University of California
San Francisco
UCSF
AIDS Research Institute
AIDS Policy Research Center

Country AIDS Policy Analysis Project

HIV/AIDS in India

Maria Ekstrand, PhD, MS
Lisa Garbus, MPP
Elliot Marseille, DrPH, MPP

AIDS Policy Research Center, University of California San Francisco

Published August 2003
Updated August 2003

Table of Contents

(click on page number to go directly to that section)

Preface

The Country AIDS Policy Analysis Project is managed by the AIDS Policy Research Center at the University of California San Francisco. The project is funded by the U.S. Agency for International Development, Cooperative Agreement PHN-A-00-01-00001-00. Stephen F. Morin, PhD, is the project's principal investigator. The project receives additional support from the International Training and Education Center on HIV (I-TECH), a collaboration of the University of Washington and UCSF funded through a cooperative agreement with the HIV/AIDS Bureau of the U.S. Health Resources and Services Administration. The views expressed in the outputs of the Country AIDS Policy Analysis Project do not necessarily reflect those of USAID or I-TECH.

The Country AIDS Policy Analysis Project is designed to inform planning and prioritizing of effective and equitable HIV/AIDS prevention and treatment interventions through multidisciplinary research on HIV/AIDS. The project evolved from the acute need for analysis of the epidemiology of HIV/AIDS in tandem with analysis of countries' political economy and sociobehavioral context—at household, sectoral, and macro levels. This multidisciplinary analysis aims to:

- help inform national HIV/AIDS policies
- strengthen ability to plan, prioritize, and implement effective interventions
- highlight the range of sectoral interventions that may affect or be affected by HIV/AIDS
- facilitate multisectoral/interministerial coordination
- facilitate intercountry information sharing
- increase national and subregional capacity for effective partnerships

The project develops and disseminates online, fast-download, continually updated analyses of HIV/AIDS in 12 USAID priority countries: Ethiopia, Kenya, Malawi, Senegal, South Africa, Uganda, Tanzania, Zambia, Zimbabwe, Brazil, Cambodia, and India <http://ari.ucsf.edu/ARI/policy/countries.htm>

The primary audience for the country analyses is in-country HIV/AIDS planners, including those from government ministries and agencies, multi- and bilateral donors, international and local NGOs, health care institutions, prevention programs, academia, affected communities, and the private sector. International investigators and policymakers also report using the analyses in their work.

All country analyses undergo peer review at the AIDS Research Institute of the University of California San Francisco. In addition, two in-country experts from each profiled country serve as peer reviewers. A scientific advisory board also reviews all analyses.

Each analysis is linked with national strategic plans for HIV/AIDS prevention, care, and support. Analyses also include a comprehensive table of key indicators, drawn from a global database that UCSF's AIDS Policy Research Center conceptualized and developed. The database comprises 73 HIV/AIDS and socioeconomic indicators for 168 countries and 13 regions; APRC collected and organized data spanning HIV/AIDS, human development, gender, population, economy, public

expenditure trends (health, education, military), debt servicing, general health, sexual & reproductive health, and educational attainment. Project staff assess and incorporate new data to maintain the timeliness of the analyses.

Acknowledgments

The following individuals served as peer reviewers and provided valuable inputs to this paper: Dr. Monica Gandhi of the University of California San Francisco; Dr. Lalit Dandona, Health Policy Unit, Administrative Staff College of India, Hyderabad; and Dr. Jayashree Ramakrishna, Department of Health Education, Indian National Institute of Mental Health & Neuro Science, Bangalore. They are not responsible for any errors of fact or judgment.

Notes on State-Level Data

The scope of HIV/AIDS in India is enormous and rapidly changing. India has 35 states and union territories, and over 600 districts. Accessing complete, comparable data for all regions, states, union territories, and districts is a major challenge. Given this scenario, the present report provides a multidisciplinary overview of HIV/AIDS in India, focusing primarily on six states in which HIV prevalence has surpassed 1 percent among women attending antenatal clinics and which India's National AIDS Control Organization has identified as high priority: Andhra Pradesh, Karnataka, Maharasthra, Manipur, Nagaland, and Tamil Nadu.

Notes on Terminology

The use of the following caste categorizations and other nomenclature does not constitute an endorsement of any particular terminology: scheduled castes (*dalits)*, formerly referred to as "untouchables"; backward castes (formerly low castes); and scheduled tribes (indigenous peoples).

Executive Summary

Epidemiology

The number of HIV infections in India is difficult to ascertain and the subject of ongoing controversy. In late July 2003, NACO released new figures indicating that there were between 3.82 million and 4.58 million Indians living with HIV/AIDS during 2002, of whom 38.5 percent were women. NACO also estimated that there were 610,000 new HIV infections in 2002. UNAIDS estimated that between 2.6 million and 5.4 million Indians were living with HIV/AIDS at the end of 2001, with adult prevalence at 0.8 percent.

Low overall prevalence masks crucial differences among regions, states, and subpopulations. There are growing localized HIV epidemics in India. The heaviest impact of the epidemic is currently being felt in six states that have been classified as "high prevalence": Maharasthra, Tamil Nadu, Karnataka, Andhra Pradhesh, Manipur, and Nagaland. Moderate-prevalence states such as Gujarat and Goa also contain hard-hit districts.

The first case of HIV infection in India was reported in 1986. In 1987, HIV sentinel surveillance and AIDS case identification was launched. Initially, HIV spread among female sex workers and their male clients, STI clinic patients, and professional blood donors. It subsequently began to spread among populations including women attending antenatal clinics.

In July 2003, NACO announced that there has been a decline in HIV transmission through blood/blood products, from 6.07 percent of all new infections in 1999 to 2.99 percent in 2002. HIV transmission via IDU had also declined, from 5.29 percent of new infections in 1999 to 2.87 percent in 2002. The percent of HIV transmission attributed to mother-to-child transmission had increased, from 0.33 percent in 1999 to 2.61 percent in 2002. It is difficult to determine actual prevalence among MSM in India, given that NACO has only recently collected data on MSM and in only two surveillance sites.

India' HIV prevalence estimates are based solely on sentinel surveillance conducted at public sites. The country has no national information system to collect HIV testing information from the private sector, which provides over 80 percent of health care in the country. Moreover, most Indian laboratories do not adhere to quality assurance standards for HIV testing.

Political Economy and Sociobehavioral Context

India is the world's largest democracy. Its mid-2003 population was 1.07 billion. In recent decades, India has significantly improved the well-being of its people. Despite achievements, however, the scope of poverty continues to be enormous.

Structural adjustment measures launched in the 1990s have had some highly beneficial effects on the Indian economy, including higher growth rates, lower inflation, and significant increases in

foreign investment. However, both the central and state governments are currently facing a deteriorating fiscal situation. Moreover, vast income disparities between and within India's states persist and poverty reduction remains paramount. In 2001, India's GNI per capita of US$480 ranked 162 out of 208 countries.

Structural adjustment sought to shift more health care delivery to the private sector. Public spending on health, as a percent of GDP, did not rise during the 1990s (0.9 percent), whereas private expenditure on health now accounts for 4.0 percent of GDP, or 81.6 percent of all health spending.

There is an increasing gap between rich and poor states with regard to public resources available for health, with resultant disparities in health outcomes. A major concern is that as the central government reduces its role in health care delivery, with decentralization and privatization to fill the gap, safety nets for the poor (especially those in rural areas and women) are being threatened. This scenario is particularly worrisome as the ability of state governments to provide basic health care is imperiled, given their current and severe fiscal problems

There has been intense debate regarding recent poverty trends in India. The emerging consensus appears to be that there was some decline in poverty during the 1990s, but the size of the decline remains unclear. Using international poverty markers, in 1997, 44.2 of the population lived on less than US$1 a day, and 86.2 percent lived on less than US$2 a day. Richer states grew faster over the 1990s and may have also been more successful at reducing poverty. Poverty is increasingly concentrated in the poorest states, particularly Bihar, Uttar Pradesh, Orissa, and Madhya Pradesh.

Constitutional amendments in 1993 provided a legal foundation to local governments and sought to strengthen participatory processes at the local level. These amendments included a mandatory requirement that one-third of local representatives be women, and that seats be reserved for scheduled castes and tribes in proportion to their population. However, commitment to decentralization has varied by state, as has capacity to strengthen local government.

Corruption in India is systemic. With decentralization, states are increasingly responsible for addressing corruption, though whether they have adequate resources (in addition to political will) to do so is unclear. The Indian judicial system is impeded by enormous backlogs, slow processing times, some degree of corruption at the state level, low level of knowledge about new aspects of the law, and weak enforcement of decisions. Unable to persuade the executive or legislative branches to take action, many Indian NGOs are increasingly using public interest litigation to defend rights. Some of these cases have involved the rights of PWHA.

Over the past several years, India has experienced a significant increase in organized and random violence, particularly communal, ethnic, tribal, and caste-based violence. Kashmir is the largest threat to regional security in South Asia. Ethnic violence can, inter alia, spur significant population dislocation and regroupings of family units, which entail exposure to new sexual networks and thus may heighten vulnerability to HIV. It also affects state and local government's ability to deliver essential services.

There is enormous population mobility in India and throughout South Asia. Mobile populations include

- permanent and seasonal labor migrants within the country
- those entering and leaving India for work-related reasons
- people dislocated by drought, floods, or other disasters
- people dislocated by conflict
- refugees seeking asylum in India
- transport workers
- traders/vendors
- hotel and tourism workers
- tourists (e.g., temple tourists)
- prisoners
- military personnel
- sex workers
- trafficked persons
- MSM

India has a long history of mobility. During colonial rule, the British moved segments of the population to Sri Lanka, Malaya, and other countries to work on plantations. Movement of unskilled workers increased during the 1970s, including to the Gulf states, which sought cheap labor. According to the 1993 National Sample Survey in India, 24.7 percent of the population had migrated, either within India, to neighboring countries, or overseas.

Recent data on female-to-male sex ratios in urban and rural areas suggest that many more men than women have migrated to urban areas. Urbanization has resulted in large slum populations.

Labor migration is a common livelihood strategy in India. India is also a country of origin, transit, and destination for thousands of trafficked persons.

The communities from which migrants emigrate are vulnerable to HIV for several reasons. While their male partners are away for long periods (and particularly if they do not send regular remittances), some women may rely on sex work to supplement household income. Returning migrants with HIV, many of whom do not know their status, may infect their wives or other sex partners in the home community.

There are myriad challenges within the health sector, including the generally poor quality of services delivered by both the public and private sectors. The public health infrastructure is vast, comprising 600 district hospitals, 4,000 community health centers, 25,000 primary health centers, 137,000 subcenters, and 160 medical colleges. Public health facilities suffer from poor management, low-quality service, and underfunding. There is large variance in health financing among Indian states, and the gap between rich and poor states regarding public resources for health is increasing.

Sixty-five percent of Indian households go to private hospitals/clinics or doctors for treatment when a family member falls ill. Only 29 percent normally use the public health sector. Even

among poor households, only 34 percent normally use the public health sector when family members become ill. Only 10 percent of Indians have some form of insurance, most of which are inadequate.

The World Bank argues that the private health sector in India is unlikely to substantially improve the health and nutritional status of the poor. The private sector remains virtually unregulated and has highly variable quality of care. However, the government's response to HIV/AIDS, at least with regard to ART, is predicated on strong partnerships with the private sector.

According to WHO, India continues to have the world's highest burden of TB. Each year, there are an estimated 2 million new TB cases in India, representing about one-third of the global TB burden. TB remains the country's leading cause of death. WHO estimates that 4.0 percent of adult (15-49) TB cases were HIV-positive during 2001. An estimated 3.4 percent of new cases that year were multidrug-resistant. TB is the most common opportunistic infection in India. In 2001, a joint action plan on HIV/AIDS and TB was created, though WHO notes that concrete strategies to link the two do not yet exist.

Several studies indicate that herpes simplex virus-2 may be fueling the HIV epidemic in India.

HIV/AIDS-related stigma in India is severe. Stigma and discrimination are most often encountered in the health care setting and, to a lesser but still significant extent, in family and community contexts. AIDS stigma and discrimination in India are often a gendered phenomenon. Women are often blamed by their in-laws for infecting their husbands. In addition, HIV-positive women are more likely to take care of their husbands, neglecting their own health. After having been the primary caregivers for their husbands, many women are asked to leave the house of their in-laws after their husband die. Studies have also detailed how in addition to female sex workers, MSM and transgenders with HIV/AIDS experience double discrimination.

Indian women's legal rights have generally not been implemented. India’s sex imbalance is related to the comparative neglect of female health and nutrition, particularly during childhood. Other factors include increasing cases of sex-selective abortions (illegal but widespread); female infanticide; violence against women; *suttee* (wherein a widow is burned to death on her husband’s cremation pyre, an illegal act); dowry murders (wherein a woman is killed due to insufficient gifts/money given by her parents at the time of her wedding); and discrimination in access to health care, nutrition, and employment opportunities. Despite socioeconomic changes, preference for sons continues in India.

There are acute gender disparities in literacy and education. Forty-eight percent of ever-married women are not involved in making decisions about their own health care. There are significant and persistent gaps between women's legal rights and their actual ownership and control of land.

About 20 percent of ever-married women have experienced beatings or physical mistreatment since age 15 and at least one in nine have experienced such violence in the last year. Most of these women have been beaten or physically mistreated by their husbands.

Prior to HIV/AIDS, there were already strong gender biases in access to health care. Recent studies have found when both a husband and wife are infected with HIV/AIDS, men routinely receive care and treatment ahead of their wives. Lack of money and distance to treatment are also constraints to HIV-positive women's ability to access care.

The National Baseline Behavioral Surveillance Survey (BSS) found that overall awareness of HIV/AIDS in India is 76 percent, though variance among states is significant. There are also major urban-rural differentials. Gender differences are also striking: overall, 82 percent of men surveyed were aware of HIV/AIDS, whereas among women, this figure was 70 percent. The BSS found that awareness among SWs, MSM, and IDUs is much higher than in the general population.

Overall, only 21 percent of general population respondents had no incorrect knowledge of HIV transmission. Among higher-risk groups, misperceptions were far less prevalent. Twenty-seven percent of MSM perceive themselves to be at very high risk of acquiring HIV. Among IDUs, 35 percent perceive themselves to be at very high risk of contracting HIV. Only 17 percent of sex workers perceive themselves to be at very high risk of contracting HIV/AIDS. Moreover, whereas 21 percent of brothel-based SWs perceived themselves at very high risk of HIV, only 14 percent of non-brothel-based SWs reported this level of perceived risk.

The general population BSS found that nearly 7 percent of adults surveyed reported having sex with a nonregular partner in the last 12 months. The difference between men and women, however, was dramatic: 12 percent of men versus only 2 percent of women report having had sex with a nonregular partner. Thirty-two percent of these respondents reported consistent condom use with all nonregular partners. However, consistent condom use varied widely by state.

Among MSM who had commercial sex in the month prior to the survey, 13 percent reported consistent condom use with commercial male partners. This contrasts dramatically with the 30 percent of MSM reporting consistent condom with a noncommercial male partner in the month prior to the survey. Among IDUs who reported sex with any nonregular partner in the 12 months prior to the survey, 12 percent reported using condoms consistently with these partners. Among sex workers, 50 percent reported consistent condom use with paying clients in the last 30 days (though the figure was higher for brothel-based [57 percent] vs. non-brothel-based [46 percent] SWs). However, among those who had sex with a nonpaying partner in the three months prior to the survey, only 21 percent reported using condoms consistently.

Indian Penal Code 377, based on a 19th-century British law, criminalizes "the act of anal and oral sex performed either between two men or between a man and a woman."(There is currently a petition before the New Delhi High Court to repeal section 377.) Homosexuality is a taboo topic in India, and MSM are severely marginalized. Several studies have found that men report their male-to-male sexual activities as *masti* (fun or play) or to initiate sexual experiences, and do not equate them with sexual identities such as "gay," "bisexual," or "homosexual."

Data on MSM and TG in Mumbai have found that 17 percent of men and 68 percent of TG were HIV-positive. For both men and TG, HIV was significantly associated with syphilis, hepatitis C,

and herpes. Twenty-two percent of MSM were married, and 44 percent had visited female sex workers.

Although sex work is legal in some states, concomitant activities including soliciting and brothelkeeping are penalized. Poverty and marital abandonment are two reasons why women enter sex work. Many girls and women are also coerced into it. Human Rights Watch reports that Indian SWs are treated with contempt and commonly subjected to violations of their fundamental rights by the police, both at the time of their arrest and while in detention. HRW also documents increasing violence against outreach workers and peer educators who work with SWs (and MSM).

The national BSS found that 61 percent of female SWs were illiterate. The percentage of brothel-based SWs who were illiterate was much higher (77 percent) than the percentage of illiterate non-brothel-based SWs (51 percent). Mumbai has the country's largest brothel-based sex industry, with over 15,000 sex workers. Between 62 and 70 percent of sex workers in Mumbai are HIV-positive. Because of complex power dynamics, reaching SWs with HIV prevention services is a major challenge.

In 1992, the All India Institute of Hygiene and Public Health launched a program to reduce the transmission of HIV in Sonagachi, a red-light district in central Calcutta. The project began with two key interventions: a health clinic and outreach by peer educators. In 1992, consistent condom use with clients in Sonagachi was 1 percent. By 1998, this figure had reached 50 percent. During the same period, syphilis prevalence among SWs covered by the project fell from 25 to 11 percent. In 1998, HIV prevalence among SWs was 5 percent. A key element in the Sonagachi has been the participation of SWs in the project.

The BSS found that 16 percent of MSM respondents reported consuming alcohol every day. Fifteen percent of respondents regularly drank alcohol prior to sex. Intoxicating drug use was reported by nearly 13 percent of respondents. The BSS also found that 22 percent of SWs reported daily alcohol consumption. About 15 percent of SWs reported that they drink regularly before sex. Six percent of SWs reported ever trying any addictive drugs. Among them, almost one-third had injected drugs in the past 12 months.

The major drugs being abused in India are opium, heroin, morphine, buprenorphine, diazepam, cannabis, pheniramine, promethazine, nitrazepam, spasmorproxyvon, codeine phosphate, cocaine, ecstasy, amphetamine type stimulants, antihistamines, and codeine-based cough syrup. Epidemiological surveys and rapid assessment studies show that polydrug abuse is growing. The health of many drug users is often poor. Many IDUs do not inject properly and as a result experience ulcers, abscesses, cellulitis, and throbophlebitis. Many are undernourished, and a substantial number have experienced a drug overdose. The BSS found that among IDUs, 45.2 percent injected two to three times a day, whereas 16.1 percent injected more frequently. Fifty-three percent of respondents reported injecting buprenorphine, followed by heroin (34 percent), crack (22 percent), dextroproxyphene (6 percent), tranquilizers (3 percent), and cocktail of heroin and cocaine (1 percent). Forty-one percent of IDU respondents reported sharing (i.e., using) previously used needles/syringes. About 83 percent of respondents who cleaned

needles/syringes in the past month reported using cold water for cleaning; 9 percent used hot water, 2 percent used bleach or alcohol, and 1 percent boiled needles/syringes.

The majority of drug users in India are male. However, use of drug treatment data may underestimate the number of female drug users, with women addicts a hidden population. There is great stigma attached to women seeking assistance for drug use, and women's ability to access treatment is hindered by their myriad responsibilities and workloads (e.g., child care). Drug abuse by women in the northeast is believed to be growing.

Impact

India's life expectancy is projected to increase; however, AIDS will reduce life expectancy by 2 to 4 percent by 2050. By 2050, the U.N. projects that India's population will be 5 percent smaller than it would have been without AIDS. There were 2.8 million AIDS deaths in India between 1980 and 2000. During 2000-15, the U.N. projects that there will be 12.3 million AIDS deaths.

During the late 1990s, researchers estimated that the total annual cost of HIV/AIDS in India was roughly equal to 1 percent of GDP. However, this figure did not include numerous factors such as the cost of ART, strengthening of the healthcare system, and the retraining of workers.

Many households affected by HIV/AIDS face extreme economic and psychosocial difficulties in responding to the epidemic. AIDS treatment imposes a heavy financial burden on Indian families, leading to depletion of savings and increasing indebtedness of households. In India, AIDS care is being provided by elderly family members, women, and children.

Obtaining data on the number of Indian children orphaned by AIDS is difficult. The magnitude of AIDS orphanhood has not been adequately acknowledged either in India or in the international community. Child vulnerability is already high in India, with large numbers of orphaned and displaced children, a growing number of street children, poor quality and overburdened child welfare institutions, and wide-scale abuse and exploitation of children. Although children are not yet being orphaned by HIV/AIDS on a large scale in most cities, studies in Mizoram and Calcutta demonstrate that the problem of orphans in some areas of India is already severe. The extended family is the traditional social security system for orphans in India. However, its ability—as well as that of the larger community—to assume care for orphans may be imperiled as HIV/AIDS spreads, household breadwinners die, and household resources become strained.

Response

In many ways, the government’s response to the epidemic has been appropriate. In other respects, substantial material and political commitments have been too little and too late. After the first AIDS cases were identified in the U.S., the Indian Council of Medical Research established an AIDS task force. By 1986, surveillance centers designed to detect HIV were established at several medical colleges throughout metropolitan India.

Following identification of HIV in India in1986, the government took steps to target screening and prevention efforts to populations at high risk of infection. A high-profile National AIDS Committee was launched, and in 1987 the National AIDS Control Program was established, focusing on increasing awareness of HIV/AIDS, screening blood for HIV, and testing of individuals with high-risk behaviors. By 1991, the government perceived a need to establish a multisectoral program for prevention and control of HIV/AIDS. There was also a need for an agency to help establish a state-level response to HIV/AIDS. To fulfill these objectives, the government established the National AIDS Control Organization in 1992. In 2001, the government adopted the *National AIDS Prevention and Control Policy*. Important among the government's interventions are programs of condom promotion, behavioral changes, community information and education, targeting and involvement of vulnerable groups at risk, blood safety, and STI treatment.

In July 2003, Dr. Meenakshi Datta Ghosh, project director of NACO, stated that HIV/AIDS is no longer affecting only high-risk groups or urban populations, but "is gradually spreading into rural areas and the general population." In the eyes of many critics, the allocation of only $38.8 million of the government's own funds (excluding funds from the World Bank and other donors) over the period 1999–2004 is a major indication of insufficient governmental commitment. Critics also argue that there is inadequate governmental response in the area of IDU and MSM interventions. Although the national policy on HIV/AIDS addresses discrimination, there is no national legislation on HIV/AIDS-related discrimination to serve as an implementing instrument.

Additional criticisms include the perception that although there has been much commitment to addressing HIV/AIDS at the national level, this commitment is not matched at the state level. Currently, approximately one-third of India's 35 states and UTs have what the World Bank deems "good" HIV-control programs, one-third are "making some effort," and one third "are not on board, but are in denial." nother frequent criticism of the government's efforts is that during the initial response phase, NACO was focused on centralized, top-down planning and implementation. This led to insufficient "buy-in" at the state level and to uneven implementation of projects in the different states.

The country has 1,500 blood banks spread across large hospitals and small clinics, with quality varying among them. In June 2001, the government passed a law making it mandatory to test all donated blood for HIV, hepatitis C, hepatitis B, syphilis, and malaria. In December 2002, India's MOH announced that blood donors who tested positive for HIV would be told of their infection and asked to seek confirmatory tests and counseling. However, doctors working in blood transfusion services caution that the new policy will be difficult to implement given the current decentralized, fragmented state of blood banking services in India.

NACO's budget for 1992 through 1998 was US$100 million, funded by government and external donors. For 1999-2004, NACO's budget is US$300 million. Of this amount, the government allocation is US$38.8 million; US$191 million is financed through a World Bank loan, and the remainder from other donor. India's federal budget caps the amount that foreign donors can contribute to HIV/AIDS. Thus, some Indian states have the capacity to absorb more resources but are denied them. The government argues that its control of resources ensures that no one disease receives favor over any other.

Although the central government exerts considerable influence through the National Council of Education Research and Training, it has thus far not elaborated a concrete policy on an HIV curriculum. Persistent ambivalence about sex education has also impeded the full implementation of a population and family life education program begun in the early 1980s. Some state and municipal governments are implementing school-based-prevention programs, often in partnership with NGOs or multilateral donors such as UNICEF.

India's National Cadet Corps has implemented an HIV/AIDS awareness program. The program, implemented at the National Integration Camp in Delhi, has trained 600 cadets from all over the country in basic HIV prevention. These cadets will be further trained as resource persons, and will be responsible for training other cadets upon returning to their states.

Collaborations with the transport sector on HIV/AIDS prevention activities have been popular. However, the fragmented structure of the transport industry is a major constraint to identifying replicable approaches.

In India, there is widespread discrimination against people infected with HIV. Indian PWHA have great difficulty accessing support and are usually unable to discuss their HIV status for fear of repercussions. There is no national legislation to protect the rights of Indians with HIV/AIDS. The number of HIV/AIDS-related court cases has been rising rapidly. In the absence of HIV/AIDS-related legislation, the role of the judiciary in the evolution of legal principles regarding the epidemic has become crucial.

NACO has developed a VCT policy that states that "No individual should be made to undergo mandatory testing for HIV" and that "No mandatory HIV testing should be imposed as a precondition for employment or for provision of health care facilities during employment" (India's Armed Forces are exempt from this condition). NACO has also developed guidelines for VCT centers, which address consent and confidentiality issues. However, many Indians are tested for HIV without their knowledge or consent. Some government officials (including legislators in Goa and Andhra Pradesh) have voiced their support of mandatory premarital testing for HIV and are proposing related legislation.

In 1998, India's Supreme Court delivered a judgment that suspended the right of PWHA to marry, despite that the issue of PWHA's marrying had never come before the Court. The Lawyers Collective HIV/AIDS Unit contested the constitutionality of the 1998 ruling regarding marriage. In early 2003, the Supreme Court passed an order that all observations relating to marriage in the 1998 case were not warranted as they were not issues before the Court. However, the case highlights the massive stigma and discrimination faced by PWHA in India and their vulnerability—particularly given the lack of legal instruments—to human rights abuses, including those perpetuated by governmental institutions.

A July 2002 report from Human Rights Watch documented how HIV/AIDS projects, particularly those that provide essential information and services to SWs and MSM, are undermined by frequent and widespread police harassment and abuse of outreach workers.

