Health care systems in transition III.
India, Part II.
The current status of HIV–AIDS in India

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Introduction

The human immunodeficiency virus (HIV) continues to spread around the world, into communities previously little troubled by the epidemic, while also strengthening its grip on areas where acquired immunodeficiency syndrome (AIDS) has become the leading cause of death in adults. In addition, the HIV pandemic has become concentrated in the developing world, mostly in countries least able to afford to care for HIV-infected people.1 In India, the HIV–AIDS epidemic is now more than 13 years old. Within this short period, it has emerged as one of the most serious public health problems in the country.

The first cases of HIV–AIDS in India were reported amongst commercial sex workers in Mumbai and Chennai and injecting drug users (IDUs) in the northeastern states of India.2 The epidemic has spread rapidly in the areas adjoining these epicentres. By 1997, Maharashtra,3 Tamil Nadu and Manipur together accounted for over three-quarters of AIDS cases and over two-thirds of HIV infections in India, with Maharashtra reporting almost half the number of cases in the country.4

Even though the officially reported numbers of cases of HIV infections and AIDS cases are only in the thousands, it is acknowledged that a wide gap exists between the reported and actual cases.5 The reported cases represent the tip of the iceberg, partly because it is not compulsory to report HIV cases either to the National AIDS Control Organization (NACO) or to state health officials.

One conservative estimate6 of the HIV-infected population in India indicates that 1.5 per cent of the 1 billion Indian population, or 11.5 million individuals in 1997,7 are already infected with HIV, which makes India the country with the largest number of HIV-infected people in the world. Recent testing of pregnant women in Pondicherry has shown infection rates of around 4 per cent.8 Amongst truck drivers in the southern states of Madras, HIV prevalence quadrupled from 1.5 per cent in 1995 to 6.2 per cent in 1996. In the northeastern states of Manipur and Nagaland, the major route of transmission of HIV is through needle sharing among IDUs. Here, heroin is smuggled into India from the opium-cultivating regions of Thailand, Laos and Myanmar. This area contains populations who share languages and culture, and who can move freely across international borders. Among the estimated 15 000 IDUs in Manipur, the seroprevalence of HIV increased from zero to 50 per cent within 6 months during 1989–1990. HIV has now also spread to the general population from the IDUs and 1 per cent of antenatal mothers were found to be HIV seropositive in 1991.9

The nationwide sentinel surveillance data collected in February–March 1998 confirmed that HIV infection is now prevalent in all parts of the country and has spread from urban to rural populations and from individuals involved with high-risk behaviour to the general population. In Mumbai, 2–4 per cent of pregnant women have tested positive for HIV in public hospitals.7 The women at greatest risk are commercial sex workers and sexual partners of men involved with high-risk behaviour. Indeed, in most prenatal clinics in India, the HIV-infected woman’s major risk factor is having had sex with her husband. Studies indicate that more and more women attending antenatal clinics are testing HIV positive, thereby increasing the risk of perinatal transmission.

Transmission of HIV in India

The rapid spread of the epidemic across the country has been attributed to labour migration and mobility of people in search of employment from areas with limited employment opportunities to areas where job prospects are better, low literacy levels leading to low awareness amongst the potential risk groups, gender disparities in economic power, and the presence of other sexually transmitted infections and reproductive tract infection amongst men and women. About 80 per cent of transmission occurs through sexual activity, predominantly heterosexual but also homosexual activity, 8 per cent through blood transfusions with infected blood, 8 per cent through injecting drug use and the route for the remaining 4 per cent is unknown.5,10

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90 per cent of the reported cases are occurring in sexually active individuals, most of whom fall within the economically productive age group of 15–45 years. One in every three cases reported is a woman.

Subtype C is the major HIV-1 strain in India, whereas studies in Mumbai show that HIV-2 makes up about 10 per cent of cases and co-infection with both HIV-1 and -2 occurs in another 10 per cent of cases. The appearance of HIV-2 is not limited to Bombay. Although HIV-2 was first described in India in 1991, in a later study from Goa, three of nine HIV seropositive sera from the 61 blood samples tested were found to be positive for HIV-2 as well. HIV-2 has also been detected in the sera of a blood donor and a female prostitute from the southeastern Indian port cities of Madras and Visakhapatnam.

The most closely related sequence to the HIV-1 sequences from Bombay is from a strain isolated in South Africa: HIV-1 NOF. As Indians form a major part of the South African population, this may be the source of HIV-1 subtype C viruses. The HIV-2 sequences found in Bombay and Goa belong to the major subtype of HIV-2, subtype A, and are related to the prototype HIV-2 ROD. Portuguese colonial connections between Goa, Angola and Bissau may have contributed to the introduction of HIV-2 into India.

