



Tackling India's HIV epidemic: lessons from Africa

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from debt relief programmes directly to schools to increase enrolment and minimise transaction costs. Moreover, it would be cost effective to direct funds from the newly established Global Fund to Fight AIDS, Tuberculosis, and Malaria to maternal and infant healthcare programmes and to education. Young children without both parents should be given the highest priority. If children are cared for by their adolescent siblings, then such adolescents should be the first to qualify for vocational training. In the absence of a cure for AIDS, international agencies have an important role in providing technical advice as well as funds for maintaining the current levels of economic activity in sub-Saharan African countries.

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Tackling India's HIV epidemic: lessons from Africa

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India stands on the brink of a major HIV epidemic. However, by examining where public health initiatives went wrong in Africa, the international community may be able to help India avoid the devastating effects seen in Africa

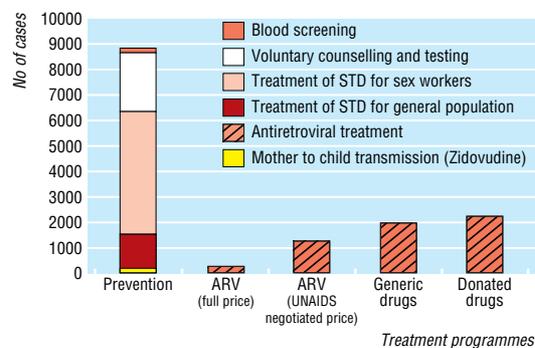
The rapid spread of HIV in sub-Saharan Africa is one of the greatest failures in the history of public health. Given our detailed understanding of HIV and the natural course of AIDS, the virus should have been controllable. Yet in some African countries 20% of people aged over 15 are HIV positive and 70% of them will eventually die from AIDS.¹ India shares some of the same risk factors as Africa, including a similar pattern of health expenditure, an uneven health infrastructure, and prevalent high risk sexual behaviours (table A, bmj.com).² By 2010 the number of HIV infections in India is predicted to rise from 4 million to 20-25 million¹⁻³ We discuss 10 important lessons from Africa that could limit the spread of HIV in India.

Methods

The views expressed in this paper are based on current literature reviews, economic analyses of the Berkeley International Group (<http://big.berkeley.edu>), and extensive personal experience working on HIV, reproductive health, programme management, and international finance.

Involve high risk groups in all phases of programmes

HIV infection begins in the core groups of commercial sex workers, intravenous drug users, and men who have sex with men (table B, bmj.com). Mathematical models show both the benefits of early intervention and the



Number of cases of HIV infection that could be averted with \$2m AIDS budget spent on preventive measures or antiretroviral drugs (ARV) from different sources⁵

See also editorial by Ammann

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Further tables and figures giving HIV statistics are available on bmj.com

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importance of focusing on these core groups.⁴⁻⁷ India remains a traditional society: its laws forbidding homosexuality derive from British legislation in the 19th century,⁸ and the sex industry relies on bribing the police to operate. The high risk groups are outside the political, social, and economic mainstream. Leaders must overcome prejudice and be prepared to include these groups in designing well funded programmes.

Focus on cost effective preventive programmes

Poverty is a major contributor to the spread of HIV and thus considered an important focus for preventive programmes. However, the prevalence of HIV can double within high risk groups in six months and in the general population in three to five years, while socio-economic change takes decades to achieve. Moreover, poverty does not always drive the spread of HIV. Botswana is relatively wealthy and over 90% of women are educated, but it has a high prevalence of HIV. As long as the AIDS community highlights poverty, it allows senior political leaders to claim that only socio-economic change will cure the disease and to avoid controversial interventions, such as distributing condoms to unmarried people.