Major HIV/AIDS donors include the World Bank, Bill & Melinda Gates Foundation, Global Fund to Fight AIDS, Tuberculosis & Malaria, DFID, USAID, CDC, NIH, UNDP, JICA,

AusAID, Sida, GTZ, and the EU. Numerous NGOs and CBOs, including associations of PHWA, are providing critical HIV/AIDS prevention, care, and support information and services. Many are playing leadership roles in their state and districts, particularly with regard to reaching marginalized populations. Although about 600 NGOs receive financial and technical support from the government, academic institutions, and external donors, many more work without any such assistance. Much of the work of NGOs and CBOs has not been evaluated, an impediment to scaling up.

Major international NGOs working on HIV/AIDS in India include the International HIV/AIDS Alliance, Family Health International, Population Council, Marie Stopes International, CEDPA, Médecins sans Frontières, and CARE. Numerous Indian and international academic and research institutes are undertaking crucial HIV/AIDS research, as well as providing HIV/AIDS prevention, care, and support information and services.

India has over 265 public VCT centers at state and local level (primarily in high-prevalence states). Although the number of private laboratories (which utilize rapid tests) is increasing, these labs generally do not offer client counseling. In its GFATM proposal, the government states that it aims to establish a VCT center in each of the country's approximately 600 district hospitals. VCT is also incorporated into the proposal's plans for scaling up PMTCT and expanding access to ART.

In March 2000, AZT was introduced in a PMTCT feasibility study supported by UNICEF and NACO in 11 medical colleges of the five most affected states. With GFATM funding, the government plans to scale up prevention and care interventions among women of child-bearing age and their families in partnership with the private sector by providing a package of primary prevention, family planning, VCT, NVP, and counseling on infant feeding. Specifically, the GFATM proposal sets out that PMTCT interventions will be scaled up from 81 public sector hospitals to 444 public and private, tertiary and secondary health institutions (primarily in the six high-prevalence states.

Since the launch of the second phase of the National AIDS Control Program in 1999, the Indian government has established 25 community HIV/AIDS care centers across the country. With GFATM funding, it plans to create drop-in centers for PWHA in high-prevalence states. As in many countries, an enormous amount of HIV/AIDS care and support is provided by NGOs and CBOs, including associations of PWHA. Twelve percent of NACO's budget is allocated to care and support, including treatment of OIs.

India's 2002 proposal to the GFATM states that only 1,500 PWHA are receiving (and adhering to) ART, and that another 8,000 to 10,000 are intermittent users or poorly adherent. ART has generally remained unaffordable for most Indians and has been prescribed primarily to those who can pay out of pocket or who are enrolled in research studies. To reduce prices, the government is making efforts to exempt customs and excise duty on all antiretroviral drugs available in India.

Indian pharmaceutical firms are currently manufacturing generic versions of ART and selling them at less than US$1 a day. The manufacture of generic ART drugs has been an essential

element in the dramatic reduction of drug prices. However, India is a member of the WTO, and its patent law will change on January 1, 2005. The effect will be to decrease the likelihood that Indian firms will be able to manufacture generic versions of additional ART drugs. This scenario will affect not only the cost of ART programs in India, but in countries to which Indian firms currently sell relatively inexpensive ART drugs.

India's GFATM proposal delineates the government's plans for increasing access to ART. The emphasis is on PMTCT (including ART for HIV-positive mothers and their families). The proposal appears to state that beyond the 10,000 individuals projected to receive ART through the PMTCT program, an additional 15,000 PWHA will be receiving structured ART through the private sector by 2008. The GFATM proposal does not address the myriad constraints in the largely unregulated private health care sector that will affect ART provision, monitoring, and adherence.

Concerns about adherence and the spread of resistant viral strains may be particularly pertinent in India because the generic, low-cost, triple-drug formulations available in India include NNRTIs such as nevirapine. Evidence suggests that an easily acquired single point mutation can confer resistance to all the agents in the NNRTI class when the virus becomes resistant to nevirapine alone. Many Indian doctors and government officials note that greater access to ART could lead, particularly in the largely unregulated private sector, to faulty prescription practices that might set the stage for the emergence of drug-resistant HIV strains.

India's National AIDS Research Institute is actively involved in preclinical and clinical trials of microbicide candidates. Phase III multicenter trials of Buffer Gel, Pro2000, and Carraguard are planned for 2003. Other research institutions involved in microbicide research include the National Institute of Pharmacological Education and Research and the Institute for Research in Reproduction. In February 2002, Hindustan Latex Limited signed an agreement with the U.K.-based Female Health Company to market (and eventually produce) female condoms in India. The female condom would be priced at Rs 45 per piece (approx US$0.95). HLL is exploring commodity and funding assistance to subsidize the cost. There are numerous projects that seek to reduce HIV vulnerability (particularly of young women) through vocational education, literacy interventions, and income-generating activities.

Since 2000, the International AIDS Vaccine Initiative has been working with the Indian Council of Medical Research and NACO to develop and evaluate AIDS vaccines in India. The National AIDS Research Institute in Pune will launch phase I trials of an AIDS vaccine in late 2003 or early 2004.

Several private sector employer organizations are actively involved in HIV prevention, including the Confederation of Indian Industries, Associated Chambers of Commerce and Industry of India, and Federation of Indian Chambers of Commerce and Industry. The ILO has an India HIV/AIDS project and is working with businesses, trade unions, and employer federations. ILO has documented the HIV/AIDS programs of several Indian businesses, which span awareness raising, training, condom distribution, VCT, and care & support. Some companies also offer treatment of STIs; some, treatment of OIs as well. Very few appear to offer ART. Among

prominent companies with HIV/AIDS programs are Tata Tea, Ltd., Tata Steel, Hindustan Petroleum Corporation, and Steel Authority of India Ltd.

Epidemiology

At a Glance: Summary Bullets

Overview

- The number of HIV infections in India is difficult to ascertain and the subject of ongoing controversy. In late July 2003, NACO released new figures indicating that there were between 3.82 million and 4.58 million Indians living with HIV/AIDS during 2002. NACO estimated that there were 610,000 new HIV infections in 2002.
- UNAIDS estimated that between 2.6 million and 5.4 million Indians were living with HIV/AIDS at the end of 2001, with adult prevalence at 0.8 percent.
- Low overall prevalence masks crucial differences among regions, states, and subpopulations. There are growing localized HIV epidemics in India. The heaviest impact of the epidemic is currently being felt in six states that have been classified as "high prevalence": Maharasthra, Tamil Nadu, Karnataka, Andhra Pradhesh, Manipur, and Nagaland.
- Moderate-prevalence states such as Gujarat and Goa also contain hard-hit districts.
- The most recent surveillance data indicate that HIV transmission through unsafe blood/blood products and via injecting drug use is declining, whereas mother-to-child transmission is increasing.
- Although HIV remains concentrated among marginalized groups such as sex workers, MSM, IDUs, and poor migrants, it is spreading rapidly within the general population.

HSS

- The first case of HIV infection in India was reported in 1986. In 1987, HIV sentinel surveillance and AIDS case identification was launched.
- Initially, HIV spread among female sex workers and their male clients, STI clinic patients, and professional blood donors. It subsequently began to spread among populations including women attending antenatal clinics.

NACO Estimates

- NACO estimated that there were 3.5 million Indians living with HIV/AIDS in 1998. In 2001, NACO estimated that this figure had risen to 3.97 million.

- In late July 2003, NACO released new figures indicating that there were between 3.82 million and 4.58 million Indians living with HIV/AIDS during 2002. NACO estimated that there were 610,000 new HIV infections in 2002. NACO also announced that 38.5 percent of Indians with HIV are women.

- In July 2003, NACO announced that there has been a decline in HIV transmission through blood/blood products, from 6.07 percent of all new infections in 1999 to 2.99 percent in 2002. HIV transmission via IDU had also declined, from 5.29 percent of new infections in 1999 to 2.87 percent in 2002. The percent of HIV transmission attributed to mother-to-child transmission had increased, from 0.33 percent in 1999 to 2.61 percent in 2002.

- It is difficult to determine actual prevalence among MSM in India, given that NACO has only recently collected data on MSM and in only two surveillance sites.

- In July 2003, Dr. Meenakshi Datta Ghosh, project director of NACO, stated that HIV/AIDS is no longer affecting only high-risk groups or urban populations, as it "is gradually spreading into rural areas and the general population."

Data Quality Issues

- India' HIV prevalence estimates are based solely on sentinel surveillance conducted at public sites. The country has no national information system to collect HIV testing information
- from the private sector, which provides over 80 percent of health care in the country.

- Most Indian laboratories do not adhere to quality assurance standards for HIV testing.

Overview

The number of HIV infections in India is difficult to ascertain and the subject of ongoing controversy. In 2001, India's National AIDS Control Organization (NACO) estimated that there were 3.97 million Indians infected with HIV.[1] UNAIDS published this figure in its July 2002 global update, but included an estimate range between 2.6 and 5.4 million.[2]

In late July 2003, on the eve of India's first Parliamentary Forum on HIV/AIDS, NACO released new figures indicating that there were between 3.82 million and 4.58 million Indians living with HIV/AIDS during 2002. NACO estimated that there were 610,000 new HIV infections in 2002. It also estimated that there had been 110,000 new infections in 2001; 180,000 in 2000; and 210,000 in 1999.[3]

A September 2002 report by the U.S. National Intelligence Council estimated that the current number of Indians infected with HIV is between 5 and 8 million and projected that this range will increase to 20 to 25 million by 2010.[4] The NIC report did state that its projections entailed a "relatively high margin of error" and the data used to calculate these figures were not declassified.

Because India has a population of 1.069 billion (mid-2003),[5] the HIV/AIDS figures cited above represent relatively low prevalence among the adult population. According to UNAIDS, adult HIV prevalence was 0.8 percent at the end of 2001.[6]

However, low overall prevalence masks crucial differences among regions, states, and subpopulations. There are growing localized HIV epidemics in India.[7] The most recent surveillance data indicate that HIV transmission through unsafe blood/blood products and via injecting drug use is declining, whereas mother-to-child transmission is increasing.[8] Although HIV remains concentrated among marginalized groups such as sex workers, MSM, IDUs, and poor migrants, it is spreading rapidly within the general population.[9]

Regional Classifications

NACO classifies India's 35 states and union territories as "high," "moderate," or "low" HIV prevalence, based on the following definitions:

1. High prevalence states: HIV prevalence among women attending ANCs is 1 percent or above. Based on 2001 sentinel surveillance, these states currently include Maharasthra, Manipur, Andhra Pradesh, Tamil Nadu, Karnataka and Nagaland.

2. Moderate prevalence states: HIV prevalence among women attending ANCs is less than 1 percent and prevalence in STI and other high risk groups is 5 percent or above.

3. Low prevalence states: HIV prevalence among women attending ANCs is less than 1 percent and HIV prevalence among STI and other high-risk group is less than 5 percent.

As seen in table 1 below, the heaviest impact of the epidemic is currently being felt in six states that have been classified as "high prevalence": Maharasthra in the western part of the country; Tamil Nadu, Karnataka, and Andhra Pradhesh in the south; and Manipur and Nagaland in the northeast.

HIV Sentinel Surveillance

NB: As mentioned above, in late July 2003, NACO announced new national HIV/AIDS figures in conjunction with the Parliamentary Forum on HIV/AIDS. As of August 5, 2003, NACO had not yet released any new surveillance or situational reports on its web site. The section below, therefore, draws heavily on the most recent round of HSS, which was conducted during August-October 2001. Once NACO releases new data, they will be integrated into this paper.

Background

The first case of HIV infection in India was reported in 1986 at Madras Medical College in Chennai.[10] In 1987, HIV sentinel surveillance and AIDS case identification began in 62 public health centers and nine reference centers. Over the next six years, AIDS cases were reported in all states.[11]

Initially, HIV spread among female sex workers and their male clients, STI clinic patients, and professional blood donors (individuals who accept a monetary compensation in return for donating blood). It subsequently began to spread among populations including women attending antenatal clinics. By 1990, HIV prevalence among sex workers and STI clinic attendees in Maharashtra and among IDUs in Manipur had surpassed 5 percent. By 1994 in Maharashtra, HIV was no longer restricted to these subpopulations, but had spread to the general population. HIV was also spreading in Gujarat and Tamil Nadu, where prevalence among high-risk groups was over 5 percent. [12]

By 1998, HIV had spread rapidly in the four large southern states, not only within high-risk groups but also in the general population, where it was over 1 percent. Infection rates among women attending ANCs was 3.3 percent in Namakkal in Tamil Nadu and 5.3 percent in Churachandpur in Manipur. Among IDUs in Churachandpur, HIV prevalence was 76 percent and in Mumbai, 64.4 percent.[13]

In 1999, HIV prevalence in the ANC survey in Namakkal had risen to 6.5 percent. In some Mumbai sites, about 60 percent of sex workers were infected with HIV. HIV infection among STI patients was 30 percent in Andhra Pradesh and 14 to 60 percent in Maharashtra.[14]

By 2001, an estimated 15 to 35 percent of truck drivers nationwide were HIV-positive.[15] HIV prevalence in the general population had surpassed 1 percent in six states (Maharasthra, Manipur, Andhra Pradesh, Tamil Nadu, Karnataka and Nagaland). These states accounted for 75 percent of the country's estimated HIV cases.[16]

Recent HSS

In 1994, HSS was conducted in 55 sites, expanding to 180 sites in 1998. In 2000, there were 232 sites.[17] India's HIV sentinel surveillance system uses anonymous, unlinked blood sample screening for HIV antibodies to estimate prevalence of HIV in various states and population groups. Surveys are now conducted annually, and survey sites include STI and antenatal clinics, as well as several sites that work with IDUs and MSM.

The most recent round of HSS was conducted in 320 sites from August to October 2001. These sites include 135 STI clinics, 170 ANCs, 13 sites where IDUs were surveyed, and 2 sites for MSM (in Mumbai and Chennai) (table 1).

Table 1. HIV Prevalence by State, 2001

S.N.	State/UT	Number of Sites	HIV Prevalence 2001 (%)
1	Andhra Pd.	STD 4	26.60
		ANC 9	1.50
2	Arunachal Pd.	STD 2	0.00
		ANC 1	0.00
3	Assam	STD 2	1.49
		ANC 3	0.00

4	Bihar	STD 5	1.20
		ANC 7	0.13
5	Chattisgarh	STD 3	1.40
		ANC 5	0.33
6.	Delhi	STD 4	4.65
		ANC 4	0.13
		IDU 1	-
7	Goa	STD 2	15.00
		ANC 2	0.50
		CSW 1	50.79
8	Gujarat	STD 8	4.14
		ANC 7	0.50
9	Haryana	STD 4	1.08
		ANC 3	0.41
10	Himachal Pd.	STD 5	0.26
		ANC 7	0.13
11	Jammu & Kashmir	STD 2	0.80
		ANC 3	0.25
12	Jharkhand	STD 3	0.25
		ANC 6	0.08
13	Karnataka	STD 7	16.40
		ANC 10	1.13
		IDU 1	2.00
14	Kerala	STD 3	6.42
		ANC 3	0.08
15	Madhya Pd.	STD 6	2.69
		ANC 10	0.25
16	Maharashtra &	STD 9	9.20
	Mumbai	ANC 14	1.75
		IDU 1	41.38
		MSM 1	23.60
		CSW 1	52.26
18	Manipur	IDU 3	56.26
		STD 2	10.50
		ANC2	1.75
19	Meghalaya	IDU 1	1.39
		STD 2	0.00
		ANC 2	0.00
20	Mizoram	IDU 1	2.00
		STD 2	2.20
		ANC 3	0.33
21	Nagaland	IDU 2	5.50
		STD 1	7.40
		ANC 4	1.25
22	Orissa	STD 7	0.80
		ANC 4	0.25

23	Punjab	STD 3	1.61
		ANC 4	0.40
24	Rajasthan	STD 6	4.00
		ANC 6	0.00
25	Sikkim	STD 1	0.00
		ANC 2	0.00
26	Tamil Nadu	STD 5	12.60
		ANC 10	1.13
		IDU 1	24.56
		MSM 1	2.40
27	Tripura	STD 1	3.20
		ANC 1	0.25
		IDU 1	-
28	Uttar Pd.	STD 10	0.90
		ANC 11	0.00
29	Uttranchal	STD 4	0.40
		ANC 2	0.00
30	West Bengal	STD 6	0.60
		ANC 8	0.13
		IDU 1	-
31	A &N Islands	STD 1	1.20
		ANC 3	0.16
32	Chandigarh	STD 2	3.78
		ANC 1	0.00
33	D & N Haveli	ANC 1	0.25
34	Daman & Diu	ANC 2	0.25
35	L'dweep	STD 1	-
		ANC 2	-
36	Pondicherry	STD 3	2.00
		ANC 1	0.25

Notes: 1.HIV prevalence values in states with over three sites are median values, whereas in states/UTs with three or fewer sites, the values are mean values.
2. Sites with 75 percent coverage of desired sample size (STI: 250; ANC: 400) are included for analysis.
Source: NACO. *HIV/AIDS Indian Scenario: HIV Estimates for Year 2001*. New Delhi: n.d. <http://www.naco.nic.in/indianscene/esthiv.htm>

As table 2 shows, high-prevalence states include some districts that have been particularly hard hit. Moderate-prevalence states such as Gujarat and Goa also contain hard-hit districts.

Table 2. Districts with High Prevalence of HIV among STI Patients, IDUs, and ANC Attendees, 2001

S. No	State/UT	District	
1.	Andhra Pradesh (7)	Hyderabad	Chittoor
		Vishakhapatnam	Kurnool
		Guntur	Warrangal

		East Godavari	
2.	Goa (1)	South-Goa	
3.	Gujarat (3)	Ahmedabad	Baroda
		Surat	
4.	Karnataka (10)	Bangalore	Dakshin Kannada
		Mysore	(Mangalore)
		Dharwad(Hubli)	Udipi
		Bellary	Bijapur
		Belgaum	Shyamraj Nagar
		Gulbarga	(Kollegal)
5.	Maharashtra (14)	Nagpur	Kolhapur
		Sangli	Nasik
		Pune	Satara
		Aurangabad	Solapur
		Chandrapur	Thane
		Latur	Mumbai
		Ratnagiri	Jalgaon
6.	Manipur (4)	Imphal	Bishnupur
		Churachandpur	Thoubal
7.	Nagaland (3)	Kohima	Mokok Chung
		Tuensang	
8.	Tamil Nadu (7)	Madurai	Namakkal
		Trichy	Tirunelveli
		Salem	Chennai
		Coimbatore	

Source: NACO. *HIV/AIDS Indian Scenario: HIV Estimates for Year 2001*. New Delhi: n.d. <http://www.naco.nic.in/indianscene/esthiv.htm>

Latest NACO Estimates

NACO estimated that there were 3.5 million Indians living with HIV/AIDS in 1998. In 1999 and 2000, this figure rose to3.7 million and 3.86 million, respectively. In 2001, NACO estimated that there were 3.97 million Indians infected with HIV.[18]

In late July 2003, NACO released new figures indicating that there were between 3.82 million and 4.58 million Indians living with HIV/AIDS during 2002. NACO also announced that 38.5 percent of Indians with HIV are women.[19]

NACO estimated that there were 610,000 new HIV infections in 2002.[20] For previous years, it estimated that there had been 110,000 new infections in 2001; 180,000 in 2000; and 210,000 in 1999.[21] (Prior to the release of the July 2003 figures, NACO had believed that the HIV/AIDS epidemic in India might be plateauing, given its 1999-2001 data on number of new infections.[22])

Transmission Patterns

In October 2002, NACO released a study of cumulative AIDS cases reported since 1986. It found that 84 percent of HIV infections were transmitted sexually. Perinatal transmission accounted for 2.6 percent of infections, IDU 2.93 percent, and unsafe blood and blood products, 3.01 percent. NACO was unable to ascertain mode of transmission in 7.46 percent of cases.[23] Data on occupational exposure are poor. [24]

In July 2003, NACO announced that there has been a decline in HIV transmission through blood/blood products, from 6.07 percent of all new infections in 1999 to 2.99 percent in 2002. At that time, NACO also announced that HIV transmission via IDU had also declined, from 5.29 percent of new infections in 1999 to 2.87 percent in 2002. The percent of HIV transmission attributed to mother-to-child transmission had increased, from 0.33 percent in 1999 to 2.61 percent in 2002. [25]

Patterns of HIV differ by subregion. Among high-prevalence states such as Maharasthra, Tamil Nadu, Karnataka, and Andhra Pradhesh, heterosexual transmission reportedly accounts for the majority of HIV infections, whereas injection drug use has been driving the epidemic in Manipur and Nagaland. Nevertheless, prevalence among IDUs are also high in Tamil Nadu and Maharasthra (24.56 and 41.38 percent, respectively). [26]

It is difficult to determine actual prevalence among men who have sex with men (MSM) in India, given that NACO has only recently collected data on MSM and in only two surveillance sites. In 2001, MSM prevalence was 24 percent in Mumbai (Maharasthra) and 2.4 in Chennai (Tamil Nadu). Many public health professionals working in the area of male-to-male transmission have noted that the 3:1 proportion of male-to-female HIV cases does not fit with the reported prevalence of heterosexual transmission, given that male-to-female transmission is much more efficient than transmission from women to men. They therefore suggest that male-to-male transmission and/or the number of infections among women are underreported.

UNAIDS Estimates

At the end of 2001, UNAIDS estimated that 3.97 million Indian adults and children were living with HIV/AIDS (estimate range: 2.6 million to 5.4 million) Of them, 3.8 million were adults (ages 15 to 49), with adult prevalence at 0.8 percent.[27] (At the end of 1999, UNAIDS estimated adult prevalence at 0.7 percent.[28]) There were 170,000 Indian children (ages 0 to 14) living with HIV/AIDS at the end of 2001.[29]

Using the most recent NACO figures indicates that India accounted for 87 percent (610,000) of the 700,000 new HIV infections that occurred during 2002 in South & Southeast Asia.[30]

UNAIDS estimated that of adults infected with HIV during 2001, 1.5 million (39.5 percent) were women. (At the end of 1999, UNAIDS estimated that 37.14 percent of adults infected with HIV were women.[31]) At the end of 2001, HIV prevalence among women ages 15 to 24 ranged from 0.46 to 0.96 percent; the comparable range for men in the same age group was 0.22 to 0.46 percent. [32]

AIDS Cases

In October 2002, NACO published data on the number of AIDS cases reported to date (table 3). Data for the most recent month suggest that the proportion of reported female AIDS cases is increasing (from approximately 25 percent of the cumulative total, versus 35 percent of cases in October 2002). [33] In July 2003, NACO announced that 38.5 percent of Indians with HIV are women.[34]

NACO's October 2002 data indicate that slightly over half (53 percent) of reported AIDS cases were diagnosed among individuals 30-44 years; 36 percent of cases were diagnosed among 15- to 29-year-olds. [35]

The three states with the highest absolute numbers of reported AIDS cases were Tamil Nadu, Maharasthra, and Andhra Pradesh (representing 44, 21, and 5 percent, respectively of the national total).

Table 3. Reported AIDS Cases, October 2002

AIDS CASES IN INDIA	Cumulative	This Month
MALES	31230	587
FEMALES	10376	311
Total	**41606**	**898**

RISK/TRANSMISSION CATEGORIES		
	No. of cases	**Percentage**
Sexual	35075	84.30
Perinatal transmission	1082	2.60
Blood and blood products	1251	3.01
Injectable Drug Users	1217	2.93
History not available	2981	7.16
Total:	**41606**	**100.00**

Age group	Male	Female	Total
0 - 14 yrs	989	603	1592
15 - 29 yrs.	10114	4800	14914
30 - 44 yrs.	17598	4339	21937
> 45 yrs.	2529	634	3163
Total	**31230**	**10376**	**41606**

S. No.	State/UT	AIDS Cases
1	Andhra Pradesh	2157
2	Assam	149
3	Arunachal Pradesh	0
4	A & N Islands	24
5	Bihar	145
6	Chandigarh (UT)	618
7	Delhi	713
8	Daman & Diu	1
9	Dadra & Nagar Haveli	0
10	Goa	115
11	Gujarat	1925
12	Haryana	247
13	Himachal Pradesh	104
14	Jammu & Kashmir	2
15	Karnataka	1551
16	Kerala	267
17	Lakshadweep	0
18	Madhya Pradesh	918
19	Maharashtra	8723
20	Orissa	82
21	Nagaland	274
22	Manipur	1238
23	Mizoram	34
24	Meghalaya	8
25	Pondicherry	157
26	Punjab	211
27	Rajasthan	543
28	Sikkim	4

29	Tamil Nadu	18276
30	Tripura	5
31	Uttar Pradesh	753
32	West Bengal	930
33	Ahemdabad M.C	267
34	Mumbai M.C	1165
	Total:	**41606**

Source: NACO. <http://naco.nic.in/> Accessed October 2002.

AIDS Mortality

The U.N. Population Division's most recent projections of AIDS mortality are found in tables 4 and 5. They indicate that by 2000, there had been 2.8 million AIDS deaths in India.

Table 4. India: Projected Number of Deaths with and without AIDS, 1980-2000, 2000-2015, and 2015-2050

Period					
1980-2000		**2000-2015**		**2015-2050**	
With AIDS	Without AIDS	With AIDS	Without AIDS	With AIDS	Without AIDS
182,307,000	179,533,000	140,546,000	128,295,000	452,901,000	403,398,000

Source: Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat. *World Population Prospects: The 2002 Revision. Highlights.* New York: February 2003 <http://www.un.org/esa/population/publications/wpp2002/wpp2002annextables.PDF>

Table 5. India: Excess Deaths Because of AIDS, 1980-2000, 2000-2015, and 2015-2050

Period					
1980-2000		**2000-2015**		**2015-2050**	
Excess Deaths	Percentage Increase	Excess Deaths	Percentage Increase	Excess Deaths	Percentage Increase
2,774,000	2	12,251,000	10	49,503,000	12

Source: Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat. *World Population Prospects: The 2002 Revision. Highlights.* New York: February 2003 <http://www.un.org/esa/population/publications/wpp2002/wpp2002annextables.PDF>

See the Impact section for more detailed discussion.

