

CORRESPONDENCE

e-mail submissions to correspondence@lancet.com

HIV/AIDS prevention and treatment

Sir—Elliot Marseille and colleagues (May 25, p 1851),¹ used cost-effectiveness analysis to provide a simplistic and outdated proposition that prevention of HIV/AIDS should take priority over and be funded to the exclusion of treatment in Africa.

Prevention is almost always cheaper than care, irrespective of a country's development status, especially if therapeutic options are dominated by patented drugs. Prevention is also effective, thus UNAIDS and its cosponsors advocate prevention as the foundation for all HIV/AIDS programmes. Prevention and treatment have overlapping but not identical goals. A comparison based on only one metric can be instructive but seldom conclusive. No nation's health policy strictly enforces trade offs between prevention and care. By taking so narrow a view and in view of the fact that Africa has around 28 million infected people, Marseille and colleagues fundamentally mis-state the problem.

Historically, at more than US\$10 000 per patient-year, treatment was clearly unaffordable. As prices plummet and resources increase, implementation capacity will rapidly replace finances as the limiting constraint. Prevention efforts undoubtedly need to be scaled up substantially. Expansion of capacity for both prevention and care needs time and incremental increases in finances. Such efforts are not simply additive, since every strategy improves the effect of the other. Prevention and care involve different sectors and constituencies, investment in both simultaneously can achieve more than would be accomplished by separate investment.

Highly active antiretroviral treatment (HAART) grants extra years of quality life, which goes beyond price and generates vast collateral benefits, including saving the health system several hundred dollars per patient-year in averted palliative and opportunistic-infection care. At a prevalence of 5%, demand for medical care is estimated to increase faster than the public sector's capacity to cope. In many African countries, health sectors are already overwhelmed by AIDS in patients and staff. HAART could save lives, money, and the health systems themselves. In

Namibia, the output per person is estimated to rise to higher than the per-person taxes needed to fund treatment programmes.²

Treatment also has substantial positive effects on national development.³ AIDS destroys adults as workers, parents, and care givers in the prime of their lives. Treatment saves children from orphanhood; keeps households, social cohesion, and businesses intact; improves returns on social investments, such as education and development; increases growth and security; and keeps to a minimum exacerbation of poverty. As Marseille and colleagues rightly note, HIV has moved beyond public health and has become a social, economic, and security concern, without appreciating that the time scale of the larger concerns is distinct from that in which prevention operates. Prevention can help to avert such threats in the indeterminate future. However, people, societies, economies, and nations are at risk now because of the potential of millions of premature deaths of those already infected. Only treatment can change that trajectory. Countries with the greatest infection rates are at disproportionate risk, making treatment there even more urgent.

The economic justification for HAART is its leverage effect on HIV prevention and its potential to secure the future against disabling social and economic ills. Prioritisation is not an issue of lives today over lives tomorrow; the quality of the future depends crucially on the quality of life today.

Marseille and colleagues and Andrew Creese and colleagues (May 25, p 1635)⁴ offer static perspectives. Prices and resources are not fixed, especially now. The commitments made by African nations and all UN Member States mark unprecedented political momentum.⁵ The epidemic has thrived on inability to anticipate dynamic effects. Epidemiologically, how quickly and far HIV could spread was not foreseen; economically, policy decisions have frequently been based on prices that are probably obsolete before the policies can be implemented. The cost ratio of care to prevention may currently be 28 to 1. 2 years ago it was more than 200 to 1. In 2 years time it will probably be far lower than it is today. The price

today is less relevant than the expected total cost, which will decline with time.

Finally, there is no arbitrary threshold at which treatment becomes of value. The decision to treat, cannot be based only on narrow variables of cost-effective analyses but must involve humanitarian considerations; and evolve as factors, not least, prices and capacity change. Moreover, expanding treatment now may accelerate cost reductions by stimulation of greater supply and competition, and identification of cheaper administration mechanisms in resource-limited settings.