The most appropriate immediate strategy for India is a targeted approach in core groups. Its cost effectiveness is well established.⁵⁻⁹⁻¹⁰ Substantial numbers of cases can be averted by management of sexually transmitted diseases in commercial sex workers, blood screening, voluntary counselling and testing, treatment of sexually transmitted diseases in the general population, and providing antiretroviral drugs at childbirth (figure, table).⁵ The cost of treating one person with antiretroviral drugs for a year (at full price) is equivalent to that of preventing almost 50 cases (figure).⁵

Secure adequate supplies of condoms and antibiotics

In sub-Saharan Africa, too little attention was given to the supply of condoms. In 2000, fewer than 650 million condoms were distributed (about four for each adult man).¹¹⁻¹² The United Nations Population Fund estimates that at least \$1bn (£626m, €881m) is needed for condoms to control AIDS, and the gap between demand and supplies is growing.¹³ If we assume that people will spend up to 1% of their income on buying condoms, 95% of India's population cannot afford the \$10.65 a year needed for manufacture, promotion, and distribution of condoms.¹⁴

India has the advantage of a large, competitive, technically competent pharmaceutical industry, and the gov-

ernment is subsidising distribution of condoms to low income families. This subsidy should be extended to antibiotics for controlling sexually transmitted diseases. The international donor community should ensure that priority is given to funding condoms and antibiotics before funding other programmes.

Invest only in projects that can be fully implemented

Africa is awash with pilot projects, yet no donor agency or national government has set up a systematic programme of basic interventions for all sex workers in every large city. Since most possible interventions have already been tested more than once, the need for additional small scale studies is questionable. Larger scale, relatively simple programmes that provide basic services to all should be given priority over sophisticated, labour intensive programmes covering a few people. The available resources should be allocated equally across all the sites that need intervention. The sophistication of programmes should be determined by the amount of money available for each site. Although the amount might be relatively small, the programmes could still have a big impact.

Pilot studies of interventions should not be funded if the resources are not available to implement the intervention nationwide, however promising it may seem in theory. The worst case scenario would be one where India's many non-governmental organisations divide the limited resources to create carefully crafted, custom built programmes and end up having no overall impact on the disease.

Include traditional health practitioners in control programmes

In areas where the epidemic has spread beyond the initial high risk groups, programmes providing interventions for the general population are essential.¹⁵ Rural medical practitioners, nurses, Western trained doctors, and other health professionals will have to be included. Many African countries have resisted the non-medical prescription of antibiotics. In India, rural medical practitioners often have a formal training in Ayurvedic or other traditional medicine but are not formally permitted to prescribe antibiotics. It is essential to recognise the role of India's private sector, which provides care for most rural poor people (see bmj.com), and realign prescription regulations to reflect reality.

Reconsider the structure and work of international donors

The Global Fund for AIDS, Tuberculosis, and Malaria now controls most of the funding for tackling HIV and AIDS. However, the \$2-3bn available amounts to less than one quarter of the annual projected needs for controlling AIDS.¹⁶

Underspending of donated funds is common and helps curtail the resources available and deter future allocations from the donor. Implementing agencies spend a great deal of time preparing proposals; donors require time to analyse unsolicited proposals, to prepare, and to review requests for proposals. A more cost effec-

Cost per life year saved by HIV prevention programmes

Programme	Cost/life year saved (\$)
Blood screening	3.35
Management of STDs for sex workers	3.95
Voluntary counselling and testing	22.03
Treatment of STDs for general population	22.32
Prevention of mother to child transmission:	
Zidovudine	213.66
Nevirapine	11.24

STD=sexually transmitted disease.

tive strategy would be for governmental and foundation donors to set achievable output goals, specify how much money they wish to allot to this particular area, and then invite evidenced based proposals from possible implementing agencies. This would draw on the rich experience of agencies in both developing and developed countries, simplify the work of donors, and pre-empt the second guessing of the donor's goals. Support for output based services should ensure that money follows results and increase the efficiency of both non-governmental and governmental programmes.

Large international meetings waste resources

Large meetings cost a great deal in airfares and living and opportunity costs. The communication of ideas and initiation of new collaborations at such meetings has fallen over the years, and the meetings have become platforms for non-evidence based lobbying.¹⁰ Meetings that deal with specific topics and focus on science are likely to remain useful.