National Prevalence Trends

Although India's HIV/AIDS epidemic varies widely among regions, it is spreading rapidly along coastal areas and inland, affecting all parts of the country, both rural and urban. Solomon and

Ganesh of YRG Care, a major NGO discussed throughout this paper, note that early descriptions of HIV created a general perception that HIV infection was largely restricted to sex workers, truckers, and IDUs. They underscore that the so-called general population was—and in many cases, still is—in denial. [36] UNAIDS also notes that the perception of risk among the general population is still low.[37] In high-prevalence states, HIV is increasing in rural areas.[38] Yet many in rural areas—where 72 percent of India's population lives[39] — believe that HIV/AIDS is an urban disease.[40]

As the data above demonstrated, the percent of adult HIV infections among women is increasing. The most recent data from NACO indicate that 38.5 percent of Indians with HIV are women.[41] HIV prevalence among monogamous women is increasing through unprotected sex with infected spouses.[42] Despite this scenario, interventions have tended to focus on "high-risk" communities, ignoring monogamous women. Rural women are particularly vulnerable to acquiring HIV, given that, among other reasons, they cannot easily access information on HIV/AIDS. [43] (See the Gender section for further discussion.)

Perhaps the single most important question concerning national prevalence trends is whether the epidemic will pass a "tipping point." This tipping point represents the transition from an epidemic that is largely confined to high-risk groups to one that has spread into the general population. Once this transiting has occurred, the epidemic is far more difficult to control and the scale of devastation will be far greater. As mentioned above, the most recent surveillance data indicate that HIV transmission through unsafe blood/blood products and via IDU is declining, whereas mother-to-child transmission is increasing.[44] In July 2003, Dr. Meenakshi Datta Ghosh, project director of NACO, stated that HIV/AIDS is no longer affecting only high-risk groups or urban populations, as it "is gradually spreading into rural areas and the general population." [45] (See the Response section for more detailed discussion.)

State-level Analyses

Karnataka

Among states, only Karnataka has published HIV sentinel surveillance data disaggregated by sociodemographic markers. In 1999 and 2000, Karnataka included 14 sites in its HIV sentinel surveillance. Four additional sites were included in 2001. Sites comprise seven STI clinics, one IDU-specific site, and 10 ANC sites. Results obtained in 2001 indicated that the highest HIV prevalence was found in STI clinics (mean prevalence: 16.7 percent), followed by the IDU site (2 percent). Mean prevalence among ANCs was 1.4 percent, suggesting that HIV had spread to the general population and placing Karnataka in the "high prevalence" group of states. However, these mean values obscure significant differences within the state. For example, three districts reported HIV prevalence at ANCs of 1 to 1.9 percent and four districts (Bangalore, Chamrajnagar, Bijapur, and Raichur) reported ANC prevalences of 2 percent or greater. The four districts with ANC prevalence of 2 percent or above are located in the southern part of the state, in and around Bangalore, on the border with Tamil Nadu, or in northern Karnataka's "*devadasi* belt." [46] *Devadasi* women have historically been dedicated to divine service. This service has evolved into a temple-based sex industry. Many women from this part of the country are

"supplied" to the sex trade in large cities such as Mumbai.[47] (See box 1 for links regarding the "*devadasi* belt.")

Box 1. Links Regarding India's "*Devadasi* Belt"

http://www.hartford-hwp.com/archives/52a/062.html
http://www.twnside.org.sg/title/belt-cn.htm
http://www.chennaionline.com/specials/womensday2002/womenissues.asp
http://www.deccanherald.com/deccanherald/july28/sh2.htm
http://www.aliciapatterson.org/APF2003/Wells/Wells.html
http://www.sanjevani.com/welcome1.htm
http://www.celrrd.com/html/mandal.htm
http://www.celrrd.com/html/poonam.htm
http://www.clubs.psu.edu/aid/home/projects/vimukti/Reply.First.htm

Within Karnataka, HIV prevalence was highest among illiterate individuals (this finding was particularly strong within the ANC sites) and migrant workers. Among ANC attendees, prevalence was highest in rural sites and among women whose husbands were in an agricultural or unskilled occupation. Among STI patients, the highest prevalence was found in rural and urban men (20.8 percent and 18 percent, respectively), and among older men and younger women. Among female STI patients under age 20, HIV prevalence was 15.5 percent, increasing to 18 percent in women between 20 and 29, and decreasing to 9.8 percent in women ages 30-44. The opposite pattern was seen in male STI patients: only 6.7 percent of men under 20 were HIV-positive, whereas prevalence increased to 16.4 percent in 20- to 29-year-olds and to 22.1 percent among those ages 30-44.[48]

Data Quality Issues

Conducting HIV sentinel surveillance in a country as enormous and diverse as India is a massive task. NACO must be commended for carrying out HSS and for adding sites that target IDUs and MSM, in addition to ANCs and STI clinics. (A guide to interpreting ANC data is found in box 2.)

However, there are several issues that should be noted with regard to the quality of India's HSS data. India' HIV prevalence estimates are based solely on sentinel surveillance conducted at public sites. The country has no national information system to collect HIV testing information

Box 2. HIV Sentinel Surveillance: Evaluating Data from Antenatal Clinics

In many developing countries, estimates on the magnitude of and trends in the HIV epidemic are obtained through HIV seroprevalence surveys. These surveys are primarily conducted using sentinel populations. The most frequently used sentinel populations are women attending antenatal clinics and persons attending clinics for diagnosis and treatment of sexually transmitted infections. The objectives of sentinel seroprevalence surveys include:

1. obtaining information on the prevalence of HIV infection in the sentinel population
2. monitoring trends in HIV prevalence in the sentinel population
3. providing information for estimating future number of AIDS cases
4. providing information for program planning and evaluation of interventions

Seroprevalence surveys are usually conducted annually at preselected clinics or hospitals. Surveys of women attending antenatal clinics can provide a reasonable estimate of HIV prevalence within the general population. The surveys are conducted among women ages 15 to 49 years attending the antenatal clinic for the first time during a current pregnancy. Surveys are usually conducted in an unlinked manner, in which serum remaining from routine syphilis screening is tested for HIV infection after all personal identifying information is removed from the specimen. Sampling is usually conducted during an 8- to 12-week period, and all eligible women are sampled consecutively until the desired sample size is achieved. In general, samples of 250 and 400 women are usually sufficiently large as to provide reasonable estimates of HIV prevalence over time.

Although these surveys are extremely useful, there are several limitations to consider when interpreting the survey results. The surveys are not based upon a probability sample and therefore may not be representative of the population as a whole. True population-based surveys have found antenatal clinic data may overestimate or underestimate HIV prevalence.

Moreover, the ANC studies do not provide information on mortality or HIV-associated morbidity. In addition, although monitoring trends in HIV prevalence provide information on the magnitude of the HIV epidemic, trends in prevalence cannot be relied upon to indicate trends in HIV incidence. However, examining trends in HIV prevalence in younger populations, particularly 15- to 19-year-olds, may provide some indication of trends in recently acquired HIV infection , as this group is unlikely to have been infected for a long period of time.

Prepared by Sandy Schwarcz, MD, MPH
Director, HIV/AIDS Statistics and Epidemiology Section, San Francisco Department of Public Health
Adjunct Assistant Professor, Department of Epidemiology and Biostatistics, University of California San Francisco

from clinical laboratories in the private sector.[49] (As discussed in the next section, the private sector accounts for an increasingly large share of health care provision in India. In 2000, India's public spending on health was 0.9 percent of GDP, whereas private expenditures on health accounted for 4.0 percent of GDP.[50]) Another issue involves the characteristics of those being tested. Some researchers note that individuals dying from opportunistic infections associated with HIV are generally not being tested, and thus prevalence may be underestimated .[51] , [52] However, this scenario may be changing with the increase in the number of VCT sites (see below), such that a larger proportion of people who are being tested are symptomatic.[53]

Solomon and Ganesh also stress that most Indian laboratories do not adhere to quality assurance standards for HIV testing. HIV test results are often inaccurate for several reasons: test kits are used after expiration dates; kits are not stored at the correct temperature; electricity is shut down at night; air-conditioning for the testing equipment is erratic; poor-quality water is used; and equipment is often recycled. [54]

Political Economy and Sociobehavioral Context

At a Glance: Summary Bullets

Overview

- India is the world's largest democracy. Its mid-2003 population was 1.07 billion.
- In recent decades, India has significantly improved the well-being of its people. Despite achievements, however, the scope of poverty continues to be enormous.

Economy

- Structural adjustment measures launched in the 1990s have had some highly beneficial effects on the Indian economy, including higher growth rates, lower inflation, and significant increases in foreign investment. However, both the central and state governments are currently facing a deteriorating fiscal situation.
- Moreover, vast income disparities between and within India's states persist and poverty reduction remains paramount. In 2001, gross national income per capita was US$480. This figure is somewhat higher than that for the South Asia region and for all low-income countries. However, globally, India's GNI per capita ranks 162 (of a total 208 countries).
- Structural adjustment sought to shift more health care delivery to the private sector. Public spending on health, as a percent of GDP, did not rise during the 1990s (0.9 percent), whereas private expenditure on health now accounts for 4.0 percent of GDP, or 81.6 percent of all health spending.
- There is an increasing gap between rich and poor states with regard to public resources available for health, with resultant disparities in health outcomes.
- A major concern is that as the central government reduces its role in health care delivery, with decentralization and privatization to fill the gap, safety nets for the poor (especially those in rural areas and women) are being threatened. This scenario is particularly worrisome as the ability of state governments to provide basic health care is imperiled, given their current and severe fiscal problems

Poverty

- There has been intense debate regarding recent poverty trends in India. The emerging consensus appears to be that there was some decline in poverty during the 1990s, but the size of the decline remains unclear. Richer states grew faster over the 1990s and may have also been more successful at reducing poverty.

- Poverty is increasingly concentrated in the poorest states, particularly Bihar, Uttar Pradesh, Orissa, and Madhya Pradesh.

- Using international poverty markers, in 1997, 44.2 of the population lived on less than US$1 a day, and 86.2 percent lived on less than US$2 a day.

Governance

Decentralization

- Constitutional amendments in 1993 provided a legal foundation to local governments and sought to strengthen participatory processes at the local level. These amendments included a mandatory requirement that one-third of local representatives be women, and that seats be reserved for scheduled castes and tribes in proportion to their population.

- However, commitment to decentralization has varied by state, as has capacity to strengthen local government.

Corruption

- Corruption in India is systemic. With decentralization, states are increasingly responsible for addressing corruption, though whether they have adequate resources (in addition to political will) to do so is unclear.

Judiciary

- The Indian judicial system is impeded by:

  → enormous backlogs
  → extremely slow processing times
  → some degree of corruption at the state level
  → low level of knowledge about new aspects of the law
  → weak enforcement of decisions

- Unable to persuade the executive or legislative branches to take action, many Indian NGOs are increasingly using public interest litigation to defend rights. Some of these cases have involved the rights of PWHA.

Violence

- Over the past several years, India has experienced a significant increase in organized and random violence, particularly communal, ethnic, tribal, and caste-based violence.

- Kashmir is the largest threat to regional security in South Asia.

- Ethnic violence can, inter alia, spur significant population dislocation and regroupings of family units, which entail exposure to new sexual networks and thus may heighten vulnerability to HIV. It also affects state and local government's ability to deliver essential services.

Population Mobility

- There is enormous population mobility in India and throughout South Asia. Mobile populations include

  → permanent and seasonal labor migrants within the country
  → those entering and leaving India for work-related reasons
  → people dislocated by drought, floods, or other disasters
  → people dislocated by conflict
  → refugees seeking asylum in India
  → transport workers
  → traders/vendors
  → hotel and tourism workers
  → tourists (e.g., temple tourists)
  → prisoners
  → military personnel
  → sex workers
  → trafficked persons
  → MSM

- India has a long history of mobility. During colonial rule, the British moved segments of the population to Sri Lanka, Malaya, and other countries to work on plantations.

- Movement of unskilled workers increased during the 1970s, including to the Gulf states, which sought cheap labor.

- According to the 1993 National Sample Survey in India, 24.7 percent of the population had migrated, either within India, to neighboring countries, or overseas.

- Labor migration is a common livelihood strategy in India.

- The communities from which migrants emigrate are vulnerable to HIV for several reasons. While their male partners are away for long periods (and particularly if they do not send regular remittances), some women may rely on sex work to supplement household income. Returning migrants with HIV, many of whom do not know their status, may infect their wives or other sex partners in the home community.

- Recent data on female-to-male sex ratios in urban and rural areas suggest that many more men than women have migrated to urban areas. Urbanization has resulted in large slum populations.

- India is a country of origin, transit, and destination for thousands of trafficked persons.

Health

- Over the past several decades, India has made significant progress in improving health and well-being.

- Despite achievements, the country continues to bear a heavy burden of both communicable and noncommunicable diseases. There are myriad challenges within the health sector, including the generally poor quality of services delivered by both the public and private sectors.

- India's state governments are primarily responsible for health care, although some national health programs (including HIV/AIDS) are supported by central government funds.

- The public health infrastructure is vast, comprising 600 district hospitals, 4,000 community health centers, 25,000 primary health centers, 137,000 subcenters, and 160 medical colleges.

- Public health facilities suffer from poor management, low-quality service, and underfunding.

- There is large variance in health financing among Indian states, and the gap between rich and poor states regarding public resources for health is increasing.

- Sixty-five percent of Indian households go to private hospitals/clinics or doctors for treatment when a family member falls ill. Only 29 percent normally use the public health sector. Even among poor households, only 34 percent normally use the public health sector when family members become ill.

- Only 10 percent of Indians have some form of insurance, most of which are inadequate.

- The World Bank argues that the private health sector in India is unlikely to substantially improve the health and nutritional status of the poor. The private sector remains virtually unregulated and has highly variable quality of care.

- However, the government's response to HIV/AIDS, at least with regard to ART, is predicated on strong partnerships with the private sector.

Tuberculosis

- According to WHO, India continues to have the world's highest burden of TB. Each year, there are an estimated 2 million new TB cases in India, representing about one-third of the global TB burden. TB remains the country's leading cause of death; annually, about half a million Indians die because of TB.

- WHO estimates that 4.0 percent of adult (15-49) TB cases were HIV-positive during 2001. An estimated 3.4 percent of new cases that year were multidrug-resistant.

- TB is the most common opportunistic infection in India.

- India has had a national TB control program since 1962. In 1993, the government designed the Revised National TB Control Program (RNTCP). In 1997, DOTS was launched. In 2003, RNTCP reported that during the first quarter of that year, DOTS coverage increased to about 62 percent.

- In 2001, a joint action plan on HIV/AIDS and TB was created, though WHO notes that concrete strategies to link the two do not yet exist. WHO highlights other constraints in the TB system, including:

  → lack of confidence in government TB services due to poor services in the past
  → vacancies of key staff, especially laboratory technicians
  → poor quality services and poor results in the private sector
  → lack of full involvement of medical colleges
  → poor drug distribution to local level
  → ineffective lab quality control
  → lack of local electrical supply

Sexual and Reproductive Health

- UNFPA ranks India a category "A" country, meaning that it is furthest from achieving the sexual and reproductive health and rights goals of the International Conference on Population and Development (ICPD), held in Cairo in 1994. Group A countries have the greatest need for external assistance and the lowest capabilities for mobilizing domestic resources to close this gap.

Sexually Transmitted Infections

- Several studies indicate that herpes simplex virus-2 may be fueling the HIV epidemic in India.

Stigma and Discrimination

- HIV/AIDS-related stigma in India is severe. Stigma and discrimination are most often encountered in the health care setting and, to a lesser but still significant extent, in family and community contexts.

- AIDS stigma and discrimination in India are often a gendered phenomenon. Women are often blamed by their in-laws for infecting their husbands. In addition, HIV-positive women are more likely to take care of their husbands, neglecting their own health. After having been the primary caregivers for their husbands, many women are asked to leave the house of their in-laws after their husband die.

- Studies have also detailed how in addition to female sex workers, MSM and transgenders with HIV/AIDS experience double discrimination.

Gender

- Indian women's legal rights have generally not been implemented.
- India's sex imbalance is related to the comparative neglect of female health and nutrition, particularly during childhood. Other factors include increasing cases of sex-selective abortions (illegal but widespread); female infanticide; violence against women; *suttee* (wherein a widow is burned to death on her husband's cremation pyre, an illegal act); dowry murders (wherein a woman is killed due to insufficient gifts/money given by her parents at the time of her wedding); and discrimination in access to health care, nutrition, and employment opportunities.
- Despite socioeconomic changes, preference for sons continues in India.
- There are acute gender disparities in literacy and education.
- Forty-eight percent of ever-married women are not involved in making decisions about their own health care.
- There are significant and persistent gaps between women's legal rights and their actual ownership and control of land.
- About 20 percent of ever-married women have experienced beatings or physical mistreatment since age 15 and at least one in nine have experienced such violence in the last year. Most of these women have been beaten or physically mistreated by their husbands.
- Prior to HIV/AIDS, there were already strong gender biases in access to health care. Recent studies have found when both a husband and wife are infected with HIV/AIDS, men routinely receive care and treatment ahead of their wives. Lack of money and distance to treatment are also constraints to HIV-positive women's ability to access care.

Awareness and Knowledge of HIV/AIDS

- The National Baseline Behavioral Surveillance Survey (BSS) found that overall awareness of HIV/AIDS in India is 76 percent, though variance among states is significant. There are also major urban-rural differentials.
- Gender differences are also striking: overall, 82 percent of men surveyed were aware of HIV/AIDS, whereas among women, this figure was 70 percent.
- The BSS found that awareness among SWs, MSM, and IDUs is much higher than in the general population.

Misperceptions

- Overall, only 21 percent of general population respondents had no incorrect knowledge of HIV transmission. Among higher-risk groups, misperceptions were far less prevalent.

Perception of Risk

- Twenty-seven percent of MSM perceive themselves to be at very high risk of acquiring HIV. Among IDUs, 35 percent perceive themselves to be at very high risk of contracting HIV.

- Only 17 percent of sex workers perceive themselves to be at very high risk of contracting HIV/AIDS. Moreover, whereas 21 percent of brothel-based SWs perceived themselves at very high risk of HIV, only 14 percent of non-brothel-based SWs reported this level of perceived risk.

Sexual Behavior

- The general population BSS found that nearly 7 percent of adults surveyed reported having sex with a nonregular partner in the last 12 months. The difference between men and women, however, was dramatic: 12 percent of men versus only 2 percent of women report having had sex with a nonregular partner.

- Thirty-two percent reported consistent condom use with all nonregular partners. However, consistent condom use varied widely by state.

- Among MSM who had commercial sex in the month prior to the survey, 13 percent reported consistent condom use with commercial male partners. This contrasts dramatically with the 30 percent of MSM reporting consistent condom with a noncommercial male partner in the month prior to the survey.

- Among IDUs who reported sex with any nonregular partner in the 12 months prior to the survey, 12 percent reported using condoms consistently with these partners.

- Among sex workers, 50 percent reported consistent condom use with paying clients in the last 30 days (though the figure was higher for brothel-based [57 percent] vs. non-brothel-based [46 percent] SWs). However, among those who had sex with a nonpaying partner in the three months prior to the survey, only 21 percent reported using condoms consistently.

MSM

- Indian Penal Code 377, based on a 19th-century British law, criminalizes "the act of anal and oral sex performed either between two men or between a man and a woman."(There is currently a petition before the New Delhi High Court to repeal section 377.) Homosexuality is a taboo topic in India, and MSM are severely marginalized.

- Several studies have found that men report their male-to-male sexual activities as *masti* (fun or play) or to initiate sexual experiences, and do not equate them with sexual identities such as "gay," "bisexual," or "homosexual."

- Data on MSM and TG in Mumbai have found that 17 percent of men and 68 percent of TG were HIV-positive. For both men and TG, HIV was significantly associated with syphilis, hepatitis C, and herpes. Twenty-two percent of MSM were married, and 44 percent had visited female sex workers.

Sex Work

- Although sex work is legal in some states, concomitant activities including soliciting and brothelkeeping are penalized.

- Poverty and marital abandonment are two reasons why women enter sex work. Many girls and women are also coerced into it.

- Human Rights Watch reports that Indian SWs are treated with contempt and commonly subjected to violations of their fundamental rights by the police, both at the time of their arrest and while in detention. HRW also documents increasing violence against outreach workers and peer educators who work with SWs (and MSM).

- The national BSS found that 61 percent of female SWs were illiterate. The percentage of brothel-based SWs who were illiterate was much higher (77 percent) than the percentage of illiterate non-brothel-based SWs (51 percent).

- Mumbai has the country's largest brothel-based sex industry, with over 15,000 sex workers. Between 62 and 70 percent of sex workers in Mumbai are HIV-positive.

- SWs in Mumbai are controlled by madams, pimps, and moneylenders. Because of complex power dynamics, reaching SWs with HIV prevention services is a major challenge.

- In 1992, the All India Institute of Hygiene and Public Health launched a program to reduce the transmission of HIV in Sonagachi, a red-light district in central Calcutta. The project began with two key interventions: a health clinic and outreach by peer educators.

- In 1992, consistent condom use with clients in Sonagachi was 1 percent. By 1998, this figure had reached 50 percent. During the same period, syphilis prevalence among SWs covered by the project fell from 25 to 11 percent. In 1998, HIV prevalence among SWs was 5 percent.

- A key element in the Sonagachi has been the participation of SWs in the project.

Alcohol and Drug Use

Alcohol

- The BSS found that 16 percent of MSM respondents reported consuming alcohol every day. Fifteen percent of respondents regularly drank alcohol prior to sex. Intoxicating drug use was reported by nearly 13 percent of respondents.

- The BSS also found that 22 percent of SWs reported daily alcohol consumption. About 15 percent of SWs reported that they drink regularly before sex. Six percent of SWs reported ever trying any addictive drugs. Among them, almost one-third had injected drugs in the past 12 months.

Illicit Drug Use

- The major drugs being abused in India are opium, heroin, morphine, buprenorphine, diazepam, cannabis, pheniramine, promethazine, nitrazepam, spasmorproxyvon, codeine phosphate, cocaine, ecstasy, amphetamine type stimulants, antihistamines, and codeine-based cough syrup.

- Epidemiological surveys and rapid assessment studies show that polydrug abuse is growing.

- The health of many drug users is often poor. Many IDUs do not inject properly and as a result experience ulcers, abscesses, cellulitis, and throbophlebitis. Many are undernourished, and a substantial number have experienced a drug overdose.

- The BSS found that among IDUs, 45.2 percent injected two to three times a day, whereas 16.1 percent injected more frequently. Fifty-three percent of respondents reported injecting buprenorphine, followed by heroin (34 percent), crack (22 percent), dextroproxyphene (6 percent), tranquilizers (3 percent), and cocktail of heroin and cocaine (1 percent).

- The BSS found that 41 percent of IDU respondents reported sharing (i.e., using) previously used needles/syringes. About 83 percent of respondents who cleaned needles/syringes in the past month reported using cold water for cleaning; 9 percent used hot water, 2 percent used bleach or alcohol, and 1 percent boiled needles/syringes.

- The majority of drug users in India are male. However, use of drug treatment data may underestimate the number of female drug users, with women addicts a hidden population. There is great stigma attached to women seeking assistance for drug use, and women's ability to access treatment is hindered by their myriad responsibilities and workloads (e.g., child care). Drug abuse by women in the northeast is believed to be growing.

In a paper prepared for the WHO Commission on Macroeconomics & Health, David Bloom of Harvard and his colleagues note that:

> Existing data provide some indication that the relationship between poverty and HIV is growing stronger over time, both between and within continents. But it is not possible to infer causality from these data. That is, it is difficult to tell whether poverty causes AIDS or vice versa—or whether another variable, such as war, inadequate health, or poor education, explains the relationship....In sum, the link between economic status and AIDS is complex. While many micro level studies point to a significant link between poverty and HIV prevalence rates, macro data is unconvincing, particularly in terms of the causality of the link. Some risk factors for HIV, such as a high level of disposable income, are more

> prevalent amongst the rich than the poor. Others, such as lack of education, are more prevalent among the poor than the rich. Both groups exhibit the kind of mobility that appears to be associated with HIV transmission. On balance, it seems plausible that the rich are more at risk in the early stages of an epidemic, and that a combination of factors, including lack of education and other economic exigencies, put the poor at increasing risk as an epidemic progresses....The connection between AIDS and economics is complex, and drawing firm conclusions is complicated by the lack of concrete data in many areas. The poor appear to be most vulnerable to AIDS, but it is possible that this is not just because they are poor, but because of the interaction between poverty and other factors such as poor education, migration and weak health systems. Poverty reduction may decrease risk from the epidemic, but it is also possible that ill-planned development efforts will temporarily increase the risk that poor people face. [55]

Håkan Björkman, a senior adviser on HIV/AIDS to UNDP's Bureau for Development Policy, states that:

> HIV/AIDS is not strictly speaking a "disease of poverty" as it affects people at all income levels. But evidence from some countries at advanced states of the epidemic shows that new HIV infections disproportionately affect poor people, unskilled workers, and those lacking literacy skills—esp. young women in each of these categories. The relationship among poverty, gender, and HIV vulnerability has important policy implications.[56]

(NACO, Yale, Harvard, the London School of Hygiene & Tropical Medicine, and Delhi University are analyzing societal-level variables to determine the extent to which these variables can explain the different HIV rates across India's districts. These variables include GNI per capita; percentage foreign-born in the population; religion; income equality; male-female literacy gap; sex ratio; and percentage of male population in military forces. Once findings are available, they will be included here. <http://cira.med.yale.edu/research/indiadetermin.html>)

This section does not seek to demonstrate causality; rather, it aims to analyze key political economy and sociobehavioral contextual elements to highlight the range of sectoral policies and interventions that may affect or be affected by HIV/AIDS. In addition to the table of key HIV/AIDS and socioeconomic indicators that accompanies this analysis, readers may also want to consult the 2003 indicators related to progress on Millennium Development Goals, which are published by UNDP <http://www.undp.org/>.