Another study reported the predominance of HIV-1 subtype C among these patients. However, a subtype A sequence has also been isolated from an individual who had lived in Uganda, and subtype B sequences are present in Hyderabad, a city in south-central India. In addition, preliminary data seem to indicate the presence of HIV-1 subtypes A, B, C and E in Vellore in southern India. Unfortunately, no sequence data are available so far from the HIV variants infecting IDU populations in northeast India. However, they are probably related to the subtypes seen in Thai IDUs. Thus, HIV in India has multiple origins; one subtype of HIV-2 and several subtypes of HIV-1 have been introduced into the country, although HIV-1 subtype C and HIV-2 subtype A are the most prevalent in the heterosexual cohorts analysed so far.

**HIV treatment and care**

In India, the social stigma attached to having a sexually transmitted infection applies even more so to HIV–AIDS. AIDS patients have been refused admission to hospitals and nursing homes, both government and private, thereby compounding their disadvantage. If admitted, HIV-infected patients are often isolated in the wards, generating fear and anxiety amongst other patients and themselves. In the workplace, instances of discrimination have been recorded, leading in some occasions to loss of employment. The active part played by some non-governmental organizations (NGOs) in initiating public interest litigation in such cases of discrimination, coupled with judicial pronouncements by the courts in support of the right of such employees, has helped partly to protect HIV-infected workers from the worst forms of discrimination. However, so far, there have been no legal changes to protect the human rights of HIV positive individuals. Similarly, there are no guidelines applying to the life insurance or health insurance markets to protect the interests of HIV positive individuals.

Large proportions of symptomatic HIV positive individuals develop tuberculosis (TB) and the national TB control programme has been significantly affected by the HIV–AIDS epidemic. With the high prevalence of HIV–AIDS in India, the problem of HIV–TB co-infection poses a major challenge. Nearly 60 per cent of reported AIDS cases have a past or present history of tuberculous disease. Treatment of TB amongst HIV-infected persons is a new challenge to the national effort to control TB, as some of the drugs that are recommended for TB treatment posed complications in case of HIV-infected persons and had to be withdrawn in areas with high prevalence. At the same time, testing for HIV amongst TB-infected people may deter a large proportion from seeking continuing treatment under the directly observed therapy strategy.

Antiretroviral treatment options are still prohibitively expensive. There is no vaccine in sight, and multi-drug antiretroviral therapy, locally known as ‘cocktail therapy’, has many adverse effects if not administered under proper medical supervision. There are instance of ‘quacks’ taking advantage of the situation and claiming cures through so-called herbal treatment and defrauding unsuspecting HIV-infected people out of large sums of money. Only 3–5 per cent of HIV-infected individuals can currently afford antiretroviral therapy. This is despite the fact that the antiretroviral drugs currently marketed by Indian pharmaceutical companies are sold at half of international rates. Recently, the anchor drug AZT has been made available free of charge, or at subsidized rates, in some public hospitals as part of the perinatal HIV intervention programme.

Not all antiretroviral drugs are marketed in India and at least half of them need to be imported, requiring special import duty exemptions for antiretroviral drugs or HIV-related research materials, including HIV testing kits. The few antiretroviral drugs currently available in India include zidovudine, lamivudine, stavudine, zalcitabine, saquinavir and ritonavir. They can be obtained only when prescribed by a physician. However, few physicians have much experience with these antiretroviral drugs in terms of prescribing adequate dosages, appropriate combinations, or monitoring drug interactions. No subsidies exist from government, the public sector or voluntary organizations to purchase antiretroviral drugs, and no local prescribing guidelines exist. However, most public hospitals do provide free treatment for tuberculosis or prophylaxis for other opportunistic infections.

Because of the perceived incurable nature of HIV infection, ignorance, advertisements in the various media promoting cures for HIV–AIDS, myths about side effects of allopathic medicine and an inability to afford the cost of modern antiretroviral
Perinatal HIV and AIDS in children

The World Health Organization estimates that, in South Asia, children make up 4 per cent of all HIV cases.\(^1\) The most important aspect of diagnosis of perinatal HIV is first identification of the HIV-infected pregnant women. In theory, maternal screening should subsequently enable health workers to implement measures to prevent perinatal HIV transmission. Unfortunately, although antibody-based ELISA (enzymelinked immunosorbent assays) are widely available, they remain out of the reach of many women because of their cost. There are no government-funded screening programmes for pregnant women. If perinatal transmission is to be prevented, public funding for screening will be essential. The first victory in containing HIV was achieved when it was shown in the United States and Europe that the perinatal transmission of HIV could be reduced by 75 per cent with the use of zidovudine from second trimester of pregnancy (oral route), during labour, and postnatal treatment of the newborn for 6 weeks (oral route), and by avoiding breast feeding.\(^27\) However, this protocol is expensive and impractical for most people in developing countries. Recently, a study from Thailand showed that shorter courses of zidovudine in the last month of pregnancy and during labour, with no treatment for the newborn, resulted in a 50 per cent reduction of transmission if breast feeding was avoided.\(^28\) Similarly, the results from HIVNET 012 demonstrated the efficacy of a single dose of nevirapine given to the mother at the onset of labour as well as within 72 h of the birth of the newborn.\(^29\) The cost-effectiveness of these and similar interventions in developing countries has been described recently.\(^30,31\)