Confront lobbying for increased use of antiretroviral drugs

Infected people in rich countries who benefit from antiretroviral drugs form a compelling lobby for extending treatment elsewhere. However, individuals at risk of infection do not lobby for investment in prevention of HIV and AIDS. When prevention programmes succeed, it is impossible to say that any one person is alive because of them.¹⁰ Any objective effort to allocate the limited resources available to confront the HIV epidemic in India will have to take these asymmetries in lobbying into account.

One emerging lesson is that money spent on antiretroviral drugs is money removed from prevention, and vice versa. The Global Fund for AIDS, Tuberculosis, and Malaria has allocated 60% of its first \$378m of grants to support HIV projects, and 21 of 28 countries receiving grants will use this money to purchase antiretroviral drugs.¹⁷ These drugs are difficult to use (except to prevent mother to child transmission) and, even at the greatly reduced prices, are very expensive, especially when the necessary testing, monitoring, and counselling costs are included (figure). In extreme cases they may even encourage increased rates of unsafe sexual behaviour.¹⁸

Even if there are further massive reductions in drug prices, the costs will remain beyond the reach of individual and community subsidy in much of India. Nevertheless, there will be intense emotional pressure to mount token subsidised antiretroviral programmes. The people who benefit will probably be those who are most educated or have access to specialist care. The example of Thailand, where an increase in antiretroviral drug costs took money away from prevention budgets and was associated with an increase in HIV infections, must shore up our commitment to prevention.¹⁹

Ensure policies are based on latest evidence

In hindsight, the investment Africa made in safeguarding the blood supply rather than focusing on high risk



Commercial sex workers in India

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groups was probably over enthusiastic. In the 1980s, the scientific evidence that other sexually transmitted diseases facilitate the transmission of HIV was not acted on quickly enough. Evidence is coming out of Uganda that sexual abstinence and reduction in the number of sexual partners can help reduce prevalence of HIV.²⁰ Religions such as Islam, Christianity, and Hinduism emphasise certain aspects of sexual abstinence and reproductive health. Religious organisations could therefore be used to help prevention alongside programmes to distribute condoms and treat sexually transmitted disease.

Attention needs to be given to the increasingly strong evidence that male circumcision slows transmission of HIV. In a recent study in Uganda, 30% of uncircumcised men became infected from their HIV positive female partners compared with none of the circumcised men.²¹ Finding ways to offer circumcision to Hindu men (who are generally not circumcised) could slow transmission of HIV and other sexually transmitted diseases.^{21 22}

Despite its devastating effect, HIV is a fragile, difficult to transmit, and easily destroyed virus. A microbicide that women can use secretly and effectively to protect themselves against HIV infection would be valuable.²³ Western managers estimate that development of a 60% effective microbicide would cost \$775m. Although this is achievable, the microbicide would not reach the market before 2007 at the earliest, which will be too late to contain the spread of HIV in India. A concerted effort should be made to use these resources in ethical research frameworks that fit the enormous risk of death in developing countries. The suggestion that lemon juice may be an effective microbicide should also be investigated.²⁴ Decisions about which programmes to implement should be based on cost effectiveness. Comparable and rigorously collected data are needed on implementation costs and on consumers' willingness to pay for prevention and therapy.

Increase national and global budgets now

Government investment in AIDS prevention in all countries has been a story of too little too late. Large investments at the outset of the epidemic will slow progress more than those at a later stage. India

Summary points

The number of cases of AIDS in India will probably exceed 20 million by 2010.

The limited resources should be used for large cost effective programmes to decrease spread of the disease

Money spent now will be much more effective than money spent later in the epidemic

Adequate supplies of condoms and antibiotics must be secured

Prevention should be given priority over antiretroviral treatment

currently invests R300 crore (£43.5m) annually, much less than needed.¹⁶ This simple lesson in epidemiology needs to be understood by external donors, the Indian government, and foundations. The Macroeconomic Commission on Health urges a large increase in donor funds to confront AIDS and other important diseases. Such increases are both justified and achievable, given the size of the world economy.²⁵

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