Country Overview

India is a federal republic[57] comprising 35 states and union territories.[58] India, which has a secular constitution,[59] is the world's largest democracy.[60] Though it occupies only 2.5 percent of the world's land area, the country is home to about 16.9 percent of the world's population.[61] (Only China has a larger population.) India's mid-2003 population was 1.0686 billion.[62] In 17 states, the population exceeds 20 million; 10 Indian states have populations over 50 million.[63]

To provide a sense of the scale of the country, consider that India accounts for:

- 36 percent of the world's poor (i.e., those living on less than US$1/day)[64]

- 20 percent of the world's out-of-school children[65]
- 20 percent of the world's gender gap in elementary education [66]
- 23 percent of the world's child deaths[67]
- 25 percent of the world's maternal deaths[68]
- 22 percent of the world's unsupplied demand for reproductive health services[69]
- 30 percent of the world's deaths from poor access to water and sanitation[70]
- 25 percent of deaths from indoor air pollution [71]
- 50 percent of the world's hungry[72]

Twenty-eight percent of India's population lives in urban areas (comprising about 200 towns and cities).[73] The rural population spans about 550,000 villages. Having been invaded numerous times over thousands of years, India has absorbed many influences. Despite that religious and ethnic tensions persist, India is remarkably diverse in terms of language, ethnicity, religion, and culture.[74]

Religion, caste, and language are major determinants of sociopolitical organization. There are 18 official languages, of which Hindi is the most widely spoken. The predominant ethnic group is Indo-Aryan (72 percent), followed by Dravidian (25 percent). About 80 percent of the population is Hindu (855 million); 12 percent is Muslim (about 128 million Muslims), 2.3 percent Christian (25 million) and 1.9 percent Sikh (20 million) (other religious groups include Jains, Buddhists, and Parsis).[75]

The caste system reflects Indian occupational and religiously defined hierarchies. Traditionally, there are four broad categories of castes (*varnas*), including a category of outcastes, earlier called "untouchables" but now commonly referred to as *dalits*. Within these broad categories, there are thousands of castes and subcastes, whose relative status varies by region. Despite economic modernization and laws countering discrimination against the lower end of the class structure, the caste system remains an important source of social identification for most Hindus and a major factor in politics.[76]

In recent decades, India has significantly improved the well-being of its people.[77] During the 1990s, the percentage of the population living below the national poverty line fell from 36 to 26 percent. The 1990s saw greater openness, transparency, and competition, as well as measures to devolve more power to state and local governments. Constitutional amendments in 1993 provided a legal foundation to local governments and sought to strengthen participatory processes at the local level. These amendments included a mandatory requirement that one-third of local representatives be women, and that seats be reserved for scheduled castes and tribes in proportion to their population.[78] India has become much more integrated with the world economy. [79]

Despite achievements, however, the scope of poverty continues to be enormous. Vast disparities in per capita income among and within India's states persist. [80] A high proportion of the population—mostly the poor, women, and scheduled tribes and castes—continues to suffer and die from preventable infections, pregnancy and childbirth-related complications, and malnutrition.[81] Although literacy and school enrollments are rising, gender disparities remain acute.[82]

Postcolonial Period

After about 100 years of British colonial rule, India became a dominion within the Commonwealth in August 1947, with Jawaharlal Nehru as prime minister. Hostility between Hindus and Muslims led the British to partition British India and create East and West Pakistan, where there were Muslim majorities. India became a republic within the Commonwealth in January 1950. [83]

After independence, the Congress Party, the party of Mahatma Gandhi and Jawaharlal Nehru, dominated Indian politics until the late 1980s. In 1966, Nehru's daughter, Indira Gandhi, became prime minister. In 1975, as India faced deepening political and economic problems, Gandhi declared a state of emergency and suspended many civil liberties. Seeking a mandate at the polls for her policies, she called elections in 1977, but was defeated by Moraji Desai, who headed the Janata Party, a consortium of five opposition parties. [84]

In 1979, Desai's government collapsed. Charan Singh formed an interim government, which was followed by Indira Gandhi's return to power in January 1980. In October 1984, Indira Gandhi was assassinated, and her son, Rajiv, was chosen by the Congress Party to take her place. His government was brought down in 1989 by allegations of corruption. Governments led by V.P. Singh and Chandra Shekhar followed. [85]

Since the 1980s, the power of the Congress Party has been declining and has led to the development of religious, regional, caste-based, and nativist (e.g., Shiv Sena in Maharashtra State) parties. While this phenomenon has broadened the political spectrum and permitted more voices to be heard, it has also led to greater government instability and the prevalence of coalition politics, rendering implementation of reforms difficult. [86]

In the 1989 elections, although Rajiv Gandhi and the Congress Party won more seats than any other single party, they were unable to form a government with a clear majority. The Janata Dal, a union of opposition parties, was able to form a government with the help of the Hindu-nationalist Bharatiya Janata Party (BJP) on the right and the communists on the left. This loose coalition collapsed in November 1990, and the government was controlled for a short period by a breakaway Janata Dal group supported by the Congress Party, with Chandra Shekhar as prime minister. That alliance also collapsed, resulting in national elections in June 1991. [87]

In May 1991, while campaigning in Tamil Nadu, Rajiv Gandhi was assassinated, apparently by Tamil extremists from Sri Lanka. In the June elections, Congress won 213 parliamentary seats and formed a coalition, returning to power under the leadership of P.V. Narasimha Rao. This Congress-led government, which served for five years, initiated a process of economic liberalization (discussed below).[88]

The final months of the Rao-led government in spring 1996 were marred by several major political corruption scandals. The BJP emerged from the May 1996 national elections as the single-largest party but without a majority of Parliament. Under Prime Minister Atal Bihari Vajpayee, the BJP coalition was in power for 13 days. To avoid another round of elections, a 14-party coalition led by the Janata Dal emerged to form a government known as the United Front. The Congress Party withdrew its support from the United Front in November 1997. New elections in February 1998 brought the BJP the largest number of seats in Parliament but not a majority. In March 1998, the president inaugurated a BJP-led coalition government, with

Vajpayee again serving as prime minister. In May 1998, the government conducted a series of underground nuclear tests, which led then U.S. President Bill Clinton to impose economic sanctions on India pursuant to the 1994 Nuclear Proliferation Prevention Act.[89]

In April 1999, the BJP-led coalition government fell apart, leading to new elections in September. The National Democratic Alliance—a new coalition led by the BJP—gained a majority to form the government, with Vajpayee as prime minister in October 1999. [90]

The National Democratic Alliance government led by the BJP remains in power. However, the BJP has lost several state-level elections to Congress, which now rules in 14 states. The BJP rules in just four states, as a junior member of coalitions in another two, while its allies rule three. [91]

Economy

About 63 percent of the Indian workforce is in the agricultural sector, which accounts for 25 percent of GDP. Major agricultural products include wheat, rice, coarse grains, oilseeds, sugar, cotton, jute, and tea. Twenty-two percent of the population works in industry and commerce (representing 29 percent of GDP); major products include textiles, processed food, steel, machinery, transport equipment, cement, aluminum, fertilizers, mining, petroleum, chemicals, and computer software. Of the remaining workforce, 11 percent are in services and government and 4 percent in transport and communications. India's natural resources include coal, iron ore, manganese, mica, bauxite, chromite, thorium, limestone, barite, titanium ore, diamonds, and crude oil. Major exports are agricultural products, engineering goods, precious stones, cotton apparel and fabrics, handicrafts, and tea.[92]

Structural Adjustment

In the early 1990s, India was facing a severe financial crisis. During 1990-91, the gross fiscal deficit of the government (central and states) reached 10 percent of GDP, and the annual inflation rate peaked at nearly 17 percent in August 1991. Given that foreign currency reserves had fallen to US$1 billion by mid-1991, India utilized emergency measures to avoid defaulting on its immediate debt service obligations and the financing of imports.[93]

In 1991, India embarked on a structural adjustment program, including liberalizing foreign investment and exchange regimes, significantly reducing tariffs and other trade barriers, and reforming and modernizing the financial sector. The reform process has had some highly beneficial effects on the Indian economy, including higher growth rates, lower inflation, and significant increases in foreign investment. [94] Real GDP growth was 6.8 percent during 1998-99, an increase from 5 percent during 1997-98.[95] Since 1991, foreign direct investment has risen significantly.[96] The IT sector has shown tremendous growth in recent years, with revenues estimated at US$8 billion in 2000.[97]

However, foreign direct investment, though higher than in the early 1990s, is still very low compared to other large developing countries (US$2.5 billion per year compared to US$32 billion in Brazil and nearly US$40 billion in China, during the second half of the 1990s).[98] GDP

growth has slowed; during 2000-01, it averaged 5.4 percent,[99] far short of the government target of 8 percent.[100] Large fiscal deficits remain a major obstacle.[101] From 1998-99 to 2001-02, the general government deficit increased from 8.8 to 10.3 percent of GDP. During this period, general government debt rose from 68 to 81 percent of GDP.[102]

The World Bank notes that "structural reforms have moved at a mixed pace," and that a series of scandals in 2001 related to corruption in defense procurement, stock market manipulation, and mismanagement of the country's largest state-owned mutual fund "may have distracted the central government from its ambitious reform agenda."[103] The Bank goes on to note that the both the central and state governments are facing a "deteriorating fiscal situation."[104]

Most important, despite the structural reforms of the 1990s, vast income disparities between and within India's states persist and poverty reduction remains paramount (see Poverty section below).[105] Per capita income has increased, from US$390 in 1990 to US$380 in 1995 to US$450 in 2000.[106] In 2001, gross national income (GNI) per capita (terminology that has replaced GDP per capita) was US$480.[107] This figure is somewhat higher than that for the South Asia region (US$450) and for all low-income countries (US$430). However, globally, India's GNI per capita ranks 162 out of 208 countries.[108]

In a July 2003 report, the World Bank itself noted that structural adjustment had led to "uneven" progress in India and that government attention to inequality is critical:

> Development progress has been steady, but uneven. It has been uneven across indicators of living standards, with notable progress in some areas, but little or no progress in others. Maternal and under-five mortality, for instance, has hardly improved, while the new threat of HIV/AIDS is spreading quickly. And unemployment, although still low by international standards, has increased. Progress has also been uneven across regions. There is evidence of divergence in per capita incomes across states, with richer states increasing incomes faster than poorer ones. As a result, poverty has become increasingly concentrated in the country's slower growing states.[109]
>
> Weaknesses in service delivery are of special concern in the social sectors: education, health and social safety nets. While India has made substantial progress towards achieving better social indicators over the past two decades, the rates of improvement have not been sufficient to achieve the targets set in the Tenth Plan or even the less ambitious Millennium Development Goals (MDGs).[110]

Spending on Health

Structural adjustment has sought to shift more health care delivery to the private sector. Public spending on health, as a percent of GDP, did not rise during the 1990s (0.9 percent), whereas private expenditure on health now accounts for 4.0 percent of GDP, or 81.6 percent of all health spending.[111]

Dr. Brijesh Purohit of the Administrative Staff College of India states that:

> In the period prior to liberalization, between 1974–82, grants to the States from Central government for the health sector comprised 19.9 percent of the States' health expenditure. However, following liberalization, this component of central grants fell to 5.8 percent (in 1982–89) and further to 3.3 percent (in 1992–93). This decline is most noticeable in the case of specific-purpose central grants for public health and disease control programs. The central component for the former of these (public health) dropped from 27.92 percent (in 1984–85) to 17.7 percent (in 1992–93). The latter in the same duration declined from 41.47 to 18.50 percent. The other component of health expenditure, family welfare, also faced a decline of central grants, from 99 to 88.59 percent of the States' health expenditure....This falling share of central grants had a more pronounced impact on the poorer states, which found it more difficult to raise local resources. The likelihood of increasing state expenditure on [the] health care sector is further limited in future with the continued pace of reforms.[112]

As discussed in the Health section below, there is an increasing gap between rich and poor states with regard to public resources available for health, with resultant disparities in health outcomes.[113] Indeed, in July 2003, the World Bank noted that India's "progress in health indicators has been slowing down precipitously."[114] Concurrently, the Bank believes that "the private health sector in India is unlikely to substantially improve the health and nutritional status of the poor."[115] In its most recent health review of India, the Bank called for more explicit targeting of the poorest sections of society, including exploring the "viability of providing the poor with some insurance against catastrophic health events." [116]

Dr. Nirupam Bajpai of Harvard's Center for International Development believes that India's overall government spending must decline substantially to achieve macroeconomic stability and long-term rapid growth; however, Bajpai argues for an *increased* role for government in health, particularly vis-à-vis major infectious diseases, including HIV/AIDS:[117]

> The government needs to give greater attention to, and provide larger resources for, education and health. In the sphere of raising the literacy levels and providing greater access to basic health services, the state governments are required to play a much more enlarged role.[118]

> Both the federal and state governments have a particularly urgent and critical role in spreading literacy and access to primary health care to all the Indians so that they can all participate in a meaningful manner and benefit fully from India's economic transformation....The federal government needs to undertake aggressive public health campaigns to address major infectious diseases (pneumonia, diarrheal diseases, and malaria) and especially the incipient AIDS epidemic, which now threatens India with tens of millions of cases unless properly addressed.[119]

> The reforms implemented so far have helped India attain 6 plus percent growth, however, should India be able to implement these remaining reforms and re-orient governmental spending away from inessential expenditures towards high priority areas of health and education and infrastructure development, then it is very likely to attain and sustain even higher rates of economic growth.[120]

Certainly, a major concern is that as the central government reduces its role in health care delivery, with decentralization and privatization to fill the gap, safety nets for the poor (especially those in rural areas and women) are being threatened. This scenario is particularly worrisome as the ability of state governments to provide basic health care is imperiled, given their current and severe fiscal problems.[121] (Further discussion in Health section below.)

Poverty

There has been intense debate regarding recent poverty trends in India. Statistical problems in recent household surveys render it difficult to ascertain precisely poverty dynamics during the 1990s. The emerging consensus appears to be that there was some decline in poverty during the 1990s, but the size of the decline remains unclear.[122]

The official estimates are that the national poverty rate fell from 36 percent of the population in 1993-94 to 26 percent by the end of the decade. Some studies, however, have found that poverty fell at a somewhat lower rate, from 36 to 29 percent.[123] Using international poverty markers, in 1997, 44.2 of the population lived on less than US$1 a day, and 86.2 percent lived on less than US$2 a day (i.e., the percentages of the population living on less than US$1.08 a day and US$2.15 a day, respectively, at 1993 international prices [equivalent to US$1 and US$2 in 1985 prices, adjusted for purchasing power parity]).[124]

Richer states grew faster over the 1990s and may have also been more successful at reducing poverty.[125] Poverty is increasingly concentrated in the poorest states, particularly Bihar, Uttar Pradesh, Orissa, and Madhya Pradesh (see table 6).[126]

Table 6. Percent of Population below National Poverty Line in Orissa, Bihar, Madhya Pradesh, and Uttar Pradesh, 1999-2000

State	Population, 2001 (millions)	Percent of Population below National Poverty Line, 1999-2000
Orissa	36.7	47.2
Bihar	82.9	42.6
Madhya Pradesh	60.4	37.4
Uttar Pradesh	166.1	31.1

Sources: Census of India. Census of India 2001: Provisional Population Totals. New Delhi: April 4, 2001 <http://www.censusindia.net/results/provindia1.html>; Nirupam Bajpai. A Decade of Economic Reforms in India: The Unfinished Agenda. Harvard Center for International Development Working Paper no. 89. Cambridge, Mass.: April 2002 <http://www2.cid.harvard.edu/cidwp/089.pdf>

Nirupam Bajpai of Harvard notes that:

> There is no doubt that geography heavily influences economic performance....The [Indian] interior has done much less well [than coastal states]. GDP growth in the hinterland has lagged behind the coastal states by several percentage points per year. There is a vast amount of economic reform that can be carried out to improve conditions

> in rural India, especially in the Gangetic valley....In particular, Bihar, Uttar Pradesh, and Orissa are in desperate need of reform.[127]

Chronic poverty is disproportionately high among casual agricultural laborers, scheduled castes (formerly called "untouchables"), and scheduled tribes (indigenous groups).[128] In rural areas, the incidence of poverty is highly correlated with lack of access to land.[129]

According to a 2001 report of the World Food Program:

> India has achieved self-sufficiency in food grain production and currently holds substantial stock in reserves. Yet more than 200 million people remain hungry and chronically food insecure, and the statistics on hunger and deprivation reveal the depth of vulnerability faced by women and children. Although India has one of the largest targeted food assistance programs in the world, the effectiveness of that program has been limited.[130]

The primary cause of food insecurity is poverty. Chronic, limited access to food results from low income, poor access to basic agricultural inputs, low farm incomes, and few alternative sources of rural income. Transitory food insecurity results from seasonal fluctuations in food availability and access, as well as from natural disasters.[131]

Since the early 1950s, the Government of India and most state governments have implemented direct antipoverty programs providing wage employment, productive assets (such as land or animals), training, credit, and food security to the poor. For the most part, these programs have been poorly targeted, inefficiently managed, and highly fragmented.[132] There has been very slow progress on social justice and equality for the poor, particularly vis-à-vis minorities, scheduled castes, and scheduled tribes. Court decisions on behalf of the poor may go unenforced, whereas the police often act for the rich (or at least are perceived to do so). [133]

Governance

Decentralization

As mentioned above, constitutional amendments in 1993 provided a legal foundation to local governments and sought to strengthen participatory processes at the local level. These amendments included a mandatory requirement that one-third of local representatives be women, and that seats be reserved for scheduled castes and tribes in proportion to their population.[134]

However, commitment to decentralization has varied by state, as has capacity to strengthen local government. Although a new political structure of local, mid-level, and district councils exists, the authority and resources of these entities may be minimal. In many states, although the district remains the basic unit of administration, the state legislature and administrative structure, subject to limitations imposed by the central government, still control service delivery, such as the availability of health clinics and schools. In Andhra Pradesh, for example, little authority has been turned over to local councils.[135]

In theory, as women and scheduled castes gained a voice on *panchayat* councils, these councils were expected to advocate for propoor and gender-sensitive expenditures. However, experience on the ground is mixed. One study found that although decentralization in Karnataka has increased rates of political participation, enhanced accountability, and rendered government institutions more responsive to citizens, the net effect in two of the state's districts has been to *increase* the share of resources allocated to well-off groups at the expense of poorer groups; this is because local elites now control the councils' agenda.[136] How decentralization is realized on the ground has import for responding to HIV/AIDS, particularly with regard to addressing the needs of vulnerable and marginalized groups. Moreover, propoor and gender-sensitive expenditures affect HIV/AIDS directly (prevention, care, and treatment) and indirectly (socioeconomic investments in health, education, etc.).

Corruption

Corruption in India is systemic.[137] Transparency International states that corruption pervades "every aspect of economic and political life."[138] TI goes on to state that:

> The role of the corporate sector has been widely identified as fuelling traditions of impropriety in South Asian states and contributing to a vicious cycle of public and private sector problems: the chronic region-wide failure to pay taxes, poor public service delivery and inadequate enforcement of financial regulations. Banks and state-sponsored finance, insurance and pension companies have been the chief targets of private sector corruption.[139]

In 2001, there were numerous, high-visibility allegations of corruption leveled at the ruling coalition led by Prime Minister Vajpayee, including the Tehelka.com, Unit Trust of India, and Tata Finance Ltd. scandals.[140] Pervasive corruption highlights the risk of "leakage" from funds allocated to HIV/AIDS, as well as the common practice of paying bribes to expedite action on projects. With decentralization, states are increasingly responsible for addressing corruption,[141] though whether they have adequate resources (in addition to political will) to do so is questionable, given the fiscal crisis described above.

Judiciary

Unable to persuade the executive or legislative branches to take action, many Indian NGOs are increasingly using public interest litigation (PIL) to defend rights.[142] Some of these cases have involved the rights of PWHA, as the Human Rights section below discusses.

PIL cases go directly to the high courts or the Supreme Court. Although the courts are generally sympathetic to rights cases, their commitment is erratic. For example although the need for extensive police reform has been documented by numerous Indian human rights groups and by India's official National Human Rights Commission, [143] the courts do little to stem the problem.[144]

The Indian judicial system is impeded by:

- enormous backlogs (about 28 million cases)
- extremely slow processing times (five to ten years or more if appeals and applications for execution are filed)
- some degree of corruption at the state level
- low level of knowledge about new aspects of the law (e.g., new commercial legislation, arbitration)
- weak enforcement of decisions[145]

These delays have serious human rights implications for the poor, who cannot afford to post bail. About 1 million citizens are in jail pending a charge or trial. In Delhi's Tihar jail, of the 11,000 inmates, only 2,000 are convicted criminals; the remaining 9,000 are all awaiting processing.[146] The very poor do not use the courts, as they do not have the financial resources nor the time (litigants must appear each time a case is scheduled or rescheduled). There are also customary constraints, wherein members of lower castes do not challenge members of higher castes. Many Indians do not know that they have certain rights or that redress is an option.[147]

The above scenario has wide import for the human rights of PWHA, as well as for police harassment and abuse of SWs, MSM, and the staff of HIV/AIDS projects that work with them.[148] (See the Human Rights section for detailed discussion.)

Freedom of Information

In India, a national freedom of information bill passed the committee stage in March 2002, but the amendments introduced were severely criticized by civil society activists as undermining the effectiveness of the proposed legislation. Karnataka, Kerala, Goa, Maharashtra, Rajasthan and Tamil Nadu, and Andhra Pradesh have enacted their own access to information laws. However, again, activists raised concerns that loopholes were deliberately inserted into state legislation to enable officials to deny access to information when convenient. Many state laws also fail to include penalty clauses for not providing information.[149]

Violence

See also the Human Rights section below.

Over the past several years, India has experienced a significant increase in organized and random violence, particularly communal, ethnic, tribal, and caste-based violence. A 1998 study found that about half of the country's over 600 districts faced some form of unrest, whether communal violence, insurgency, or gang rule.[150]

The political mobilization of religious communities has led to a scenario in which politicians exacerbate differences between groups to consolidate support among their own group. A major factor has been the rise in Hindu nationalism since the early 1980s. Hindu nationalist organizations include the largest student organization in India, the largest trade union in the country, the ruling Bharatiya Janata Party, the VHP (which concentrates on strengthening Hindu identity and unity and which led the Ayodha temple movement), and the Bajrang Dal (a paramilitary group). All these groups have facilitated an environment that gives rise to violence against religious minorities (Muslim, Christian).[151]

In January 2001, Gujarat sustained the most severe earthquake in India over the last 50 years. The earthquake killed an estimated 16,480 people. In the worst-affected areas, 95 percent of buildings were destroyed, and almost 1 million people lost their homes.[152] Following the earthquake in 2002, there was an outbreak of ethnic violence. The International Federation of the Red Cross noted that the prolonged rioting severely hampered rehabilitation efforts. Although the situation was gradually improving, the terrorist attack on the Hindu Akshardham temple in the state capital of Gandhinagar in September 2002, in which 31 people were killed and 100 injured, led to further violence between Hindus and Muslims.[153]

The "Seven Sisters" — the northeastern states of Assam, Manipur, Tripura, Nagaland, Mizoram, Meghalaya, and Arunanchal Pradesh — encompass 200 ethnic groups. All these states are plagued by some degree of civil conflict. In Assam, for example, the influx of migrants from West Bengal and of illegal immigrants from Bangladesh has generated communal tensions (native Assamese are Hindu). There are 43 insurgent groups in Assam; the United Front for the Liberation of Assam is the largest and controls portions of the state. Ongoing conflicts have led to the deaths of civilians, security forces, and members of the UFLA. In Manipur, 18 ethnic insurgent groups are active. [154]

India's relations with Pakistan are influenced by the centuries-old rivalry between Hindus and Muslims, which led to Partition in 1947. The principal source of contention has been Kashmir. In 1947, Kashmir's Hindu Maharaja chose to join India, despite that a majority of his subjects were Muslim. India maintains that his decision and subsequent elections in Kashmir have rendered the state an integral part of India. Pakistan asserts Kashmiris' rights to self-determination through a plebiscite in accordance with an earlier Indian pledge and U.N. resolution.[155]

A recent report undertaken for USAID notes that:

> Obviously, Kashmir is the biggest threat to regional security in South Asia. India is not going to release Kashmir, and Pakistan is unlikely to give up its support for Kashmiri independence or incorporation into Pakistan itself...The human rights abuses on the government side, just as on the militant side, are profound and serious. They include targeted assassinations, custodial killings, torture and disappearances. [156]

Ethnic violence, among other things, can spur significant population dislocation and regroupings of family units, which entail exposure to new sexual networks and thus may heighten vulnerability to HIV (see Population Mobility section below). It also affects state and local government's ability to deliver essential services.

Military Spending

Violence within India, as well as the tensions with Pakistan, also means that significant resources are directed to the military. Military expenditures as a percent of GDP decreased slightly during the 1990s, from 2.7 percent in 1990 to 2.5 percent in 2001. By comparison, in 2000, India's public expenditure on health was 0.9 percent (a figure that did not change during the 1990s).[157] (According to UNDP's *Human Development Report 2003*, in addition to India, the governments

of 41 other countries [for which comparable data were available] also spent more on the military than on health during 2000-01.[158]) (See also the accompanying table of key HIV/AIDS and socioeconomic indicators for comparative indicators on the military, arms imports, etc.)

Nevertheless, more recent figures on military spending, which may have increased after events in 1999 and 2001, have not been released. Given India's ongoing tensions with Pakistan, the events of 9/11/01, and a terrorist attack on the Indian Parliament in December 2001,[159] one might infer that military spending will remain high.

Human Development

One method of tracking human development in India is to analyze trends in its Human Development Index. The HDI was created by UNDP to measures average achievements in life expectancy at birth; adult literacy and combined primary, secondary, and tertiary gross enrollment ratios; and GNI. An HDI of 0.800 or above = high human development; 0.500 - 0.799 = medium human development; less than 0.500 = low human development. India's human development index has been increasing, from 0.407 in 1975 to 0.473 in 1985 to 0.545 in 1995 to 0.577 in 2000.[160] In 2001, India's HDI had reached 0.590.[161]

However, these improvements mask enormous inequalities within the country. For example, in 1997, the richest 20 percent of the population represented 46.1 percent of income/consumption, where the poorest 20 percent of the population represented just 8.1 percent of income/consumption.[162] The mortality, malnutrition, and fertility rates of the poorest 20 percent of Indians are over double those of the richest quintile.[163] Broadly, human development indicators are better for smaller states and union territories.[164] (More detail on the Health section below.)

During the 1990s, India's public expenditures on education rose from 3.9 to 4.1 percent of GDP.[165] In education, India has steadily raised primary enrollment rates since independence and today has the world's second largest education system after China, with 108 million children ages six to 10 attending primary school. However, over 25 million primary school age children are *not* in school. Children from poorer families are at a greater disadvantage. The dropout rate for the poorest households is about four times that of the richest ones. There are large gaps in access to education; quality of education; and educational attainment according to gender, social class, and region.[166] (See the Gender section below.)

