- 1 Shelton JD, Johnston B. Condom gap in Africa: evidence from donor agencies and key informants. *BMJ* 2001; **323**: 139.
- 2 Central Bureau of Statistics, Ministry of Health Kenya, Kenya Medical Research Institute, Centers for Disease Control and Prevention Kenya, ORC

- Macro. Kenya demographic and health survey 2003. December, 2003; http://www.cbs.go.ke/downloads/pdf/Kenya_Demographic_and_Health_Survey_2003_Preliminary_Report.pdf (accessed Nov 27, 2006).
- 3 Halperin DT, Epstein H. Concurrent sexual partnerships help to explain Africa's high HIV prevalence: implications for prevention. *Lancet* 2004; **364**: 4–6.
 - 4 Hearst N, Chen S. Condom promotion for AIDS prevention in the developing world: is it working? *Stud Fam Plann* 2004; **35**: 37–47.
 - 5 Ahmed S, Lutalo T, Wawer M, et al. HIV incidence and sexually transmitted disease prevalence associated with condom use: a population study in Rakai, Uganda. *AIDS* 2001; **15**: 2171–79.
 - 6 Cassell MM, Halperin D, Shelton JD, Stanton D. Risk compensation: the Achilles heel of innovations in HIV prevention. *BMJ* 2006; **332**: 605–07.
 - 7 Kajubi P, Kanya MR, Kanya S, Chen S, McFarland W, Hearst N. Increasing condom use without reducing HIV risk: results of a controlled community trial in Uganda. *J Acquir Immune Defic Syndr* 2005; **40**: 77–82.
 - 8 Shisana O, Rehle T, Simbayi LC, et al. South African national prevalence, HIV incidence, behaviour and communication survey, 2005. Cape Town: HSRC Press, 2005.
 - 9 Kirungi WL, Musinguzi J, Madraa E, et al. Trends in antenatal HIV prevalence in urban Uganda associated with uptake of preventive sexual behavior. *Sex Transm Infect* 2006; **82** (suppl 1): i36–41.
 - 10 Gregson S, Garnett GP, Nyamukapa CA, et al. HIV decline associated with behavior change in eastern Zimbabwe. *Science* 2006; **311**: 664–66.
 - 11 Demographic and Health Surveys. <http://www.measuredhs.com> (accessed Nov 7, 2006).
 - 12 Stoneburner R, Low-Beer D. Population-level HIV declines and behavioral risk avoidance behavior in Uganda. *Science* 2004; **304**: 714–18.
 - 13 Shelton JD, Halperin DT, Wilson D. Has global HIV incidence peaked? *Lancet* 2006; **367**: 1120–22.
 - 14 Shisana O, Simbayi L. Nelson Mandela/HSRC study of HIV/AIDS. South African national HIV prevalence behavioural risks and mass media household survey 2002. Capetown: HSRC Publishers, 2002.
 - 15 Underwood C, Hachonda H, Serlemitsos E, Bharath-Kumar U. Reducing the risk of HIV transmission among adolescents in Zambia: psychological and behavioral correlates of viewing a risk-reduction media campaign. *J Adolesc Health* 2006; **38**: 55.

A new discipline is born: comparative health-systems studies

Despite high-level global commitments to human development, progress on health goals has been painfully slow. Worse still, important threats to human security and the environment remain, and there are even reversals—eg, the worsening child mortality rates in many African countries.¹

Part of the difficulty is that there is a gap between what we know and what we do. Too often, science and evidence are marginalised from mainstream health-policy debates. This predicament was one motivation behind the Mexico Statement,² a declaration of commitment by member states of WHO to strengthen their health systems by using knowledge for better health.^{3,4} In 2005, the World Health Assembly called on governments “to establish sustainable programmes to support evidence-based public health and healthcare delivery systems, and evidence-based health related policies”. WHO is working to translate the ideas in this statement into practicable country networks connecting research to policy.⁵

An important underlying premise of this work is that science—and the academic community more broadly—is a neglected force in policymaking. The Mexican health reforms, which *The Lancet* has highlighted in a six-part series of papers that concludes this week, have been a global laboratory to study how one country can use knowledge and evidence to improve not only decision making but also the lives and futures of its citizens.^{6–9} *The Lancet* has published this work to show the global value of projecting a new and stronger voice for country experiences in the increasingly complex international architecture of health.

Our hopes are admittedly fragile. Health-policy and health-systems research have an image problem.¹⁰ They seem too abstract to have any direct meaning to the health of individuals. Answers to policy and systems questions are often uncertain and messy. Generalisation of country experiences to other settings might be difficult. Yet this series of papers does yield several lessons of critical global importance.

First, for any health-reform process to succeed, a country must have reliable information systems in place, effective and robust institutions, and proven interventions at individual and societal levels. Second, reforms must be started within a strong ethical framework (in Mexico's case, health equity), together with a commitment to transparent evaluation. Third, progressive improvements in health can only be accelerated if health is seen as an entitlement—an outcome that a government has an obligation to strive for as part of its democratic mandate to fair governance and equal opportunity. Legislation can help to fix that entitlement in the national psyche. Fourth, there must be a sustained commitment to engaging civil society in a dialogue to build solidarity, motivation, and advocacy for reform. Change will not be successful if imposed by government alone; it has to be co-led by grassroots demand. The outcomes of reform have to be accountable to that same civil society. Finally, it is vital that politicians understand and integrate public-health principles of generating and applying evidence in policy development. A high level of technical competence is highly desirable for ministers and their political staff, or else they risk

See [Series](#) page 2017