In developing countries, such as India, short-term zidovudine – as in the recent CDC–Thai study\(^28\) – combined with caesarean section may be more cost effective than prolonged zidovudine therapy. Carefully performed studies are urgently needed for the Indian context. If and when effective preventive vaccines against HIV are available, the target population ought to be all children as part of universal immunization.

In some parts of the world, breast feeding by HIV-infected women has been shown to contribute to up to half of the cases of mother-to-child transmission of HIV, although this rate varies widely. On the other hand, breast feeding itself can be life saving for children born in poverty and over-crowding. A dilemma for a developing country such as India is recommending highly nutritious and life-saving breast feeding at the expense of increasing the risk of acquiring HIV. None the less, the World Health Organization now recommends that even developing countries should provide safe alternatives to breast feeding for children of HIV-infected women. In India the contribution of breast feeding to HIV transmission is unknown. Indian policies on breast feeding practices in this specific context ought to be based on local research findings. The policies should also acknowledge that the advice to breast feed should be based on individual circumstances, availability to purchase formula feeding and access to clean water. In the end, the mother should be the one that makes an informed decision on breast feeding. Although the formulation of an Indian breast feeding policy for HIV-infected mothers is urgently required, this should be accomplished in such a way to avoid reducing the rate of breast feeding for the population at large.

A large proportion of children who have been infected vertically deteriorate rapidly after birth, and in many Indian centres the reported rate of death in perinatally infected children is about 30 per cent by the first birthday. The rate of clinical progression of HIV infection was found to be much lower in children who were haemophiliacs and thalassaemics and infected with HIV, probably as a result of acquisition of HIV later in life when the child is likely to have a more mature immune system. With or without antiretroviral therapy, the child’s health can be substantially improved by proper attention to nutrition, hygiene, prophylaxis for opportunistic infections and prompt treatment of common bacterial infections. Most of these supportive measures are within the reach of most families and ought to be the mainstay of care for HIV-infected children.
Developmental issues

Although the HIV epidemic is driven by individual behaviour that puts people at risk of infection, this behaviour is likely to be shaped, in turn, by factors such as poverty, unequal relationships between men and women or between old and young, and by cultural and religious norms that leave people with little ability to control their exposure to the virus. The social, economic and cultural context that creates this kind of vulnerability to HIV infection in India has not been adequately studied or explained to date. There is relatively little information about the sexual and drug-taking habits of different socio-cultural groups in India. There is equally little known about the networks of sexual interaction that cause the virus to spread through a population.

In many areas of the country, education and job training are not available to young women. Economic hardship and lack of alternatives force many into commercial sex work. Women are also more vulnerable to coercion and sexual abuse, situations that increase their risk of contracting HIV. In general, gender, social and economic inequalities usually result in women being less able to negotiate for safer sex or to choose their sexual partners. Women’s equal access in all areas of political participation, education and health care needs to be negotiated and they need access to reproductive health care that is not dependent on their husbands or fathers. Although India currently has the highest number of people infected with HIV of any country in Asia, the topics of sex and sexuality are excluded from public discourse. The misleading cultural assumption is perpetuated in India that all people get married and are monogamous. Therefore, topics such as condom use, multiple sexual partners and homosexuality are very difficult to address openly.

To date, the National AIDS Control Programme has seen the HIV epidemic solely as a public health matter, to be dealt with exclusively by the Ministry of Health and Family Welfare. However, because of its behavioural aspects and its strong socio-economic associations, the disease needs to be treated as a far wider developmental issue, impinging on various economic and social sectors of governmental and non-governmental activity. As economically productive sections of the populations are the most susceptible to the disease, public and private enterprises and industry – including the railways, surface transport, heavy industry, steel and coal mines – are required to be actively involved. HIV–AIDS is a national calamity and can only be fought by forging co-ordination and convergence on HIV–AIDS prevention and control strategies between society, voluntary and government sectors. The overall vision of the NACO is to lead and catalyse an expanded environment without stigmatization and discrimination, and alleviate the epidemic’s devastating social and economic impact. The challenge will be to translate this vision into reality.

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