Health is discussed in a separate section below.

Population Mobility

There is enormous population mobility in India and throughout South Asia. Mobile populations include

- permanent and seasonal labor migrants within the country
- those entering and leaving India for work-related reasons
- people dislocated by drought, floods, or other disasters
- people dislocated by conflict

- refugees seeking asylum in India
- transport workers
- traders/vendors
- hotel and tourism workers
- tourists (e.g., temple tourists)
- prisoners
- military personnel
- sex workers
- trafficked persons
- MSM

India has a long history of mobility, with various groups having invaded the country over the last centuries.[167] During colonial rule, the British moved segments of the population to Sri Lanka, Malaya, and other countries to work on plantations. Movements of unskilled workers increased during the 1970s, including to the Gulf states, which sought cheap labor. [168] According to the 1993 National Sample Survey in India, 24.7 percent of the population had migrated, either within India, to neighboring countries, or overseas. [169] Applying this percentage to the mid-2003 population of 1.069 billion,[170] about 264 million Indians are mobile.

Labor migration is a common livelihood strategy in India. Poverty and lack of economic opportunity pushes many to migrate to urban and manufacturing areas for jobs in the formal or informal sectors. Other reasons include the desire to leave more traditional rural communities for urban areas. Some women may be forced to migrate, as they are perceived as a burden to their family and as a reliable source for remittance income. Some women may also be fleeing domestic violence. [171] , [172] Low-skill female migrants are particularly vulnerable to acquiring HIV, as discussed below.[173] India is also a country of origin, transit, and destination for thousands of trafficked persons.[174]

The communities from which migrants emigrate are vulnerable to HIV for several reasons. While their male partners are away for long periods (and particularly if they do not send regular remittances), some women may rely on sex work to supplement household income. Returning migrants with HIV, many of whom do not know their status, may infect their wives or other sex partners in the home community. [175]

Intracountry Migration

India's second National Family Health Survey (NFHS-2), conducted during 1998-99, found that the national sex ratio was 957 females for every 1,000 males in rural areas but only 928 females for every 1,000 males in urban areas. Among the rural population ages 20-29 and 50-59, the sex ratio rises even further, to 1,075-1,221 women for every 1,000 males. These data suggest that many more men than women have migrated to urban areas.[176] Urbanization has resulted in large slum populations.[177] (India’s first National Family Health Survey was conducted in 1992–93. The Ministry of Health and Family Welfare subsequently appointed the International Institute for Population Sciences [IIPS] in Mumbai to initiate a second survey [NFHS-2], which was conducted during 1998–99. The NFHS-2 sample covered over 99 percent of India’s population living in (then) 26 states; it did not cover union territories. NFHS-2 was conducted with financial

support from USAID and UNICEF. Technical assistance was provided by ORC Macro and the East-West Center.[178])

At the XIV International AIDS Conference in Barcelona in July 2002, numerous Indian and international researchers highlighted the vulnerability of migrant populations. For example:

Maharashtra

- Researchers from the People's Health Organization report that 29 percent of men in Mumbai are single; of them, most are migrants working in the navy, construction, fishing, or other sectors/industries.[179]

- The International Institute for Population Sciences in Mumbai examined prevalence and correlates of risk-taking behaviour among migrant workers in two cities: Mumbai and Surat. Their 2000-01 survey found that far fewer migrants have knowledge of STIs than of HIV/AIDS. Prevalence of risk-taking behaviour (e.g., alcohol consumption, visits to SWs, and extramarital relationships) was much higher among migrants living either alone or with friends, versus those living with their own family or staying with other families. [180]

- Mumbai Districts AIDS Control Society reports that about 60 percent of the city's population lives in slums. To examine attitudes and behaviours regarding HIV/AIDS and sexuality, researchers conducted a survey among 1,373 males and 1,631 females ages 15-24 residing in one of Mumbai's slums. Among all respondents, 63 percent had educational attainment up to grade 7. About one-quarter were married; average age at marriage for males was 20.0 and for females, 17.8. Almost 90 percent of respondents had not heard of STIs (89.1 percent).[181]

Kerala

- Search for employment opportunities leads many in Kerala to migrate, both to other Indian states as well as to the Gulf countries. Concurrently, a thriving tourism industry is spurring much movement within the state. [182]

- Though Kerala has low HIV prevalence, vulnerability is high, given large-scale out- and in-migration. India HIV/AIDS Alliance and Kerala State Management Agency state that 80 percent of reported AIDS cases in the state are "migration-related" (abstract did not define this term). [183]

Rajasthan

- The FXB Rajasthan Society and FXB India Society are very active in the state. In a baseline survey of 13 villages in rural/remote areas of Rajasthan, FXB found that all males who tested HIV-positive were either migrant workers or had a history of migration. The three adult females who tested positive were wives of migrant workers. [184]

- FXB examined the sexual histories of HIV-serodisconcordant couples with a past history of migration who had visited the FXB Center in Jodhpur from July to December 2001 (these

data were originally collected through a confidential and voluntary interview). Of the total 43 individuals newly diagnosed with HIV, there were 17 HIV-serodisconcordant couples. All 17 males had a history of migration, whereas none of the 17 females did so. Ten males of the 17 had a history of paid casual sex without protection. The remaining seven males either had died or had not wanted to discuss casual sex; their female partners reported no extramarital sexual relations. None of the 17 women reported a history of unprotected casual sex. FXB concluded that migrant workers—who are usually male—are exposed to HIV when away from home and appear to be the primary factor with regard to their spouses' HIV infection.[185]

Gujarat

- Gujarat has identified and is working with several subpopulations with particularly high vulnerability to HIV; these include seafarers, industrial workers, prison inmates, and diamond cutters. (Discussion of prison interventions in Gujarat is found below.) Currently, the Gujarat State AIDS Control Society and its partners are managing about 50 targeted interventions among high-risk groups across all districts. Slums interventions, for example, cover occupational groups such as construction workers, daily wage earners, rag pickers, and other low- or no-skill self-employed workers.[186]

Sex Workers

India's first national behavioral surveillance survey (BSS) was conducted in 2001 and is discussed in depth below. It found that almost 25 percent of sex workers were engaged in sex work before they came to the city/town where the BSS interview was carried out. One-third of SW respondents reported traveling to other places for sex work.[187]

Prisoners

Indian Penal Code 377, based on a 19th-century British law, criminalizes "the act of anal and oral sex performed either between two men or between a man and a woman."[188] (There is currently a petition before the New Delhi High Court to repeal section 377. [189]) Thus, distributing condoms inside prisons is illegal.[190] However, actors from government and civil society acknowledge the existence of high-risk sexual activities, both coercive and consensual, in prisons and are designing related interventions. The context of prisoners' vulnerability to HIV/STIs is related to lack of awareness of these diseases, lack of access to preventive interventions, overcrowding, poor sanitary conditions, loneliness, lack of social control, lack of entertainment, and separation from family.[191] A summary of selected Barcelona abstracts from 2002:

- Hindustan Latex Limited has established a Technical Resource Unit under agreement with the Andhra Pradesh State AIDS Control Society to manage targeted interventions among vulnerable populations, including prisoners. The prison program was initiated through discussions with the state's senior prison officials. Four prisons were initially selected and a rapid assessment of needs conducted. A proposal was developed with prison authorities and a contract signed for the intervention. Committees, which included prisoners, were formed to oversee project implementation. The intervention focuses on behaviour change communication sessions, STI care and counseling, peer education, and a referral system for partner treatment. Also, the project is distributing condoms in prisons. The intervention has

been scaled up to include eight more prisons. A statewide rapid assessment survey was conducted and identified 30 new prisons for inclusion in the program. Raising awareness among and including key stakeholders—such as prison officials and inmates—in the program was critical, as were needs assessments and a phased approach.[192]

- Gujarat has 10 major prisons, all of which are overcrowded, with large number of detainees awaiting trial.[193] In 1998, the Gujarat State AIDS Control Society piloted a behavior change communication intervention in the Surat District Prison. Obtaining prison officials' approval as well as involvement in implementation were major challenges. However, by 2001, the program was working in nine prisons across the state.[194] At each prison, activities are implemented in collaboration with prison authorities. Exit counseling and linkages with prisoners after release is crucial. The program has also found that linkages with other recreational, spiritual, or physical entertainment have a catalytic effect.[195]

Truck Drivers

India's national highway network of 52,000 km spans 35 states. [196] There are 2 to 5 million truckers and helpers on Indian transport routes. The extended periods of time that they spend away from their families place them in close proximity to "high-risk" sexual networks, and often results in their having an increased number of sexual contacts. [197]

There is wide variation in the prevalence of STIs/HIV and in sexual behavior among Indian truckers. During 2000-01, FHI and local NGOs PREPARE, BPWT, and VOICE conducted STI/HIV prevalence surveys among male truckers in West Bengal (east India) (n=335), Andhra Pradesh (south) (n=375), and Haryana (north) (n=410. Most of the truckers were from the states in which they were surveyed. They found that HIV prevalence patterns in truckers tended to mirror the local epidemics. In east India, prevalence of HIV was 2.99 percent; syphilis: 6.3 percent; and gonorrhea: 1.8 percent. In the north, the HIV prevalence among association-based truckers was 1.9 percent; syphilis: 7.2 percent; and gonorrhea: 4.8 percent. Prevalences of HIV and syphilis were higher among truckers from halt points in the north: HIV: 6.9 percent; syphilis: 8.4 percent. In south India, HIV prevalence was 10.9 percent; syphilis: 9.6 percent; and gonorrhea: 7.5 percent.

About 27 percent of truckers from the east, 49.4 percent from the south, and 29 percent of association-based and 45.3 percent f truckers from halt points from the north reported having sex with female sex workers or nonregular partners in the preceding year. Reported condom use during last sex with FSW/NRP was 30.4 percent in the east, 57.2 percent in the south, and 16.6 percent among association-based and 12 percent among halt point based truckers in the north.[198]

According to the BSS, 18 percent of truck drivers in the western part of the country reported intercourse with a sex worker in the last year; 21 percent in the south, 25 percent in the east, 40 percent in the northeast, 48 percent in the north, and 49 percent in the central region. Truck drivers were the largest client segment of female sex workers, ranging from 62 percent in the west to 98 percent in the north.[199] Truckers are among the best clients of women in prostitution since they pay well and are least violent.[200]

Sex workers' reported condom use with last paying partner ranged from 54 percent in the central region to 96 percent in the south. Condom use during every act of intercourse in the last 30 days ranged from 31 percent in the central region to 85 percent in the south.[201]

Major HIV/STI prevention projects aimed at truckers include PATH and Healthy Highways (see Response and Links sections). These projects are noted for including not just truckers, their helpers, and sex partners, but also other key stakeholders such as truck loaders, gasoline station owners and employees, and motel and lodge owners along highways.

Forced Migration as a Result of Drought, Floods, or Other Disasters

According to a 2001 report of the World Food Program, 40 million Indians are exposed to recurring natural disasters.[202] For example, in July 2003, over 3 million Indians had been displaced by floods and monsoon storms.[203] Further population mobility ensued, as the Indian army was mobilized to assist in related rescue operations.[204]

FXB has found that promoting awareness of HIV/AIDS issues in rural Rajasthan is rendered difficult by poverty, famine, and drought. These three factors play a major role in spurring migration—primarily of young males—from rural areas to large urban centers. Given, inter alia, their lack of sexual education, as well as the lifestyle changes that migration itself entails, these migrant workers are particularly vulnerable to acquiring STIs/HIV. FXB developed an outreach program whereby two peer educators in each of the 180 villages in its target area are being trained on HIV/AIDS. Subsequently, these peer educators will each train 10 people on HIV/AIDS. One of the key lessons is that young workers need HIV/AIDS education *before* they migrate.[205]

MSM

The Humsafar Trust, which works with MSM in Mumbai, reports that MSM are generally mobile in that they travel great distances to find other MSM and sex partners. [206] Another Mumbai-based project, ASHA, reports that within the MSM community, "sites, people, and gatekeepers can change very rapidly." [207] An abstract presented in Barcelona, for example, found that transgendered persons in Tamil Nadu have high levels of mobility, owing to, inter alia, stigma, discrimination, and difficulty accessing housing and other basic needs.[208]

The first national BSS found that 57 percent of MSM respondents reported that they usually traveled to other places; among them, 17 percent reported traveling at least every 7 to 14 days. About 20 percent of respondents reported traveling at least once a month. These trips were usually meant for socializing with relatives or friends (47 percent) or for pleasure (27 percent). Respondents from Mumbai traveled more often compared to those from other sites (Delhi, Calcutta, Chennai, and Bangalore).[209] (See MSM section below.)

IDUs

The national BSS also found that among IDU respondents, there was wide variation in length of stay in the city in which the interview occurred. The proportion of respondents who reported that

they were living in the city since birth was as high as 89 percent in Chennai and as low as 37 percent in Mumbai. Most IDUs interviewed in Manipur (93 percent) and Chennai (81 percent) reported that they were staying at their regular residence, whereas this figure was 26 percent in Mumbai, 53 percent in Delhi, and 62 percent in Calcutta.[210]

Military

According to UNDP, in 2001, India had about 1.3 million military personnel.[211] Designed primarily to defend the country's frontiers, the army has become heavily committed to internal security in Kashmir and in the northeast. Official data on HIV prevalence within the military are not available. The U.S. National Intelligence Council believes that HIV/AIDS is unlikely to undermine India's overall military capabilities because of the large pool of potential recruits.[212] The NIC, however, has not released data on the costs to the Indian military to conduct HIV/AIDS prevention and treatment programs. There is also the cost borne by ex-combatants, their families, and they communities they return to when they fall ill because of AIDS.

Scheduled Tribes

There are 533 tribes in India. The areas inhabited by tribal populations constitute a significant part of the underdeveloped areas of the country. Tribal populations primarily live in isolated villages or hamlets.[213] The main concentration of tribal peoples is in the central belt of India and in the northeastern states. States and UTs in which the tribal population is greater than 50 percent are Arunachal Pradesh, Meghalaya, Mizoram, Nagaland, Dadra & Nagar Haveli, and Lakshadweep.[214]

The population of scheduled tribes (as a percent of national population and in absolute numbers) has been increasing, from 19.1 million in 1951 to 38.0 million in 1971 and 67.8 million in 1991.[215] According to India's 1991 census, scheduled tribes represented 8.1 percent of the total population. [216]

Assuming that the national percentage of the tribal population in 2001 was still 8.1 (though it has likely risen), the 2001 tribal population was 83.2 million (using Census India 2001 national population figure of 1.027 billion).[217] Using a 1991 map of India's tribal population from the Ministry of Tribal Affairs in conjunction with provisional state-level population figures from the 2001 census yields the following rough data for the states identified in 2001 as having the highest HIV prevalences. (Data for Bihar, Gujarat, and Rajasthan are also included, as abstracts addressing tribal populations in these states were presented at the XIV International AIDS Conference in Barcelona in July 2002 [see below for selected abstract summaries].)

Table 7. Size of Tribal Population in Six High-HIV-Prevalence States

State	Total Population, 2001 (millions)	Tribal Population as % of Total State Population, 1991	Estimate of Tribal Population, 2001 (millions)
Nagaland	1.99	87.7	1.75

Manipur	2.39	34.4	0.82
Maharashtra	96.75	9.3	9.00
Andhra Pradesh	75.73	6.3	4.77
Karnataka	52.73	4.3	2.27
Tamil Nadu	62.11	1.0	0.62
Bihar	82.88	7.7	6.38
Gujarat	50.60	14.9	7.54
Rajasthan	56.47	12.4	7.00
Sources: Indian Ministry of Tribal Affairs. *Statewise Tribal Population Percentage in India (1991 Census).* <http://tribal.nic.in/img/IndiaMap.jpg> Accessed July 2003; Census of India. *Census of India 2001: Provisional Population Totals*. New Delhi: April 4, 2001 <http://www.censusindia.net/results/provindia1.html>			

The government has established health centers in tribal areas; however, it notes that medical facilities are inadequate and underutilized. Indian's 1991 census found that the literacy rate among tribal populations was 29.6 percent, far below the national figure (52.2 percent); the female literacy rate was 18.2 percent (national figure: 39.2 percent). [218]

According to a 1993-94 survey from the Ministry o Rural Development, over half of the rural tribal population lives below the national poverty line. The per capita income of tribal peoples is one of the lowest in the country.[219]

The Ministry of Tribal Affairs estimates that between independence and 1990, 8.54 million people from scheduled tribes were displaced by development projects or industries (e.g., mining). This figure represents 55.2 percent of all Indians displaced for these reasons during that time period. The ministry reports:

> Those displaced have been forced to migrate to new areas and most often have encroached on to forestlands and are, on record, considered illegal. It is a known fact that displacement has led to far reaching negative social and economic consequences, not be mentioned the simmering disturbances and extremism is most of the tribal pockets. Economic planning cannot turn a blind eye to these consequences in the light of displacement. While on the one side, tribal were alienated from their lands, there has not been any remarkable progress on health, education or infrastructure development. It has been a myth that industrialization would lead to a corresponding improvement in these sectors among the local tribal. It has only proved that they have been further marginalized from whatever rights and resources earlier enjoyed by them. There has been no attempt to improve the skills of the tribal to compete with the mainstream societies in taking up any responsible position in the industries set up in their areas.[220]

Another facet of mobility is labor migration. Many tribal men are mobile, seeking employment in urban areas and moving regularly between cities and their home villages.[221] Many are also mobile through their service in the army.[222]

There are very few data on HIV/AIDS and India's tribal populations. Below is a summary of the abstracts presented in Barcelona in July 2002 that addressed the topic:

- Researchers from the Tribal Development Society in Kanchee District, Tamil Nadu, and the South Nassau Communities Hospital in New York examined HIV risk among women of the Irrula Tribes in Tamil Nadu. Ethnographic data were collected using key informant interviews and focus group discussions. They found that none of the women was literate. Age at first marriage was 13. Illness is always associated with the "evil eye, witchcraft, and devil possession." Health is not a priority, and health-seeking behavior is supplanted by religious belief, practice, and ritual. Tribal women prefer self-remedies and native medicines to institutionalized medicine. Both men and women migrate for work and both report extramarital relationships; having multiple sexual partners and leaving one partner and marrying another is common. Men make sexual decisions. There was no awareness of HIV/AIDS. None of the women had heard about condoms, and no one in the tribe used them. Women did report STI symptoms. [223]

- SVYM in Mysore and the University of South Florida in the U.S. conducted a household survey within the 109 tribal colonies of the H.D. Kote District of Karnataka. They found that 22 percent of respondents had heard of HIV/AIDS, whereas only 10 percent had knowledge of how it is transmitted. AIDS awareness among women (9 percent) was considerably lower than that among men (18 percent). Only 5 percent of women knew how HIV/AIDS is transmitted; the comparable figure for men was 17 percent. Only 2 percent of women knew a method of preventing HIV; among men, this figure was 13 percent. [224]

- As part of the same study, the researchers used unstructured interviews and focus groups to gather information on sexual values, beliefs, and practices. Beliefs included "Surgical sterilization prevents STIs" and "There is cure for every disease." (The abstract did not include data on the prevalence of these beliefs; one infers that they were the prevailing beliefs.) Lack of structured marriages (this term was also not defined in the abstract) and what the researchers deemed tribal "permissiveness" regarding pre- and extramarital sexual relationships exacerbate HIV vulnerability. The researchers noted a recent increase in transactional sex, wherein tribal people were trading sex with urban dwellers in exchange for material goods (presumably this dynamic was being experienced by tribal populations who had migrated to urban areas and had returned [permanently or temporarily] to participate in the study).[225]

- In Chennai, the MGR Medical University conducted a cross-sectional, population-based (n=158) study in a tribal community in south India. Among males ages 15-49, 72 percent reported high-risk behavior. Over 60 percent of all respondents attended government health centers for STI/RTI treatment. However, they had little knowledge of STIs, and treatment compliance was poor. [226]

- Since 1997, researchers from the BUM Maheswaran Center for Social Education and Development in Madurai, Tamil Nadu, have been working on HIV/STI prevention with the Western Ghats of Kodaikana, a tribal community living near popular hill tourist areas. Members of the tribal community travel to the "buffer zone" with the nontribal community every three months. Many spend this time drinking, smoking, and visiting sex workers. Knowledge of STIs/HIV/AIDS is very low. Having multiple sex partners (other than a blood relation) is widely accepted. [227]

- Project Concern has examined migration of tribal women from Chota Nagpur in Bihar to urban centers in search of employment as domestic workers; there are an estimated 40,000 to 60,000 female migrant household laborers from Bihar in Delhi. These women's vulnerability to HIV infection is related to lack of family support; poverty; little or no education; limited access to information on sexual health; risk of coerced sex and/or other forms of violence; lack of advocacy in legal and social welfare systems; and ineligibility for protection under labor laws given their unskilled worker status. Project Concern used qualitative and quantitative methods to examine these vulnerability factors and to identify the HIV/AIDS/STI needs of migrant girls and women from Bihar working in Delhi as domestics. They found that knowledge of HIV/AIDS and modes of transmission was inadequate. A culture of silence about abuse exists, given lack of advocacy and labor rights, as well as cultural norms.[228]

- The Gujarat State AIDS Control Society has observed permanent and seasonal migration patterns. Within the state's tribal communities, migration tends to be seasonal, with tribal populations moving to urban areas in search of work. Their high rates of illiteracy and lack of skills render them a cheap labor force. Within tribal communities, having multiple sex partners is normal practice. Sexual health services in tribal areas are minimal. Moreover, mobility renders follow-up for STI treatment difficult. In urban areas, they are often bonded labor, rendering any access to health services difficult. GSACS found that tracking floating populations and coordinating health services at both the workplace and permanent residence are crucial. [229]

Intercountry Migration

Recent studies have estimated that over 100,000 Indians leave the country each year to work in other countries; 80 percent of these workers are unskilled.[230]

According to the Indian government, there were over 1.5 million Indian migrant workers in the Middle East in 1991. By 1995, this figure had increased to over 4 million. Indian men are hired as temporary contract workers in construction, in addition to jobs as domestic workers, engineers, accountants, and technicians. Most Indian female migrants in the Gulf states work as domestics or nurses/nurses' aids. [231] Hong Kong also has many Indian domestic workers. [232]

Social and legal protections for Indians leaving the country for work abroad are poor. (Similarly, there are few support systems for individuals who enter India as migrant workers. [233]) Migrants can experience physical as well as financial exploitation by illegal recruiting agencies, law enforcement officials, border crossing officials, other intermediaries, employers in the host country, and other migrants. [234] UNDP reports that Indian export labor has become "casualized" and feminized, indicating a decline in protection of workers' rights and health. Undocumented migrants, particularly women, are especially vulnerable to fraud and exploitation, including sexual abuse; lack of freedom of movement; and poor access to sanitation, nutrition, and health care. [235]

Many Indian migrants, within and outside the country, are separated from their families and spouses or regular sex partners. They may feel anonymous, or they may also feel freed from the social norms that guided their behavior in their home family, community and culture. Disillusionment, despair, loneliness, racial and cultural discrimination, marginalization, dangerous and demeaning work, disappearance of social control, peer pressure, lack of recreational outlets, and uncertainty about employment and legal status can lead to risk behaviors, such as casual sex without a condom, and alcohol and drug use, including injecting drugs. All of these factors render them vulnerable to acquiring HIV. [236]

Migrant workers tend to have little access to HIV/STI information, VCT, health services. Cultural and linguistic barriers exacerbate their lack of access to services that exist. [237]

Many receiving countries require potential migrant workers to undergo mandatory HIV testing. This testing involves myriad issues of legal and human rights. For example, some may be tested for HIV against their wishes or without their knowledge. Their HIV status may be revealed to authorities in their destination or source countries, or to their communities and families. Such breaches of confidentiality give rise to stigma, discrimination, and rejection. Deportation without being advised of HIV status, leads to anger, confusion and vulnerability of sexual partners. [238]

Refugees in India

According to UNHCR, at the end of 2001, there were 322,700 refugees in South Asia. Of them, 169,500 were in India. Countries of refugee origin include Afghanistan, Bangladesh, Sri Lanka, Iraq, Iran, Myanmar, Somalia, Sudan, and China.[239] (See <http://www.unhcr.ch/> for UNHCR's definition of refugees.)

Indian Asylum Seekers

Between 1982 and 2001, there were 187,623 applications by Indians seeking asylum in industrial countries, including Australia, Austria, Belgium, Canada, Czechoslovakia, Denmark, France, Germany, Ireland, Italy, Netherlands, Poland, Spain, Sweden, Switzerland, Turkey, U.K., and U.S.[240]

Human Trafficking

According to a 2003 report on trafficking from the U.S. State Department:

> Internal trafficking of women, men, and children for purposes of sexual exploitation, domestic servitude, bonded labor, and indentured servitude is widespread. Indian men and women also are put into situations of coerced labor and sometimes slave-like conditions in countries in the Middle East and the West.[241]

India is a country of origin, transit, and destination for thousands of trafficked persons. India is a destination for sex tourists from Europe and the U.S. Bangladeshi women and children are trafficked to India or transited through India en route to Pakistan and the Middle East for

purposes of sexual exploitation, domestic servitude, and forced labor. Nepalese women and girls are trafficked to India for commercial sexual exploitation.[242]

According to the 2003 State Department report, forced, bonded, or indentured child labor is illegal in India, and penalties for trafficking are commensurate with penalties for rape or forcible assault. Although the government of India does not yet fully comply with the minimum standards for the elimination of trafficking, it is making significant efforts to do so despite limited resources. Once-rare prosecution of traffickers, brothel owners, and others associated with trafficking has increased significantly over the past year. Three special courts in New Delhi have been designated to hear trafficking cases. The government has significantly increased the number of arrests, prosecutions, and convictions of traffickers and brothel owners over the past year, but backlogged courts slow criminal justice proceedings. There are reports of border guards accepting bribes or ignoring trafficking. In addition, some law enforcement officials have been implicated in alerting brothels to raids. [243]

The State Department report highlights India's significant efforts in trafficking prevention. National and state governments are supporting projects to raise women's educational attainment and provide them with skills and opportunities to generate income and thus reduce their vulnerability to trafficking. The government is also conducting the world's largest child labor elimination program, which includes providing primary education for 250 million children. State interventions, often undertaken in partnership with civil society, include:

- supporting public awareness campaigns about pedophilia and sex tourism
- conducting training programs for drivers and bus conductors to identify "girls in distress"
- establishing village and community level "watchdog" committees to prevent trafficking by monitoring the movements of women and children[244]

This last item, community-level monitoring, may inadvertently prevent women and children from safe migration. For example, the Population Council has found that efforts to prevent trafficking of Nepalese women and children into India often discourage migration altogether, preventing women who want to travel or voluntarily seek safe employment elsewhere.[245] The council also found that many Nepalese antitrafficking interventions are not sensitive to the human rights of trafficked women and girls, in that fear-based HIV messages lead to increased stigma for trafficked returnees, who are condemned by their communities for disgracing their families as well as for bringing HIV/AIDS into their communities. [246]

India's Lawyers Collective HIV/AIDS Unit also notes that during police raids intended to rescue child sex workers, some sex workers have been abused and subject to violence. Some have also been subject to mandatory HIV testing.[247] (See Sex Work section below.)