*Peter Piot, Debwork Zewdie, Tomris Türmen

*Joint United Nations Programme on HIV/AIDS (UNAIDS), 20 Avenue Appias, CH-1211 Geneva 27, Switzerland; and Global HIV/AIDS Office of the World Bank; and Family and Community Health, WHO (e-mail: rasheedf@unaids.org)

- 1 Marseille E, Hoffman PB, Kahn JG. HIV prevention before HAART in sub-Saharan Africa. *Lancet* 2002; **359**: 1851–56.
- 2 Sanderson WC, Fuller B, Hellmuth ME, et al. Namibia's future: Modeling population and sustainable development challenges in the era of HIV/AIDS. Laxenburg, Austria: International Institute for Applied Systems Analysis, 2001.
- 3 Bonnel P. Economic analysis of HIV/AIDS. ADF background paper. <http://www.unaids.org/publications/document/economics/index.html#cost> (accessed June 14, 2002).
- 4 Creese A, Floyd K, Alban A, et al. Cost-effectiveness of HIV/AIDS interventions in Africa: a systematic review of the evidence. *Lancet* 2002; **359**: 1635–42.
- 5 United Nations General Assembly Special Session on HIV/AIDS. June 2001. New York, USA.

Sir—Andrew Creese and colleagues¹ and Elliot Marseille and colleagues² argue that treatment of AIDS is not cost effective in some African settings. Their conclusions reflect a depressing backslide in the fight against the world's most disastrous pandemic.

The vast needs and limited resources in developing countries, where tens of millions are infected, have led to endless debate but little action. The international community has finally responded to a pandemic that alerts the world to the threats of emerging and recrudescing infectious diseases in an increasingly polarised world. There is now widespread recognition that it is a strategic and a moral imperative to

make simple, effective, and affordable treatment available to as many people as possible.

Richard Horton³ notes the need to provide treatment for HIV/AIDS, and support such policies as the Doha Declaration, which affirms countries' rights to put their people's health before the market monopolies of pharmaceutical companies. Intense opposition to pharmaceutical monopolies and increased market competition between brand and generic drugs have led to a fall in the yearly cost of triple therapy from US\$15 000 to less than \$300; WHO has sourced quality manufacturers of affordable antiretrovirals, and these drugs have finally been included in the Essential Drugs List.

But now, on the basis of flimsy economic data,¹ WHO seems to recommend letting millions die without effective treatment. WHO is not an academic institution; it is a UN agency of substantial influence. Its mandate is health for all, and its job is to provide sound policy recommendations to save and improve lives. Rather than accepting the price of drugs as immutable, WHO should be putting more energy into working with UNAIDS to bring the price of antiretrovirals within reach, calling for more funding and contesting those worldwide forces that keep billions of people in perpetual poverty.

Treatment and prevention are inextricably linked; offering treatment strengthens prevention measures, and prevention is less effective without treatment. Cost-effectiveness alone is a misguided way to justify one over the other. Social and economic benefits are vast: children saved from being orphaned, and longer life means people can contribute to society.⁴

Cost-effectiveness analyses represent a narrow viewpoint from which relevant stakeholders are entirely excluded. Such analyses have never been an exclusive prescription for health-care choices in the developed world, and to advise the less-developed world to use them as such is iniquitous. If they were applied consistently to all medical disorders, they would have been applied to the measures that could be taken to prevent 75% of preventable cardiovascular deaths in the world.⁵ Narrow cost-effectiveness analyses of AIDS treatment in developing countries promote a medical ethic that would never be considered in the developed world, allowing people to die when drugs are available that can save them. Prevention improves public health, but cannot replace treatment of preventable diseases.

How are doctors in Africa to tell their patients they cannot treat them because

it is not cost effective? We should be doing everything we can to prevent disease in the future while providing effective treatment for those who suffer today.