Health

Health Status

As mentioned above, India has made significant progress in the past several decades in improving the health and well-being of its people. For example, between 1990 and 2000, the percent of the population with access to an improved water source rose from 78 to 88 percent.

Access to improved sanitation rose from 21 to 31 percent (however, this figure was 14 percent for rural population in 1990, vs. 73 percent for urban populations). [248] Over the past 40 years, life expectancy has risen to 63 years, and infant mortality has fallen by over two-thirds.[249]

Despite these achievements, the country continues to bear a heavy burden of both communicable and noncommunicable diseases. (See the accompanying table of key indicators.) There are myriad challenges within the health sector,[250] including the generally poor quality of services delivered by both the public and private sectors.[251] A high proportion of the population continues to suffer and die from preventable infections, pregnancy and childbirth-related complications, and malnutrition. The large disparities across India place the burden of these conditions mostly on the poor, women, and scheduled tribes (indigenous groups) and scheduled castes (previously called "untouchables"). The poorest 20 percent of Indians, for example, have more than double the mortality rates, malnutrition, and fertility of the richest quintile.[252] Moreover, in July 2003, the World Bank noted that India's "progress in health indicators has been slowing down precipitously."[253]

India's physical environment is deteriorating in both urban and rural areas. The World Bank estimates that annual environmental degradation in India represents 6 to 8 percent of GDP. About 40 percent of this cost is related to the burden of disease resulting from unsafe water and poor sanitation, and 35 percent from air pollution, including both indoor and urban air pollution. The poor are particularly vulnerable. Over 20 percent of urban dwellers live in slums and are grossly overexposed to air and water pollution. Conditions are particularly poor in India's largest cities. The elderly, children, and the poor suffer disproportionately from adverse health impacts linked to pollution and overcrowding. [254]

India has the largest number of malnourished children in the world. About 50 percent of children under four are malnourished in terms of weight-for-age; 30 percent of newborn children are significantly underweight; and 60 percent of Indian women are anemic. The nationally set average daily per capita consumption requirement is 2,400 kcal. However, in rural areas, average daily per capita consumption is only 2,150 kcal, indicating a significant food gap at the household level. [255]

Infrastructure

India's state governments are primarily responsible for health care, although some national health programs (e.g. HIV/AIDS, family welfare, malaria, leprosy, blindness, and TB) are supported by central government funds. The World Bank and other donors are supporting decentralization of these programs to states. [256]

The public health infrastructure is vast, comprising 600 district hospitals, 4,000 community health centers, 25,000 primary health centers, 137,000 subcenters, and 160 medical colleges.[257]

Public health facilities suffer from poor management, low-quality service, and underfunding.[258] In releasing a new health policy in 2002, the Indian Ministry of Health reported that low investment in health had led to a poor-quality and uneven healthcare delivery system across the country. In public health facilities, the availability of medicines is frequently negligible. The

equipment in many public hospitals is often obsolete and unusable, and infrastructure is dilapidated. Less than 20 percent of Indians seek outpatient services in the public sector, and less than 45 percent use inpatient facilities in public hospitals.[259]

NFHS-2 found that, among ever-married women ages 15–49 residing in rural areas, 53 percent live in a village with no health facility (primary health center, subcenter, hospital, dispensary, or clinic). Fourteen percent of rural women must travel at least 5 km to reach the nearest health facility. The median distance to a primary health center was 4.9 km and to a subcenter, 1.3 km. The median distance to a dispensary or a clinic was 2.4 km and to a hospital, 6.7 km.[260]

Expenditures

See also the Economy section above.

In 1990, India's public spending on health was 0.9 percent of GDP, a figure that did not change during the rest of the decade.[261] In 2000, private expenditures on health accounted for 4.0 percent of GDP, or 81.6 percent of all health spending.[262]

Preventive care is almost exclusively provided through the public sector: an estimated 90 percent of immunizations and 60 percent of prenatal care is provided through the public sector.[263] There is large variance in health financing among Indian states, and the gap between rich and poor states regarding public resources for health is increasing. Kerala, Punjab, and Tamil Nadu, for example, have double the per capita public health spending of Bihar and Madhya Pradesh.[264] Studies have found that states with better equality in their public spending have better health status outcomes.[265]

NFHS-2 found that 65 percent of Indian households go to private hospitals/clinics or doctors for treatment when a family member falls ill. Only 29 percent normally use the public health sector. Even among poor households, only 34 percent normally use the public health sector when family members become ill.[266] A June 2001 report by the World Bank found that for 80 percent of Indians, the private sector is the main and, in some cases, only provider of health services. The report also documented the generally poor quality of services delivered by both the public and private sectors.[267]

States differ a great deal in the extent to which their populations use private services as well as in the level of poverty and type of service provided. Poorer households purchase less curative health care from the private sector than do richer households. Partly because of inability to pay and the lack of risk pooling, the poor are much less likely to be hospitalized. Across India, those above the poverty line have more than double the hospitalization rates of the poor.[268]

Only 10 percent of Indians have some form of insurance, most of which are inadequate. Hospitalized Indians spend 58 percent of their total annual expenditures on health care. Over 40 percent of those hospitalized borrow money or sell assets to cover expenses. The World Bank conservatively estimates that one-fourth of hospitalized Indians were not poor when they entered the hospital but became so because of hospital expenses; the existence and scale of this phenomenon vary greatly by state.[269]

The World Bank argues that the private health sector in India is unlikely to substantially improve the health and nutritional status of the poor. The private sector remains virtually unregulated and has highly variable quality of care.[270] (See also TB section below.) However, the government's response to HIV/AIDS, at least with regard to ART, is predicated on strong partnerships with the private sector (see Response section).

Tuberculosis

According to WHO, India continues to have the world's highest burden of TB. Each year, there are an estimated 2 million new TB cases in India, representing about one-third of the global TB burden. TB remains the country's leading cause of death; annually, about half a million Indians die because of TB.[271]

WHO estimates that 4.0 percent of adult (15-49) TB cases were HIV-positive during 2001. An estimated 3.4 percent of new cases that year were multidrug-resistant. [272]

TB is the most common opportunistic infection in India.[273] , [274] In January 2003, researchers from YRG Care and the Dr. ALM Post Graduate Institute of Basic Medical Sciences, University of Madras, in Chennai reported the results of a retrospective analysis of 594 AIDS patients (72.9 percent male; baseline CD4 cell count, 216 cells/microL) receiving care at YRG. The most common OI was pulmonary tuberculosis (49 percent; median duration of survival, 45 months).[275]

India has had a national TB control program since 1962.[276] In 1993, the government designed the Revised National TB Control Program (RNTCP). In 1997, DOTS was launched. The treatment success rate for patients registered in 2000 was 84 percent. According to WHO, at the end of 2002, about 550 million people, or 55 percent of India's population, had access to DOTS under the RNTCP.[277]

In 2003, RNTCP reported that during the first quarter of that year, DOTS coverage increased to 665 million population. (Using India's mid-2003 population of 1.069 billion[278] yields DOTS coverage by March 2003 of 62.2 percent.) RNTCP also reported that the number of districts (implementing units) had increased from 287 to 363; in addition, 13 more districts representing a population of 31.7 million had been appraised and were ready for RNTCP service delivery. Over 60,000 patients were being placed on treatment each month.[279]

In 2001, a joint action plan on HIV/AIDS and TB was created, though WHO notes that concrete strategies to link the two do not yet exist. WHO highlights other constraints in the TB system, including:

- lack of confidence in government TB services due to poor services in the past
- vacancies of key staff, especially laboratory technicians
- poor quality services and poor results in the private sector
- lack of full involvement of medical colleges
- poor drug distribution to local level
- ineffective lab quality control

- lack of local electrical supply[280]

The current plan for the RNTCP covers 2001–2004 and aims to expand DOTS coverage to over 80 percent of the country by 2004. Constraints to achieving this target include:

- uncertain funding from 2005 onward
- challenge of concurrently maintaining the quality of TB services and rapidly expanding coverage
- lack of TB awareness in some communities
- decentralization without adequate local management, supervision, and monitoring[281]

The International HIV/AIDS Alliance in India has also identified constraints related to accessing TB (and HIV/AIDS) care:

- lack of information, leading to misunderstanding and confusion at community level about HIV/AIDS and TB
- stigma and discrimination that surround both HIV/AIDS and TB
- lack of access to affordable TB screening and treatment
- poor referral and follow-up systems[282]

Dr. Maria Ekstrand of the University of California San Francisco notes that studies conducted over the past 20 years have identified private practitioners as one of the greatest obstacles to TB control in India[283], [284], [285], [286] Private doctors with varying types of training and degrees often violate treatment guidelines by failing to use sputum testing and by prescribing the wrong drugs and inappropriate doses. Many private providers have been found to undertreat TB, and studies have found that the majority of sputum-positive patients in private care are not being treated for TB.[287], [288]

Several studies[289], [290], [291], [292], [293], [294], [295] report that TB patients rarely go immediately to government hospitals, due to their reputation as having long lines, unfriendly treatment, and inferior drugs. Instead, many patients initially seek care by going to private providers, to "quacks" in the street, or directly to pharmacists to obtain their medications. The TB literature also shows that there is a great deal of "provider switching," with patients only going to government hospitals for care once their funds are depleted. Ogden et al. reviewed these factors, concluding that to be successful, TB control programs need to address the social dimensions of the disease, rather than focusing simply on patient factors influencing adherence.[296]

Although most TB patients know that TB care requires sustained regular treatment, they frequently admit to interrupting their treatment as soon as they gain symptomatic relief. Patient adherence rates are typically reported as being between 50 and 60 percent.[297], [298], [299] TB patients are also likely to discontinue treatment if they have low incomes and little education. As the treatment progresses, social commitments and work often become more important and displace the burden of treatment adherence.

The stigma of a TB diagnosis has many consequences, including social stigma. Many believe it to be a hereditary disease, making it more difficult to get married, both for TB patients and for

their family members.[300] The situation for female TB patients is typically worse than for men, especially if they are married. Women tend to neglect their health in favor of doing household chores and often delay treatment. They report having little, if any, control over household finances and fear that their husbands will divorce them if they disclose their diagnosis.[301], [302]

Similar barriers have been found in research examining adherence to leprosy regimens in India.[303], [304], [305], [306], [307] Only a fraction of leprosy patients are estimated to be in treatment, due to the social stigma of the disease,[308] and among those being treated, adherence is typically estimated at 50 percent. In one study ,[309] patients who dropped out of treatment attributed this to inconvenient clinic hours, lack of regimen knowledge, medication side effects, and the social stigma of leprosy. Poor clinic attendance has also been found among leprosy patients who believe in a traditional (humeral) cause of illness,[310] who experience adverse side effects,[311] and who report conflicting family and work commitments.[312]

HIV shares many of the features of leprosy and TB, including being an infectious, stigmatized disease with a medication regimen that can have severe side effects and that requires a long period of adherence. Many of the adherence barriers seen with TB and leprosy are thus likely to apply to HAART. For example, the phenomenon of "provider switching" wherein patients seek care at government hospitals only when their funds for private care are depleted, has already been observed among PWHA in New Delhi. [313] In addition, providers have much less experience treating HIV than TB and monitoring for HAART toxicity and efficacy is more expensive than TB sputum tests. Patient demands are also greater for HIV treatment regimens; the drug regimen is more complicated and more expensive, and it may have to be followed for life, rather than for six to eight months. Further, an HIV diagnosis carries an even greater stigma than TB in this setting. Thus, judging from the experience of TB and leprosy treatment in India, and from the general Indian adherence literature,[314] significant adherence problems with ART can be anticipated. Addressing these problems requires a careful examination of both provider and patient factors associated with antiretroviral medication adherence.

Other Health Issues

Malaria is another critical health concern in India, with 2 million to 2.5 million new cases each year.[315] Other major health issues in India include polio, measles, diarrheal disease, encephalitis, dengue fever, diphtheria, leishmaniasis, poliomyelitis, Guinea Worm disease, leprosy, and lymphatic filariasis.

Sexual and Reproductive Health

UNFPA ranks India a category "A" country, meaning that it is furthest from achieving the sexual and reproductive health and rights goals of the International Conference on Population and Development (ICPD), held in Cairo in 1994. Group A countries have the greatest need for external assistance and the lowest capabilities for mobilizing domestic resources to close this gap. [316]

The accompanying table provides key S&RH indicators. Reproductive tract infections are widespread among young women.[317] Maternal mortality is high, with most maternal deaths the

result of infection, hemorrhage, eclampsia, obstructed labor, abortion, or anemia. Between 50 and 90 percent of all pregnant women in India experience anemia. Lack of spacing between children—37 percent of births occur within two years of the latest birth—also exacerbates mortality rates. Thirty-seven percent of pregnant women in India receive no prenatal care during their pregnancies. Women cite the lack of nearby and adequate health care facilities as one of the main reasons that they did not seek/receive antenatal care. Lack of appropriate care and referrals during childbirth are linked to maternal mortality. [318]

Population

India's family planning program was launched in 1952. Since the 1960s, India's total fertility rate (average number of children a woman would have assuming that current age-specific birth rates remain constant throughout her childbearing years, usually considered to be ages 15 to 49) has declined from over 6 to 2.97, while the contraceptive prevalence rate (modern methods) has increased from less than 10 per cent to 43 percent.[319] However, the national TFR masks wide state-level differences. Comparatively richer states such as Goa and Kerala have attained below replacement level fertility; Karnataka, Himachal Pradesh, Tamil Nadu, and Punjab are at or close to replacement level fertility. By contrast, the TFR is 3.3 or above in the poorer states of Meghalaya, Uttar Pradesh, Rajasthan, Nagaland, Bihar, and Madhya Pradesh. Between one-third and one-half of all births in these latter states are fourth or higher-order births, compared with only 7 to 9 percent of births in Kerala, Goa, and Tamil Nadu.[320]

Rural women and women from scheduled tribes and castes have somewhat higher fertility than other women. Fertility is particularly high for illiterate women, poor women, and Muslim women. Over half of women ages 20–49 had their first birth before reaching age 20, and women ages 15–19 account for almost one-fifth of total fertility.[321]

Overall, sterilization accounts for 75 percent of total contraceptive use. Female sterilization is far more common than vasectomies; the NFHS-2 found that among currently married women, 34 percent are sterilized, whereas only 2 percent of women report that their husbands are sterilized. Three percent of women use the condom as a contraceptive; 2 percent use the pill and the same percentage uses IUDs. Contraceptive prevalence varies widely among socioeconomic groups. Muslim women, women from scheduled tribes, and poor women are 37 to 40 percent less likely than other women to use contraception.[322] Unmet need for family planning varies from 7 to 9 percent of currently married women in Punjab, Haryana, Andhra Pradesh, Gujarat, and Himachal Pradesh to 25 to 36 percent in Meghalaya, Nagaland, Arunachal Pradesh, Uttar Pradesh, and Bihar. [323]

Both national and state-level population policies continue to emphasize the achievement of replacement fertility as their main objective. Historically, the National Family Welfare Program has focused narrowly on population control, resulting in a bias toward sterilization over spacing methods for contraception. Lacking choices, women who wanted to space births but not end childbearing began to rely heavily on abortion as a means of birth spacing. Reliance on abortion for birth spacing is perpetuated by current policies, as a number of states continue to emphasize both a two-child norm and reliance on female sterilization as the preferred means of attaining these goals.[324]

Although the Medical Termination of Pregnancy Act of 1971 legalized abortion, access to safe abortion remained low, and the number of illegal and unsafe abortions high. In 2002, the Indian Parliament amended the 1971 Medical Termination of Pregnancy Act to make legal abortion more widely accessible.[325] (For a recent, detailed discussion of sex determination and sex selective abortion, see Rupsa Mallik. *India: Recent Developments Affecting Women's Reproductive Rights*. Takoma Park, Md.: Center for Health and Gender Equity, December 2002 <www.genderhealth.org>)

Sexually Transmitted Infections

Several studies indicate that herpes simplex virus-2 (HSV-2) may be fueling the HIV epidemic in India. Researchers from Sion LTMG Hospital and Medical School, Mumbai District AIDS Control Society, Center for AIDS Research & Training, and UCSF found that men attending public STI clinics in Mumbai had a high prevalence of HIV, associated with HSV-2 infection and visiting a female SW. Enrolling consecutive patients attending two municipal STI clinics in Mumbai, they found that 54 percent had visited a in the last three months, 47 percent were married, 24 percent had some MSM activity (receptive or insertive anal sex) in the past. Among married men, 46 percent had visited a SW in the last three months and 12 percent had had MSM activity. Among all men, 20 percent were HIV-positive, 42 percent had HSV-2, 11 percent had syphilis, 6 percent tested positive for hepatitis B surface antigen, 4 percent had chlamydia, and 15 percent gonorrhea. HIV was significantly associated ($p<.05$) with ages 31-40, exposure to SW, urethral discharge, HSV-2, and syphilis. Visiting a SW in the last three months was associated ($p<.05$) with HSV-2, active genital ulcers, and urethral discharge. Recent MSM activity was not associated with increased HIV or STI risk.[326]

A study by YRG Care and Johns Hopkins involved 1,631 adults ages 18-40 living in slum communities in Chennai. The researchers found that HSV-2-positive men were seven times as likely to be HIV-positive (AOR= 7.44, 0.97, 57.06) and over four times as likely to have hepatitis C (AOR= 4.53, 1.28, 16.01) as HSV-2-negative men. HSV-2 was not associated with HIV or hepatitis C in women. However, controlling for number of lifetime sex partners, women reporting genital ulcers were over three times as likely to have hepatitis C (AOR= 3.54, 0.99, 12.68) compared with those without genital ulcers. MSM (n=44) and male IDUs (n=6) were at high risk of HIV (MSM: OR= 8.55, 95% CI: 1.52, 48.00; IDU: OR=59.83, 5.08, 705.48) and hepatitis C (MSM: OR= 4.32, 1.18, 15.95; IDU: OR= 54.05, 11.70, 249.68).[327]

In Pune, Johns Hopkins and the National AIDS Research Institute found that recent HSV-2 infection was a major independent risk factor for acquisition of HIV infection among STI patients. They used a retrospective cohort study of 2,732 HIV-1-seronegative patients attending three STI and one gynecology clinic, continuously enrolled from 1993 to 2000. Forty-three percent of participants were infected with HSV-2 at the baseline visit. Among those initially HSV-2-seronegative, HSV-2 incidence was 11.4/100py (95% CI 9.9-13.0). Based on a median follow-up time of 11 months, the incidence of HIV-1 was 5.8/100py (95%CI 5.0-6.6). The adjusted relative risk of HIV acquisition associated with chronic (prevalent) HSV-2 infection was 1.69 (95%CI 1.23-2.33; p=0.001) and 1.81 (95%CI 1.09-3.03; p=.02) with remote primary

HSV-2 infection. Recent HSV-2 infection was independently associated with a 3.64-fold increased risk of primary HIV infection (95%CI 1.72-7.70; p<.001).[328]

Hopkins and the National AIDS Research Institute found that between 1993 and 2000, there was a significant decrease in the clinical diagnosis of all STIs among patients presenting to the government STI clinics in Pune. The researchers note that this decline could be the result of increased STI/HIV awareness and risk reduction, including increased condom use. However, it is also possible that individuals at highest risk for STIs have shifted their clinical care to the private sector.[329]

Stigma and Discrimination

See also the Household Impact section below.

HIV/AIDS-related stigma in India is severe and contributes to the suffering of those infected as well as their loved ones. Stigma also interferes with decisionmaking on HIV counseling and testing, disclosing one's HIV status, and seeking and remaining in treatment. Members of marginalized groups often experience dual stigma, forcing them to hide their lifestyles and rendering it difficult to access HIV/AIDS programs.

As in many other countries, reported statistics on HIV infection in India suggest that the epidemic—at least in its early stages—has disproportionately affected poor, marginalized groups, including female sex workers, truck drivers, migrant workers, MSM, and IDUs. Consequently, AIDS is often perceived as a disease of "others," of people living on the margins of society, whose lifestyles are considered "perverted" and "sinful." These perceptions foster the attachment of blame to PWHA, which is an important component of stigma.

Early descriptions of HIV epidemiology created a general perception that HIV infection was largely restricted to sex workers, truckers, and IDUs. The rest of the population was, and in many cases, still is, in denial, despite that infection rates among the general population are rising.[330]

Dr. Shalini Bharat of the Tata Institute of Social Sciences in Mumbai led a study on HIV/AIDS-related discrimination, stigma, and denial. Her team collected data in Mumbai and Bangalore using key informant interviews, in-depth individual interviews, and focus group discussions. The main overt and covert forms of discrimination experienced by respondents were:

Hospitals

- refusal to provide treatment for HIV/AIDS-related illness
- refusal to admit for hospital care/treatment
- refusal to operate or assist in clinical procedures
- restricted access to facilities like toilets and common eating and drinking utensils
- physical isolation in the ward (e.g. separate arrangements for a bed outside the ward in a gallery or corridor)
- cessation of ongoing treatment

- early discharge from hospital
- mandatory testing for HIV before surgery and during pregnancy
- restrictions on movement around the ward or room
- unnecessary use of protective gear (gowns, masks, etc.) by health care staff
- refusal to lift or touch the dead body of an HIV-positive person
- use of plastic sheeting to wrap the dead body
- reluctance to provide transport for the body
- delays in treatment; slow service (e.g. made to wait in queues, asked to come again)
- excuses or explanations given for non-admission (but admission not directly refused)
- shunting patient between wards/doctors/hospitals
- keeping patient under observation without any treatment plan
- postponed treatment or operations
- unnecessarily repeated HIV tests
- conditional treatment (e.g. only on the condition that the patient will come for follow up or join a drug trial program).

Home and Community

- severed relationships, desertion, separation
- denial of share of property or access to finance
- blocked access to spouse, children, or other relatives
- physical isolation at home (e.g. separate sleeping arrangements)
- blocked entry to common areas or facilities (toilet, etc.)
- blocked entry to common places like village or a neighborhood area
- denial of death rituals
- labeling and name-calling
- disparaging remarks about the HIV-positive family member (e.g. “he is paying for past sins”)
- "guilt tripping” for burdening the family economy and for lowering family prestige

Workplace

- removal from job
- forced resignation
- withdrawal of health/insurance benefits
- poor access to shared facilities
- social distance
- labeling and name calling[331]

People living with HIV/AIDS expressed fear of:

- AIDS stigma (of being identified with “deviant,” “morally sinful” behavior, mainly sexual promiscuity and visiting sex workers)
- loss of reputation in the family and society
- damaging the family’s social reputation
- HIV serostatus's being revealed and being identified as sexually deviant
- social discrimination and isolation, of being avoided or shunned by others

- being judged and categorized as a member of a "deviant" group such as promiscuous people and gay men
- death and of dying early
- dying uncared for, and being denied last rites
- social ridicule
- various illnesses and debilitating ill-health, of painful conditions, of not receiving medical attention, and of being denied admission to hospital
- being deserted, of loss of significant relationships, and of loss of trust and confidence
- losing one's job or source of income
- passing the infection to others, whether spouse, children, or other family members[332]

In both study locations, stigma and discrimination were most often encountered in the health care setting and, to a lesser but still significant extent, in family and community contexts. Discrimination was also reported in schools; children of HIV-positive parents, regardless of their own serostatus, were often denied the right to go to school or were segregated from other children. Life insurance companies were not trusted by people with HIV, despite assurances that benefits would be paid if the policyholder had tested positive after taking out a policy. Concern was expressed by people with HIV that they faced harsher treatment from insurers than did people with other serious health conditions. [333]

In a study set in New Delhi, researchers from SHARAN and the Tata Institute of Social Sciences found that stigma and discrimination against people living with HIV/AIDS in hospitals and clinics discourages many from seeking care. They found many of the same scenarios as described in the Bharat study above, including denial of and delayed treatment, segregation and isolation from other patients, and early discharge (in both public and private facilities). Other barriers to care include the misconception that AIDS is untreatable, the lure of witch doctors who claim to have a cure, and lack of awareness on the part of PWHA about their own needs and rights. Study participants responded that they use several strategies to access care without incurring negative repercussions, including concealing their HIV status as long as possible, seeking care outside their own community to protect anonymity, and patronizing local AIDS service organizations that provide nondiscriminatory care. Those who can afford to visit private clinicians do so to avoid long queues in government hospitals and to receive timely care. As the costs for ongoing care accumulate, PWHA eventually turn to the public sector for free or subsidized services.[334]

Bharat also found that the treatment of the bodies of people who had died of AIDS-related illnesses was also a serious concern to HIV-positive respondents. The practice in Mumbai of placing such bodies in black plastic bags was regarded as an affront to human dignity and an effective breach of confidentiality, rendering it very difficult to access good undertaker and funeral services. Concern was also expressed in both sites that traditional rites were no longer being administered to people who had died of AIDS-related conditions. Although instances of HIV/AIDS-related discrimination were documented at work, in this study the workplace did not emerge as a major setting for negative experiences for HIV-positive people. This may be related to lack of disclosure as well as the fact that many industries and businesses are in denial about the spread of the epidemic and its potential impact.[335]

At a February 2002 workshop held by the International HIV/AIDS Alliance-India, participants noted that although many NGOs, CBOs, and PWHA have some knowledge of AIDS and OIs, their information sometimes contains major inaccuracies. The Alliance's assessment of HIV/AIDS-related treatment in India found that secrecy and ostracism were major barriers to safe and effective treatment[336] (see the Stigma section for more detailed discussion).

Gender and HIV/AIDS Stigma

See also the Gender section.

Bharat's study provided evidence that AIDS stigma and discrimination in India are often a gendered phenomenon. Women were often blamed by their parents-in-law for infecting their husbands, or for not "controlling" their partners' urges to have sex with other women. In addition, HIV-positive women were more likely to take care of their husbands, neglecting their own health. After having been the primary caregivers for their husbands, many women were asked to leave the house of their in-laws after the husband died. [337] Anecdotal reports from the FXB India Society in West Bengal indicate that after a husband's AIDS death, widows are being forced from their in-laws' home and sent back to their parents, where they also face rejection.[338]

Bharat found that women were less likely to seek testing, and less able to afford treatment, than were the men in her study. The quality of care provided to women with HIV/AIDS in the family was significantly poorer than the care provided to men. Issues such as inheritance, housing, and caregiving were identified as highly problematic for women. Although a small number of cases were cited in which women had abandoned their HIV-positive husbands, more common was the neglect and maltreatment of HIV-positive women by husbands and in-laws.[339] The Positive Women Network in Chennai reports that HIV/AIDS-related stigma and discrimination have a greater impact on Indian women than on men. [340]

A study undertaken by Ipas, a reproductive health NGO based in Chapel Hill, has also documented the gendered nature of HIV/AIDS stigma and discrimination in India. [341] In an Ipas study of reproductive choice and HIV/AIDS, one informant in India noted that some providers refuse to insert IUDs for women with HIV because they do not want to come into contact with their vaginal fluids. It can also be very difficult for HIV-positive not to breastfeed, given that this departure from standard practice can be interpreted to signify that a woman is HIV-positive and that many women do not have access to breast milk substitutes. [342] A study by researchers from the Dr. MGR Medical University and National Institute of Epidemiology, both in Chennai, involved 50 HIV-positive mothers ages 19-30, all from lower socioeconomic groups. Of them, 96 percent were aware that breast milk transmits HIV. Despite knowing the risk of transmission, 74 percent of the women breastfed their babies. Of those that breastfed, 16 percent cited family stigma as the reason, while 18 percent cited lack of money to purchase breast milk substitutes.[343]

(According to the NFHS-2, although breastfeeding is nearly universal in India, few children begin breastfeeding immediately after birth. Fifty-five percent of children under four months of age are exclusively breastfed. The median duration of breastfeeding is 25 months, and the median duration of exclusive breastfeeding is two months.[344])

The Ipas study highlighted that in India, pregnant women with HIV have reported being pressured by health care providers to terminate their pregnancies. A health worker may not consider his/her advice to be coercive, but it may be perceived that way, especially by women who are accustomed to relying on health workers' expertise and not accustomed to challenging persons in positions of authority.[345]

Studies have also detailed how in addition to female sex workers, MSM and transgenders with HIV/AIDS experience double discrimination. People in these marginalized groups are stigmatized not only on the grounds of HIV status but also for being members of a socially denigrated group.[346] (See also the MSM and Sex Work sections below.)

Government, media, and research responses to HIV/AIDS in India have focused on the role of women engaged in sex work in the spread of the epidemic. Targeted interventions, particularly focusing on sex workers, have been the cornerstone of the Indian government's HIV/AIDS program.[347] Representations of AIDS as an "immoral" disease, associated with immoral behavior such as sex work, have created a backlash, particularly against female sex workers. Several media reports have described violence against female sex workers or women purported to be sex workers. (See also the Sex Work and Violence sections.)

(The Indian Council of Medical Research, India's National AIDS Research Institute, and Yale University's Center for Interdisciplinary Research on AIDS are undertaking a year-long study on HIV/AIDS-related stigma in Indian hospitals <http://cira.med.yale.edu/research/indiastigma.html> The study, entitled "Understanding HIV-Relevant Stigma in India," aims to determine how stigma affects patient care and to "lessen unconscious biases" among doctors toward HIV-positive patients. Researchers plan to interview patients and health care providers in Pune, a location selected because of its "increasing" HIV infection rate and the availability of trained researchers. When findings are available, they will be integrated into this report.)

Gender

Gender is integrated into all the sections of this paper. The text below seeks to provide a very broad overview of the topic, but other sections should be consulted as well, particularly Epidemiology, Stigma, Health, Violence, IDU, and Sex Work.

Dr. Suniti Solomon, who diagnosed the first case of HIV in India and is the director of the YRG Center for AIDS Research and Education in Chennai, analyzes the social construct of gender in India, which has evolved over several hundred years and renders women highly vulnerable to acquiring HIV and other STIs. [348] She notes that in addition to biological vulnerability:

> The lack of opportunities for young women to receive sex education and HIV information leads them to accumulate unverifiable myths. Social norms only encourage "innocent" women, e.g., who is sexually naive until marriage, does not seek pleasure from sex, one who would willingly and actively participate in sex only for the pleasure of her husband. Women's economic independence on men causes poor health-seeking behaviors. Reproductive tract infections are not promptly treated increasing their

> susceptibility to HIV. Women with poor social and job skills feel inclined to offer sexual services or to offer sex in return for social support. These women are more likely to stay within a marriage no matter how vulnerable they are to infection. Motherhood, no doubt noble, also enslaves women. Fertility pressures force women to abandon caution when having sex with a known HIV-infected partner. Marriages are saved at the cost of HIV. Women are taught to accommodate and be resilient in the face of violence. They pride in being able to live in the midst of violence. Violence directly enhances one's vulnerability to HIV. Submission to violence encourages men to engage in irrational and unchallenged behaviors such as having concurrent multiple partners. The impact of HIV on a woman is much greater than that on men. In most societies, women play the nurturing role, in predominant cases, naturally and voluntarily. However, when she is HIV infected, which may imply an infected partner, her burden doubles.[349]

Dr. Gautam Bhan of the Institute of Development Studies at the University of Sussex notes that:

> On the surface, one sees increasing international exposure, urbanization and a growing industrial sector, rising male and female literacy, and relatively low inflation—aggregate indicators that tell stories of progress and development, but also hide volumes behind their numbers....Many women have risen to positions of power within the government at the center and state levels; others head businesses, hold high-salary jobs, outperform boys in school examinations and are, generally, more visible than they have been at anytime outside the freedom struggle. Yet, seeing the Indian scenario a decade after reforms, it seems that for every woman that gains in power, several more silently recede further into the depths of poverty. Notions of women's empowerment come into question when female members of the ruling Hindu right government urge Indian women to return to their home and fulfill their roles as wives, mothers and nothing else. Increasing economic inequities, the feminization of poverty, and the changing role of the State within a liberal economy, in addition to changing notions of caste, religion, and social mores, have individual and combined effects on understandings of gender in India today.[350]

Early Marriage

NFHS-2 found the proportion of women who marry below the age of 15 is rapidly declining, and the practice of very early marriage (before age 13) has almost disappeared in urban areas and become quite rare in rural areas. However, the majority of ever-married Indian women ages 20–49 were married before they reached the legal minimum age at marriage of 18 years, as set by the Child Marriage Restraint Act of 1978. About half of women ages 25–49 married before age 15 in Madhya Pradesh, Bihar, Uttar Pradesh, Andhra Pradesh, and Rajasthan, and about four-fifths of women in these states married before reaching the legal minimum age at marriage of 18 years. By contrast, the median age at first marriage is 22 to 23 years in Goa, Mizoram, and Manipur, and 20 years in Kerala, Nagaland, Punjab, and Sikkim. On average, Indian women are five years younger than their husbands.[351]

Female-to-Male Sex Ratio

Of serious concern is the overall female-to-male sex ratio of the population. During the 20th century, sex ratios fell consistently, except for a very slight increase in the 1990s. In 1901, the ratio was 972 females per 1,000 males; according to the 1991 census, it had declined to 927 females per 1,000 males.[352] According to the 2001 census, the ratio had risen slightly to 933, though still far below the 1901 figure.[353] Nobel economist Amartya Sen attributes India's sex imbalance to "the comparative neglect of female health and nutrition, especially—but not exclusively—during childhood."[354]

Women are often not in positions to influence how earned income is spent within the household. Other factors include increasing cases of sex-selective abortions (illegal but widespread); female infanticide; violence against women (see below); *suttee* (wherein a widow is burned to death on her husband's cremation pyre, an illegal act); dowry murders (wherein a woman is killed due to insufficient gifts/money given by her parents at the time of her wedding); and discrimination in access to health care, nutrition, and employment opportunities.[355]

(For more information on sex-selective abortions, see Rupsa Mallik. India: Recent Developments Affecting Women's Reproductive Rights. Takoma Park, Md.: Center for Health and Gender Equity, December 2002 <www.genderhealth.org>)

Preference for Sons

Das Gupta et al. highlight that kinship systems in India:

> … generate a critical dichotomy between the value of a girl to her parents and her value to her husband's family. As long as the custom persists for women and their future productivity to be totally absorbed by their in-laws, parents are likely to perceive daughters as a drain and prefer to raise sons. Women can contribute little to their parents' welfare, so even when levels of women's education and formal sector labor force participation increase, the fruits of these go to her husband's home. Even though women can gain considerable power in the household in their old age, this depends on having sons who support their mother's voice in the household at the expense of their own wives....The fact that sons are the main source of old age support is clearly culturally determined, as there is no intrinsic reason why parents cannot seek such support from their daughters as they do elsewhere in Asia. Nor can adequate pensions and savings offer peace of mind for one's old age, as long as people believe that they will be 'hungry ghosts' in the afterlife unless sons provide the necessary rituals.[356]

Despite socioeconomic changes, preference for sons continues in India. [357] The NFHS-2 found that nationally, 33 percent of ever-married women want more sons than daughters, but only 2 percent want more daughters than sons. Son preference tends to be stronger in the northern part of the country, especially in Uttar Pradesh, Rajasthan, Bihar, Haryana, Madhya Pradesh, Orissa, and Arunachal Pradesh. Weakest son preference is found in Meghalaya, Mizoram, Tamil Nadu, Kerala, Karnataka, and Goa.[358]

One reason for this scenario is that a son gives a woman standing in the household and community. As a young woman, she has limited bargaining power vis-à-vis her mother-in-law

and other household members. As an old woman, she is vulnerable without a son to offer his protection. Although it is unusual for men to take a second wife if their wife does not have a son, when it does occur, the first wife's position in the household is relegated to that of domestic help.[359]

Education

There are acute gender disparities in literacy and education, as shown in the accompanying indicator table. Women's literacy and educational attainment also vary significantly by state. For example,NFHS-2 found that 58 percent of ever-married women ages 15–49 are illiterate, a decline from 63 percent at the time of NFHS-1. The literacy rate for ever-married women is highest in Mizoram (90 percent), closely followed by Kerala (87 percent); it is lowest in Bihar (23 percent), Rajasthan (25 percent), and Uttar Pradesh (30 percent). The percentage of women who have completed high school ranges from 7 percent in Rajasthan to 44 percent in Delhi. Other states where the percentage of women who have completed high school is relatively high (30 percent or higher) are Kerala, Goa, and Punjab. In Orissa, Bihar, Meghalaya, Madhya Pradesh, Arunachal Pradesh, and Assam, less than 10 percent of women have completed high school.[360]

Women's lower educational levels are related to lower formal labor force participation and decreased earnings and thus lessened economic autonomy. This situation may increase women's economic dependence on men and inability to refuse sex or insist on condom use—factors that can increase vulnerability to HIV.[361] Moreover, compared with boys, girls are more often kept at home when household income and/or labor supply falls (an increasing phenomenon given high AIDS mortality) (see Household section below).

Employment

The NFHS-2 found that 39 percent of ever-married Indian women ages 15-49 do "work other than housework" and that over two-thirds of these women work for cash. Women's work participation rates vary from 9 percent in Punjab and 13 percent in Haryana to 60–70 percent in Manipur, Nagaland, and Arunachal Pradesh. In rural areas, 76 percent of working women work in agriculture. In urban areas, 27 percent of working women are production workers, 17 percent are professionals, 15 percent are agricultural workers, and 13 percent are in sales and service occupations.[362]

A significant feature of women's work participation in India is their substantial contribution to family earnings. NFHS-2 found that about 18 percent of urban as well as rural women who worked for money at any time in the 12 months preceding the survey reported that their family was entirely dependent on their earnings. Another 30 percent in urban areas and 24 percent in rural areas reported that they contributed half or more (but not all) of total family earnings. Twelve percent of women in urban areas and 9 percent in rural areas reported that they contributed almost nothing to total family earnings. NFHS-2 also found that 10.3 percent of all Indian households are headed by women. In urban areas, 11.1 percent of households are headed by women; in rural areas, this figure is 10 percent.[363]

Decisionmaking

NFHS-2 found that 48 percent of ever-married women are not involved in making decisions about their own health care. There are large variations among states: over 75 percent of women in Himachal Pradesh, Meghalaya, and Punjab are involved in decisions about their own health care, compared with about 40 percent in Madhya Pradesh, Orissa, and Rajasthan. Nationally, only 41 percent of women who earn cash decide independently how to spend the money that they earn. [364]

Land Tenure

A 1999 World Bank study states that Indian women's legal rights have generally not been implemented.[365] The study goes on to focus on significant gender biases in land tenure. Women have legal rights to inherit and own land; this is particularly true for Hindu women, following the introduction of the Hindu Succession Act in 1956, which stipulates that the daughter(s), widow, and mother of a Hindu man who died intestate inherit property equally with his sons. In practice, however, significant and persistent gaps remain between women's legal rights and their actual ownership of land, and between the limited ownership rights women do enjoy and their effective control over land. (Agricultural land subject to tenancy is exempt from the Hindu Succession Act and is governed by state-level acts. With regard to land ceiling acts, additional land may be kept in the case of adult sons but not adult daughters. In assessing a family's landholdings, holdings of both spouses are considered, but those of women are often arbitrarily declared "surplus," whereas men's holdings remain untouched.)[366]

Women's legal land rights conflict with deep-rooted social norms and customs and are rarely recognized as legitimate in practice. Social stigma, seclusion, and other sanctions pressure women to forfeit their legal rights in favor of their brothers. Consequently, in the event of widowhood or marital breakup, women are dependent on their brothers for socioeconomic support. The social obstacles to women's ability to exercise their legal rights are strongest in north India (e.g., Rajasthan, Uttar Pradesh) and weakest in the southern states. And even when women do hold land in their name, they may not be able to exert effective control over it, unable to determine how it should be used, leased, or mortgaged.[367]

Women's lack of control over independent sources of income affects their vulnerability to acquiring HIV as well as ability to access AIDS care; it also affects the vulnerability of their children. This scenario also holds for women in better-off and higher-caste households.[368]

Violence

See also the Governance/Violence section above.

NFHS-2 found that 20 percent of ever-married women have experienced beatings or physical mistreatment since age 15 and at least one in nine experienced such violence in the 12 months preceding the survey. Most of these women have been beaten or physically mistreated by their husbands. Domestic violence against women is more prevalent (27 to 29 percent) among women working for cash; poor women; scheduled-caste women; and widowed, divorced, or deserted women.

NFHS-2 asked respondents whether they thought that a husband is justified in beating his wife for each of the following reasons: if he suspects her of being unfaithful; if her natal family does not give expected money, jewelry, or other items; if she shows disrespect for her in-laws; if she goes out without telling him; if she neglects the house or children; or if she does not cook food properly. Among ever-married women, 56 percent accept at least one reason as a justification for wife beating. A higher proportion of rural women (60 percent) than urban women (47 percent) agree with at least one reason, and rural women are also more likely than urban women to agree with each specific reason. Agreement with at least one reason and with each of the different reasons for wife beating declines sharply with education. Women belonging to scheduled tribes, scheduled castes, or other backward classes (58 to 63 percent) are more tolerant of wife beating than are women not belonging to a scheduled caste, scheduled tribe, or other backward class (49 percent).[369]

The National Crimes Record Bureau of India's Ministry of Home Affairs indicates that there was a 71.5 percent increase in reported cases of torture and dowry deaths from 1991 to 1995 (which may reflect increased/improved reporting). In 1995, torture of women constituted 29.2 percent of all reported crimes against women. In another study, 18 to 45 percent of married men in five districts of Uttar Pradesh acknowledged that they physically abused their wives. A 1989 study of dowry abuse indicated that one out of every four dowry victims was driven to suicide.[370] (The International Center for Research on Women has published numerous case studies on domestic violence in India: http://www.icrw.org/publications_violence.htm)

As part of a multisite international behavioral HIV intervention trial, YRG Care, Johns Hopkins, and UNC conducted in-depth interviews with men and women in two randomly selected slums in Chennai. Participants noted that husbands hold decisionmaking power in economic, social, and sexual spheres. Gender norms often sanction husbands' violence. As women try to minimize exposure to violence, their ability to insist on monogamy, negotiate condom use, or refuse sex is limited. Clear patterns of violence were present; respondents reported that husbands regularly beat wives in most marriages. Women described being slapped, kicked, having their head hit against the floor, and being burned with lit cigarettes; some were struck with objects such as ladles or stones. Slapping or hitting the face was the most frequent type of violence, with physical sequelae such as recurring headaches and blurred vision reported. Disobeying husbands or elders, neglecting household chores, refusing sex, and suspected infidelity often triggered violence. Drinking often preceded explosive outbreaks of violence. Some women modified their behavior to avoid physical violence by engaging in silent passivity during verbal arguments and acquiescing to unwanted sex. Although most respondents believed wife beating was the norm, the acceptable intensity of violence varied by gender.[371]

Accessing HIV Care and Treatment

A study by the S. Singh Postgraduate Institute of Medical Education and Research found that among 252 HIV-infected participants, an HIV-positive spouse was the only risk factor for acquiring HIV in 82.25 percent of women, compared to only 2.55 percent of men. Among all women, 75 percent were "completely unaware" of the risk to themselves from their husband,

only 19.4 percent had received primary education, 75 percent had never heard of HIV before being tested, 25 percent women were widows whose spouses had died because of AIDS.[372]

Prior to HIV/AIDS, there were already strong gender biases in access to health care.[373] A small study by CHANGE and UNC in rural Gujarat found that women rank older male household members' health as the highest priority. Despite pain or discomfort, women carry out their work responsibilities.[374]

The International Alliance for HIV/AIDS has found that when both a husband and wife are infected with HIV/AIDS, men routinely receive care and treatment ahead of their wives.[375] Lack of money and distance to treatment are also constraints.[376] The Lawyers Collective HIV/AIDS Unit, the leading organization analyzing HIV/AIDS and human rights in India, has reported on how HIV/AIDS is exacerbating gender inequalities and how Indian laws perpetuate gender inequality and are ill equipped to resolve the varied difficulties faced by women with HIV/AIDS. In a study of 70 cases involving women living with HIV/AIDS between 1998 and 2001, it found that most women were between 18 and 30 years of age and that over 50 percent were widows, economically dependent and unemployed. Among the most critical issues was women's struggle to obtain maintenance from husbands or in-laws; other major issues included property rights, custody of children, discrimination in health care, consent and confidentiality, and harassment.[377]

See also the Household Impact section.

Widows

According to NFHS-2, 9.0 percent of Indian women are widows (9.2 percent of urban women and 9.0 percent of rural women). Among women age 50 and above, 43.4 percent are widows (among urban women age 50 and above, 45.2 percent are widows; for rural women in the same age group, 42.8 percent are widows).[378]

Dr. Martha Chen of Harvard cites the following reasons as contributing to the high number of widows in India: husbands are, on average, five years older than wives, and widow remarriage is infrequent.[379] After the death of a spouse, women are often forced to adhere to strict codes of dress, demeanor, and diet throughout their lives, far beyond the actual mourning period. For widows without relatives on whom to rely, social norms restrict their right to property and employment outside the home because of their gender, but restrict remarriage. Widowed men in India are not subject to the same restrictions: they can own property, are allowed to work outside the home, and have greater freedom to remarry.[380]

Widows are expected to remain in the husband's village, where they face social isolation, intensified if the husband has died because of AIDS (and the widow herself is infected). Most widows receive little economic support from their families or communities. Most live with unmarried children or as dependents on adult sons. Their legal rights, particularly in terms of property and inheritance rights, are often violated.[381] The NFHS-2 found that widows (in addition to women who were divorced, separated, or deserted) were more likely than currently married women to have been beaten by their in-laws.[382]

Recent news articles have highlighted how widows with HIV/AIDS have been stigmatized and abandoned by their in-laws and communities. Moreover, their children have been denied access to school, on the premise that they will infect other children. [383] (See the Stigma and Household sections.) Destitution combined with a lack of education could render children not already infected more vulnerable to acquiring HIV.

In a review of NACO, CHANGE found that NACO's vertical structure has led to lack of integration and coordination with sexual & reproductive health, child health, and family planning programs. NACO's focus on individual behavior change strategies for "high-risk" groups ignores the vulnerability of monogamous women. CHANGE recommends that NACO addresses women's simultaneous need for protection from unwanted pregnancy and HIV/STI infection by integrating HIV/AIDS and sexual & reproductive health programs, as well as by introducing dual protection strategies. It also points to the Sonagachi Project (see Sex Work section), among others, as a model of collective active that enables women to negotiate condom use and access integrated reproductive health, legal, and social services.[384]

Awareness and Knowledge of HIV/AIDS

To gauge population knowledge about HIV/AIDS, NACO undertook the National Baseline Behavioral Surveillance Survey (BSS) from April through September 2001. Three groups were surveyed: general population, sex workers and their clients, and MSM and IDU.

Methodology

General Population

States and union territories were categorized into 22 sampling units. There were 3,832 respondents ages 15-49 years (1,916 male and 1,916 female) in each sampling unit, with an equal number from urban and rural areas. A three-stage cluster-sampling format was used for identification of the sample. A total of 84,182 respondents were contacted across the country during the baseline survey. Of them, 49.9 percent were residing in urban areas, 50.5 percent were females. The median age of respondents was 29 years for females and 30 years for males for the entire sample. About 75 percent of respondents were currently married (ranging from a low of 56.2 percent in Goa to a high of 80.4 percent in Bihar). Average literacy level of sampled respondents was 75.1 percent (ranging from a low of 33.1 percent among rural females from Madhya Pradesh to a high of 99.3 percent among urban males in Kerala). Among male respondents, 18.4 percent were unemployed (includes respondents currently studying). Among women, 65.9 percent were housewives, and an additional 13.4 percent were unemployed (includes students).[385]

Sex Workers and Their Clients

32 states and UTs were categorized into 21 sampling units. A total of 5,648 clients of sex workers and 5,572 female sex workers were interviewed across all the sampling units. For each sampling unit, SWs were selected from the predominant type of sex work that was prevalent in that sampling unit. In addition, control groups of SWs were surveyed in Delhi, Mumbai,

Calcutta, and Andhra Pradesh, covering 1,087 respondents. These control groups were included to assess any significant differences between brothel and non-brothel-based SWs in these geographic locations. A four-stage cluster sampling design was adopted for selecting respondents among brothel-based SWs and a three-stage cluster sampling design was adopted for non-brothel-based SWs and clients of sex workers.[386]

MSM and IDU

Among MSM, the survey was carried out across in Delhi, Calcutta, Mumbai, Chennai, and Bangalore. (The operational definition of MSM was manual, oral, or anal sex with other men in the past six months.) Among IDUs, it was carried out in Delhi, Calcutta, Mumbai, Chennai, and Manipur. A total of 1,387 MSM and 1,355 IDUs were interviewed across all sampling units. A two-stage cluster sampling design was adopted for selecting both MSM and IDU respondents; in Manipur, a three-stage cluster sampling design was adopted for selecting respondents among IDUs.

Overall, 42 percent of MSM respondents were ages 19-25, and 39 percent were ages 26-35. Less than 5 percent were below age 19. The mean age of all respondents was 28. About 9 percent of sampled respondents were illiterate. Nearly 11 percent studied up to the primary level. About 19 percent had completed secondary education. At the aggregate level, there were more respondents engaged in service (21 percent), self-employment (13 percent), and petty business/ small shop owner (13 percent) than other primary occupations. Seven percent were students, and 13 percent were unemployed. About one-third of respondents had ever been married to a female partner. About two-thirds (64 percent) of respondents were not currently married nor living with any female partner. About one-fourth (26 percent) were currently married and living with their wives (female).[387]

Among IDU respondents, about 75 percent were between ages 19 and 35. The median age of respondents was 30. There was a wide variation in educational level of respondents across the five sites. The proportion of illiterate respondents was significantly higher in Calcutta (56 percent), Mumbai (42 percent), and Delhi (39 percent) compared with Chennai (15 percent) and Manipur (11 percent). Overall, 41.2 percent of respondents reported that they had ever been married. Nearly three-fifths of repsondents reported that they were not married and not living with any sexual partner. About 27 percent of respondents were currently married and living with their spouses. Overall, about one-quarter of respondents were nonagricultural or casual laborers. About 20 percent were unemployed or retired, 13 percent petty business/small shop owners, 8 percent transport workers, and 6 percent students. [388] (See also the Alcohol and Drug Use section below.)

Overall Awareness

The BSS asked respondents if they had heard of HIV/AIDS. No description of the disease or its symptoms was provided. So defined, overall, awareness of HIV/AIDS in India is 76 percent, though variance among states is significant: 99 percent of respondents in Kerala reported that they had heard of HIV/AIDS, as had 96 percent in Andhra Pradesh. However, only 40 percent of respondents in Bihar and 51 percent in Uttar Pradesh were aware of HIV/AIDS. There were also

major urban-rural differentials: 89 percent of urban BSS respondents were aware of HIV/AIDS, versus only 72 percent in rural areas.[389] (Moreover, the urban figure may mask lower HIV/AIDS awareness in urban slum areas. Among other factors, slums often have a large number of recent migrants from rural areas.[390] , [391]) (See figure 1.)