Eric Goemaere, *Nathan Ford,
Solomon R Benatar

Médecins Sans Frontières, Cape Town, South Africa; *Médecins Sans Frontières, London EC1R 5DJ, UK; and Centre for Bioethics, University of Cape Town, South Africa
(e-mail: Nathan_FORD@msf.org)

- 1 Creese A, Floyd K, Alban A, et al. Cost-effectiveness of HIV/AIDS interventions in Africa: a systematic review of the evidence. *Lancet* 2002; **359**: 1635–42.
- 2 Marseille E, Hofmann P, Kahn J. HIV prevention before HAART in sub-Saharan Africa. *Lancet* 2002; **359**: 1851–56.
- 3 Horton R. The health (and wealth) of nations. *Lancet* 2002; **359**: 993–94.
- 4 Macroeconomics and health: investing in health for economic development—report of the Commission on Macroeconomics and Health. Geneva: WHO, 2001.
- 5 Beaglehole R. Global cardiovascular disease prevention: time to get serious. *Lancet* 2001; **358**: 661.

Sir—Elliot Marseille and colleagues¹ make the case that antiretroviral treatment should not, in the near future, be implemented in the developing world since prevention is at least 28 times more cost effective than HAART. I agree with their assessment of the relative costs of these two interventions, but disagree with their conclusions.

In a strict comparison of cost-effectiveness, drugs will always be more expensive than condoms. However, data from cost-effectiveness studies have many limitations and are highly susceptible to bias and narrow and selective interpretation.² Marseille and colleagues' conclusions need to be reassessed, and their data need to be put into a larger socioeconomic context before they are used to guide public policy on HIV/AIDS.

For instance, what is the cost of not treating HIV infection in the countries of sub-Saharan Africa, where tens of millions of people with HIV/AIDS now reside? What will be the effect on: the stability of businesses, communities, and families; countries' gross economic products; degree of poverty; educational opportunities; food, security, and other indicators?

To make sweeping recommendations, as do Marseille and colleagues, without integration of these other kinds of effects and costs into a decision-making calculus does not advance evidence-based, rational approaches to worldwide public health.

Gregg Gonsalves

Gay Men's Health Crisis, 119 West 24th Street, New York, NY 10011, USA
(e-mail: greggg@gmhc.org)

- 1 Marseille E, Hofmann P, Kahn J. HIV prevention before HAART in sub-Saharan Africa. *Lancet* 2002; **359**: 1851–56.
- 2 Hill SR, Mitchell AS, Henry DA. Problems with the interpretation of pharmacoeconomic analyses. *JAMA* 2000; **283**: 2116–21.

Authors' reply

Sir—Your correspondents all draw attention to important concerns in the allocation of funds between HIV prevention and HAART. We explicitly addressed in our report many of these issues, such as possible future reductions in the costs of antiretroviral drugs, synergies between prevention and treatment, and the collateral benefits of HAART.

The technical criticisms are not relevant when considered in the context of our methods. For example, inclusion of saved medical care costs in estimation of the benefits of HAART is often desirable, but the estimates for the cost-effectiveness of prevention that we cite are also mainly unadjusted for averted costs of medical care. Inclusion of these averted costs would further enhance the advantage of prevention. On balance, our estimate that prevention saves 28 times as many years of life as HAART per dollar spent remains defensible, and is probably an underestimate. Rather than a static number, we recognise that the exact ratio will depend on many biological, behavioural, infrastructural, and economic factors that will vary by setting and over time.

All your correspondents point out that any projection of the consequences of favouring public financing of prevention versus HAART needs to account for the large social and economic dynamics in which the epidemic operates. This is an important area of inquiry. Specific findings will vary substantially by country. In general, we believe that after 6–8 years in a country unable to finance both adequate prevention and treatment, a strong-treatment approach would mean not only more people being treated but also more symptomatic individuals remaining untreated than would a strong-prevention approach. This is because with inadequate prevention, the need for treatment further outpaces the financial and infrastructural capacity to deliver it. This conclusion, and indeed most of our arguments, depends crucially on the premise that on the time scale that matters, the prevention/HAART-funding trade-off is real—ie, more for one really does mean less for the other.

We would also like to clarify our major conclusions. First, investing most of the funds in prevention is the most effective