Gender differences are also striking: overall 82 percent of men surveyed were aware of HIV/AIDS, whereas among women, this figure was 70 percent. Across states, there was no exception to the finding of greater AIDS awareness among men than among women. The difference was most striking in Bihar, where 54 percent of men but only 27 percent of women, about half the rate in men, reported awareness.[392]

(The NHFS-2, conducted in 1998-99, found that 60 percent of ever-married Indian women had not heard of AIDS. Awareness of AIDS was particularly low among women not regularly exposed to media, women from scheduled tribes, illiterate women, women living in households with a low standard of living, and rural women.[393])

The BSS found that awareness among SWs, MSM, and IDUs is much higher than in the general population. Overall, 94 percent of SWs reported that they had heard of HIV/AIDS. State-level results varied from a high of 99 percent in Tamil Nadu to a low of 88 percent in Karnataka.[394] Among MSM, 97 percent reported awareness of the disease, with relatively little variation among large cities: 99 percent of MSM in Mumbai (Maharashtra), 98 percent in Chennai (Tamil Nadu), 96 percent in Bangalore (Karnataka), and 94 percent in Calcutta (West Bengal) reported that they had heard of HIV/AIDS. Finally, overall knowledge of HIV/AIDS among IDUs in India is 97 percent, with 100 percent reporting knowledge in Manipur, 98 percent in Chennai, 96 percent in Calcutta, and 95 percent in Mumbai.[395]

Figure 1. BSS: General Population: Awareness of HIV/AIDS

TABLE 3.4 PROPORTION OF RESPONDENTS WHO HAD EVER HEARD OF HIV/AIDS *(All figures are in percentage)*

Sl. No.	State Sampling Units	Urban			Rural			Combined*		
		M	F	T	M	F	T	M	F	T
1.	Andhra Pradesh	95.8	97.0	96.4	94.9	97.6	96.2	95.1	97.4	96.3
2.	Assam	91.5	85.6	88.5	72.4	57.7	65.1	74.5	60.8	67.7
3.	Bihar	84.3	62.8	73.6	49.1	21.5	35.3	53.7	26.9	40.3
4.	Delhi	90.3	86.3	88.3	93.3	81.9	87.4	90.6	85.9	88.2
5.	Goa+	99.0	94.6	96.8	95.6	87.2	91.4	97.0	90.2	93.6
6.	Gujarat+	86.8	61.6	74.2	67.6	25.0	46.1	74.3	37.5	55.7
7.	Haryana	92.5	85.2	88.8	83.6	64.7	74.2	85.8	69.8	77.8
8.	Himachal Pradesh	97.1	96.7	96.9	90.9	88.9	89.9	91.5	89.6	90.5
9.	Jammu and Kashmir	99.3	93.9	96.6	83.9	69.7	76.8	87.6	75.4	81.5
10.	Karnataka	95.1	88.0	91.6	86.5	74.8	80.7	89.1	78.9	84.0
11.	Kerala+	99.5	98.6	99.0	99.1	98.7	98.9	99.2	98.7	98.9
12.	Madhya Pradesh	92.5	78.2	85.4	61.9	32.3	47.0	69.0	42.9	55.9
13.	Maharashtra	96.0	90.2	93.1	80.6	69.2	74.9	86.6	77.3	81.9
14.	Manipur	98.5	98.6	98.6	96.6	89.5	93.1	97.1	92.0	94.6
15.	Orissa	91.5	81.4	86.5	73.0	55.1	64.1	75.4	58.6	67.1
16.	Other North East States	93.8	86.9	90.3	77.6	66.7	72.2	80.7	70.6	75.6
17.	Punjab+	98.2	90.9	94.6	94.9	86.6	90.8	96.0	88.0	92.0
18.	Rajasthan	90.0	77.5	83.6	70.0	45.0	57.3	74.6	52.5	63.3
19.	Sikkim	93.4	91.1	92.3	70.5	68.8	69.6	72.6	70.8	71.7
20.	Tamil Nadu+	96.1	94.3	95.2	88.3	83.7	86.0	91.0	87.4	89.2
21.	Uttar Pradesh	79.6	64.1	71.7	63.8	27.6	45.4	66.9	34.9	50.6
22.	West Bengal+	89.1	80.2	84.6	57.6	38.6	48.1	66.2	50.1	58.2
All India										
Mean		93.2	85.7	89.4	79.5	65.2	72.3	82.4	70.0	76.1

Source: NACO. *National Baseline General Population Behavioural Surveillance Survey: 2001*. New Delhi. <http://www.naco.nic.in/nacp/publctn.htm>

Misperceptions

The BSS also aimed to gauge the prevalence of misperceptions about how HIV is transmitted. Respondents were asked whether (1) HIV can be transmitted by mosquito bites, (2) HIV can be transmitted by sharing a meal with an infected person, or (3) a healthy looking person can have HIV. Overall, only 21 percent of respondents responded correctly to all three questions (i.e., "having no incorrect knowledge"), revealing a high level of misperception about HIV transmission (see figure 2).[396]

Figure 2. BSS: General Population: Correct Knowledge of HIV Transmission

TABLE 3.14 PROPORTION OF RESPONDENTS HAVING NO INCORRECT KNOWLEDGE ON TRANSMISSION OF HIV/AIDS

(All figures are in percentage)

Sl. No.	State Sampling Units	Urban			Rural			Combined*		
		M	F	T	M	F	T	M	F	T
1.	Andhra Pradesh	33.1	25.7	29.4	28.8	26.9	27.8	29.9	26.6	28.2
2.	Assam	18.5	15.8	17.2	9.0	6.5	7.7	10.0	7.5	8.8
3.	Bihar	19.0	15.5	17.3	7.4	4.1	5.7	8.9	5.6	7.2
4.	Delhi	29.1	19.1	24.0	25.4	13.8	19.4	28.7	18.5	23.5
5.	Goa+	30.4	37.3	33.8	28.0	24.9	26.5	29.0	30.1	29.5
6.	Gujarat+	21.8	16.1	18.8	11.8	4.5	8.1	15.2	8.5	11.8
7.	Haryana	30.6	27.1	28.8	19.2	14.9	17.1	22.0	17.9	20.0
8.	Himachal Pradesh	37.9	66.3	52.0	21.4	42.5	32.0	22.8	44.6	33.7
9.	Jammu and Kashmir	42.6	56.9	49.7	19.4	9.1	14.2	24.9	20.4	22.7
10.	Karnataka	9.6	7.1	8.3	6.4	5.9	6.2	7.3	6.3	6.8
11.	Kerala+	49.7	41.0	44.4	49.0	46.3	47.5	49.2	44.8	46.6
12.	Madhya Pradesh	18.2	17.8	18.0	8.2	5.0	6.6	10.5	7.9	9.2
13.	Maharashtra	42.7	40.3	41.5	32.0	20.0	26.0	36.2	27.8	32.0
14.	Manipur	72.9	52.5	62.7	35.8	22.6	29.2	45.9	30.8	38.4
15.	Orissa	21.2	20.4	20.8	10.2	5.6	7.9	11.7	7.6	9.7
16.	Other North East States	39.1	38.8	38.9	30.2	31.5	30.8	31.9	32.8	32.4
17.	Punjab+	41.3	42.4	41.8	30.2	34.7	32.4	33.7	37.1	35.4
18.	Rajasthan	24.3	25.1	24.7	18.4	14.3	16.3	19.8	16.8	18.2
19.	Sikkim	36.0	20.3	28.2	17.8	13.2	15.5	19.5	13.9	16.7
20.	Tamil Nadu+	27.2	12.0	19.6	16.3	5.9	11.1	20.0	8.0	14.0
21.	Uttar Pradesh	17.6	14.8	16.2	9.3	4.3	6.7	10.9	6.4	8.6
22.	West Bengal+	26.0	26.6	26.3	12.3	8.6	10.5	16.1	13.6	14.8
All India										
Mean		31.2	29.1	30.1	20.1	16.8	18.4	22.7	19.9	21.3
Standard Deviation		13.8	15.8	13.9	11.1	12.9	11.5	11.7	12.7	11.7
Median		29.8	25.4	27.3	18.8	13.5	15.9	21.0	17.4	19.1
Range		9.6-72.9	7.1-66.3	8.3-62.7	6.4-49.0	4.1-46.3	5.7-47.5	7.3-49.2	5.6-44.8	7.2-46.6

* Weighted figures Base: All Respondents

Source: NACO. *National Baseline General Population Behavioural Surveillance Survey: 2001*. New Delhi. <http://www.naco.nic.in/nacp/publctn.htm>

Among higher-risk groups, misperceptions were far less prevalent. Over 84 percent of MSM are aware that HIV is not transmitted by sharing a meal with an infected person, and variation ranged from a low of 70 percent in Calcutta to a high of 91 percent in Chennai. In addition, 78 percent of MSM are aware that HIV cannot be transmitted by mosquitoes, ranging from 55 percent in Calcutta to nearly 90 percent in Bangalore and Chennai. Overall, 71 percent are aware that a healthy person may have HIV, and variation ranged from 55 percent in Bangalore to 89 percent in Mumbai (see figure 3).[397]

Figure 3. BSS: MSM: Correct Knowledge of HIV Transmission

TABLE 3.12 Correct Beliefs about HIV transmission *(All figures are in percentages)*

City	Aware that HIV is not transmitted through		Aware that a healthy person may be suffering from HIV	Respondents correctly identifying all three issues
	Sharing a meal	Mosquito Bite		
Bangalore	88.5	88.5	55.2	46.3
Chennai	90.8	89.7	75.7	69.1
Delhi	84.3	81.3	70.2	54.2
Kolkata	70.0	54.8	63.0	34.4
Mumbai	86.6	75.4	88.8	63.8
Total	**84.1**	**78.0**	**70.7**	**53.6**

Base: All respondents

Source: NACO. *National Baseline High Risk and Bridge Population Behavioural Surveillance Survey: 2002: Part 2.* New Delhi <http://www.naco.nic.in/nacp/publctn.htm>

Among IDUs, 69 percent are aware that HIV is not transmitted by sharing a meal, and 67 percent are aware that the virus cannot be spread through mosquito bites. Again, a high level of variation is seen at the local level; 52 percent in Calcutta, 60 percent in Mumbai, and 91 percent in Manipur hold correct beliefs about sharing a meal and HIV transmission, while 53 percent in Calcutta, 49 percent in Mumbai, and 91 percent in Chennai hold correct beliefs regarding mosquito bites and HIV. Awareness that a healthy person can have HIV is slightly higher, with 71 percent holding correct beliefs (variation ranged from 54 percent in Delhi to 83 percent in Mumbai) (see figure 4).[398]

Figure 4. BSS: IDUs: Correct Knowledge of HIV Transmission

TABLE 4.27 Correct Beliefs about HIV transmission *(All figures are in percentages)*

City/State	Proportion aware that HIV is not transmitted through		Proportion aware that a healthy looking person may be suffering from HIV	Proportion of respondents correctly identifying all three issues
	Sharing a meal	Mosquito bites		
Chennai	81.5	91.1	75.6	61.9
Delhi	54.7	50.7	53.6	24.8
Kolkata	51.7	53.0	68.3	29.6
Manipur	90.7	87.8	71.4	60.8
Mumbai	60.0	48.9	83.3	31.1
Total	**68.9**	**67.3**	**70.5**	**42.5**

Base: All respondents

Source: NACO. *National Baseline High Risk and Bridge Population Behavioural Surveillance Survey: 2002: Part 2.* New Delhi <http://www.naco.nic.in/nacp/publctn.htm>

Finally, among sex workers, 63 percent are aware that HIV is not transmitted by sharing a meal. Nearly 66 percent of all respondents are aware that mosquito bites are not responsible for HIV transmission. A smaller proportion (58 percent) are aware that a healthy looking person may have HIV; further, among brothel-based SWs, 63 percent knew that a health looking person could have HIV, whereas this figure was 55 percent among non-brothel-based SWs (see figure 5).[399]

Figure 5. BSS: SWs: Correct Knowledge of HIV Transmission

TABLE 3.10 CORRECT BELIEFS ABOUT HIV TRANSMISSION *(All figures are in percentages)*

Sl. No.	State/State Group	Proportion Aware that HIV is not transmitted through		Proportion Aware that a healthy looking person could be suffering from HIV	Proportion of Respondents correctly identifying all three issues
		Sharing a meal with infected person	From mosquito bites		
1.	Andhra Pradesh	69.4	64.2	64.2	31.2
2.	Assam	65.5	57.9	67.8	32.2
3.	Bihar+	53.4	71.9	63.2	25.7
4.	Delhi	73.3	72.6	55.6	33.1
5.	Goa	85.9	76.0	54.8	38.5
6.	Gujarat	57.9	69.0	51.7	19.4
7.	Haryana	39.3	50.9	31.8	12.2
8.	Himachal Pradesh	49.0	39.9	26.2	7.7
9.	Jammu & Kashmir	67.6	76.5	32.4	21.1
10.	Karnataka	54.5	77.0	50.6	21.7
11.	Kerala	60.7	70.4	71.2	41.5
12.	Madhya Pradesh +	37.1	52.3	51.2	12.0
13.	Maharashtra	78.9	68.0	64.3	37.2
14.	Manipur	87.7	71.9	67.7	47.6
15.	Orissa	54.2	61.8	83.3	32.0
16.	Other NE States+	54.8	70.3	72.4	31.6
17.	Punjab+	43.8	43.4	46.3	18.0
18.	Rajasthan	80.7	73.2	36.6	22.5
19.	Tamil Nadu+	83.5	93.3	71.2	60.6
20.	Uttar Pradesh+	62.5	75.1	64.0	28.6
21.	West Bengal	64.3	51.1	71.1	32.3
Brothel Based		**63.9**	**66.0**	**63.4**	**29.8**
Non Brothel Based		**63.0**	**65.7**	**54.5**	**28.5**
All India		**63.4**	**65.8**	**58.1**	**29.0**

Base: All Respondents

Source: NACO. *National Baseline High Risk and Bridge Population Behavioural Surveillance Survey: 2001: Part 1.* New Delhi <http://www.naco.nic.in/nacp/publctn.htm>

Perception of Risk

Higher-risk groups were also asked whether they perceived themselves to be at high risk of contracting HIV. Overall, 27 percent of MSM perceive themselves to be at very high risk of acquiring HIV, whereas 29 percent reported moderate risk, 27 percent reported low risk, and 18 percent reported no risk at all of becoming infected with HIV. In terms of variation by city, 44 percent of MSM in Chennai and 40 percent in Mumbai perceive themselves to be at very high risk of contracting HIV, whereas only 14 percent in Delhi and 16 percent in Calcutta perceive themselves to be at very high risk (see figure 6).[400]

Figure 6. BSS: MSM: Risk Perception

TABLE 3.34 Risk perception of getting infected with HIV/AIDS *(All figures are in percentages)*

City	Very high	Moderate	Low	No chance
Bangalore	20.7	21.5	27.0	30.7
Chennai	44.1	29.8	17.6	8.5
Delhi	14	40.1	26.4	19.4
Kolkata	15.6	17.4	42.6	24.4
Mumbai	40.2	32.2	21.0	6.5
Total	**26.7**	**28.5**	**26.9**	**17.9**

Base: All Respondents

Source: NACO. *National Baseline High Risk and Bridge Population Behavioural Surveillance Survey: 2002: Part 2*. New Delhi <http://www.naco.nic.in/nacp/publctn.htm>

Among IDUs, 35 percent perceive themselves to be at very high risk of contracting HIV, 20 percent perceive themselves to be at moderate risk, 27 percent perceive a low risk, and 17 percent perceive no risk at all. There are large variations by city; 72 percent of IDUs in Mumbai perceive themselves to be at very high risk of acquiring HIV, whereas 38 percent in Chennai, 24 percent in Manipur, and a very low 4 percent in Calcutta perceive themselves to be at very high risk (figure 7).[401]

Figure 7. BSS: IDUs: Risk Perception

TABLE 4.40 Perception regarding Risk of Contracting HIV/AIDS *(All figures are in percentages)*

City/State	Very high	Moderate	Low	No chance
Chennai	38.1	19.6	27	14.8
Delhi	30.7	14.6	39.1	11.3
Kolkata	4.3	17.8	26.5	47
Manipur	24.1	26.0	33.1	15.8
Mumbai	72.2	20.0	6.3	1.1
Total	**34.5**	**19.9**	**26.6**	**17**

Base: All Respondents

Source: NACO. *National Baseline High Risk and Bridge Population Behavioural Surveillance Survey: 2002: Part 2*. New Delhi <http://www.naco.nic.in/nacp/publctn.htm>

Nationally, a strikingly low 17 percent of sex workers perceive themselves to be at very high risk of contracting HIV/AIDS. Approximately 26 percent reported a moderate chance of infection, 31 percent a low chance, and 17 percent no chance of acquiring HIV. Wide variation is seen at the state level. Moreover, whereas 21 percent of brothel-based SWs perceived themselves at very

high risk of HIV, only 14 percent of non-brothel-based SWs reported this level of perceived risk (figure 8).[402]

Figure 8. BSS: SWs: Risk Perception

TABLE 3.27 PERCEPTION REGARDING RISK OF CONTRACTING HIV/AIDS *(All figures are in percentages)*

Sl.	State/State Group	Very high	Moderate	Low	No chance
1.	Andhra Pradesh	10.0	29.4	45.5	14.7
2.	Assam	33.7	21.5	34.4	5.2
3.	Bihar+	16.7	20.5	31.6	19.4
4.	Delhi	10.4	32.7	33.1	14.1
5.	Goa	8.1	23.3	38.1	28.1
6.	Gujarat	9.4	20.1	38.5	18.1
7.	Haryana	5.9	28.5	29.6	10.0
8.	Himachal Pradesh	0.4	6.6	36.2	41.3
9.	Jammu & Kashmir	10.5	8.8	28.9	29.8
10.	Karnataka	28.1	24.7	29.2	12.4
11.	Kerala	13.0	33.7	39.3	12.2
12.	Madhya Pradesh +	42.4	13.0	21.0	13.0
13.	Maharashtra	26.0	25.7	26.8	19.0
14.	Manipur	23.2	39.7	32.2	4.1
15.	Orissa	26.5	15.4	23.9	21.3
16.	Other NE States+	16.9	36.0	22.1	13.6
17.	Punjab+	4.9	25.1	33.7	19.9
18.	Rajasthan	4.4	34.7	21.8	18.5
19.	Tamil Nadu+	19.7	49.4	23.8	7.1
20.	Uttar Pradesh+	28.2	11.4	25.6	30.4
21.	West Bengal	11.7	42.2	27.0	18.4
Brothel Based		**21.2**	**23.1**	**28.4**	**20.5**
Non Brothel Based		**14.0**	**28.4**	**32.1**	**15.3**
All India		**16.8**	**26.3**	**30.7**	**17.3**

Base: All Respondents

Source: NACO. *National Baseline High Risk and Bridge Population Behavioural Surveillance Survey: 2001: Part 1*. New Delhi <http://www.naco.nic.in/nacp/publctn.htm>

Sexual Behavior

The general population BSS found that nearly 7 percent of adults surveyed reported having sex with a nonregular partner in the last 12 months. (A nonregular partner was defined as one to whom the respondent was not married or with whom the respondent had never lived and with whom the respondent did not pay for sexual intercourse.) Again, results vary substantially by state. Although a small percentage in West Bengal, Tamil Nadu, and Karnataka reported having sex with a nonregular partner (2, 3, and 4 percent respectively), 11 percent in Maharashtra and 13 percent in Andhra Pradesh reported sex with a nonregular partner. Sex with a nonregular partner is somewhat higher in urban areas, where 7 percent reported having sex with a nonregular partner in the last 12 months, versus 6 percent in rural areas (figure 9).[403]

The difference between men and women, however, is striking: 12 percent of men versus only 2 percent of women report having had sex with a nonregular partner. There is little difference in this gender variation in rural versus urban areas. The percentage of urban males reporting a nonregular partner in the last 12 months ranges from a low of 3 percent in Manipur to a high of 23 percent in Maharashtra.[404]

Figure 9. BSS: General Population: Sex with Nonregular Partner

TABLE 3.27 PROPORTION OF RESPONDENTS WHO REPORTED HAVING SEX WITH ANY NON-REGULAR PARTNER IN LAST 12 MONTHS

(All figures are in percentage)

Sl. No.	State Sampling Units	Urban			Rural			Combined*		
		M	F	T	M	F	T	M	F	T
1.	Andhra Pradesh	16.2	8.0	12.1	21.7	7.5	14.6	19.2	7.4	13.3
2.	Assam	4.9	0.8	2.6	10.3	1.9	5.7	9.8	1.8	5.4
3.	Bihar	13.6	4.7	8.7	11.3	4.1	7.5	11.5	4.2	7.6
4.	Delhi	7.7	0.5	3.9	9.5	0.0	4.3	7.9	0.4	3.9
5.	Goa +	18.9	1.3	9.8	14.0	1.0	7.0	16.1	1.1	8.2
6.	Gujarat +	19.9	0.5	9.7	17.2	0.9	8.7	18.1	0.8	9.1
7.	Haryana	8.2	1.5	4.7	8.7	1.6	4.9	8.6	1.6	4.8
8.	Himachal Pradesh	4.3	0.3	2.1	6.1	0.5	3.2	6.0	0.5	3.1
9.	Jammu & Kashmir	6.7	0.5	3.4	14.3	3.2	8.3	12.5	2.6	7.2
10.	Karnataka	5.4	1.6	3.3	8.9	1.1	4.7	7.9	1.3	4.2
11.	Kerala +	10.6	2.1	4.8	10.9	3.2	6.1	10.8	2.9	5.7
12.	Maharashtra	23.4	14.6	19.0	9.8	2.6	6.2	15.0	7.3	11.1
13.	Manipur	2.5	1.1	1.8	5.6	0.4	2.9	4.8	0.6	2.6
14.	Madhya Pradesh	22.6	1.0	10.8	17.8	0.3	8.7	18.8	0.5	9.2
15.	Orissa	6.6	0.1	3.0	5.0	0.4	2.6	5.2	0.4	2.6
16.	Other North East States	18.5	2.5	10.2	15.5	2.3	8.6	16.0	2.3	8.9
17.	Punjab +	13.2	1.7	7.1	10.8	1.1	5.6	11.5	1.3	6.1
18.	Rajasthan	5.7	0.5	2.8	4.4	0.6	2.4	4.7	0.6	2.5
19.	Sikkim	15.9	1.9	8.8	13.5	1.4	7.5	13.7	1.5	7.6
20.	Tamil Nadu +	7.4	0.9	3.7	6.2	0.6	3.1	6.6	0.7	3.3
21.	Uttar Pradesh	6.2	0.5	3.1	8.8	0.4	4.2	8.3	0.4	4.0
22.	West Bengal +	5.6	1.0	3.0	3.2	0.9	1.9	3.8	1.0	2.2
All India										
Mean		12.6	2.3	7.0	11.4	1.8	6.3	11.8	2.0	6.6

Source: NACO. *National Baseline General Population Behavioural Surveillance Survey: 2001*. New Delhi. <http://www.naco.nic.in/nacp/publctn.htm>

Of the subsection of the general population that reported sex with a nonregular partner in the past 12 months, the BSS survey asked respondents whether they use condoms consistently with all nonregular partners. Overall, 32 percent reported consistent condom use with all nonregular partners. However, consistent condom use varied widely by state; although 60 percent of those in Maharasthra reported consistent condom use with a nonregular partner, only 25 percent in Andhra Pradesh reported such use. [405]

Among MSM who had commercial sex in the month prior to the survey, 13 percent reported consistent condom use with commercial male partners. (A commercial partner was defined as one with whom the respondent had sex in exchange for money.) This contrasts dramatically with the 30 percent of MSM reporting consistent condom with a noncommercial male partner in the month prior to the survey. At the state level, 33 percent of those in Mumbai who had commercial sex reported using condoms consistently, whereas a low 8 percent in Calcutta and 9 percent in Bangalore reported using condoms consistently with commercial partners. Among MSM who had sex with a noncommercial partner in the month prior to the survey, wide variation also occurred at the local level; 56 percent in Mumbai reported consistent condom use with noncommercial partners, whereas 11 percent in Delhi and 20 percent in both Calcutta and Chennai reported consistent condom use (figure 10).[406]

Figure 10. BSS: MSM: Consistent Condom Use with Nonregular and Commercial Partners

TABLE 3.29 Consistent Condom Use with Commercial/Non-Commercial Male Partners in Last One Month

(All figures are in percentages)

City	Consistent condom use with commercial male partners*	Consistent condom use with non-commercial male partners **
Bangalore	8.9	43.7
Chennai	15.6	19.2
Delhi	13.9	11.3
Kolkata	7.5	20.6
Mumbai	33.3	56.4
Total	**12.6**	**30.3**

** Base: Those who had sex with any commercial male partner in last 1 month*
** * Base: Those who had sex with any non-commercial male partner in last 1 month*

Source: NACO. *National Baseline High Risk and Bridge Population Behavioural Surveillance Survey: 2002: Part 2.* New Delhi <http://www.naco.nic.in/nacp/publctn.htm>

Among IDUs, the BSS found that 10 percent had sex with any nonregular partner in the last 12 months, with the highest percentages in Delhi (18 percent) and Manipur (14 percent). Overall, 16 percent had sex with any commercial partner in the last 12 months, ranging from 8 percent in Mumbai to 25 percent in Delhi.[407] However, a study in Delhi found a much greater level of high-risk sexual behavior among drug users (both injecting and noninjecting). Seventy drug users were compared with 128 non-drug users, randomly selected from the same community and matched by age and economic status. Seventy-eight percent of sexually active drug users had multiple sex partners, and drug users were 6.7 times more likely to visit commercial sex workers.[408] A study in Chennai of 350 male, long-term IDUs found that 28.9 percent were HIV-positive. Seventy-one percent shared injecting equipment, and 51 percent visited sex workers "frequently." In the sample, 63 percent were married. HIV-positive IDUs had a significantly long duration of injection use ($p<0.05$), more frequent history of sex with sex workers ($p<0.01$), and more concurrent use of alcohol ($p<0.01$).[409] (Note that in this sample, 77 percent of participants were employed, and 56 percent had attained secondary level education.)

Among IDUs who reported sex with any nonregular partner in the 12 months prior to the survey, 12 percent reported using condoms consistently with these partners. Thirty-two percent reported

consistent condom use with commercial partners, and only 6 percent reported consistent condom use with regular partners (figure 11).[410]

Figure 11. BSS: IDUs: Consistent Condom Use with Nonregular Partner

TABLE 4.36 Consistent Condom Use with Commercial/ Non-Regular/ Regular Partners in Last Twelve Months

(All figures are in percentages)

City/State	Consistent condom use with commercial partners *	Consistent condom use with non regular partners**	Consistent condom use with regular partners***
Chennai	37.5	11.5	8.0
Delhi	17.4	8.3	4.8
Kolkata	40.0	20.0	1.8
Manipur	34.3	14.3	6.8
Mumbai	52.4	11.1	8.3
Total	**31.8**	**11.9**	**6.1**

** Base: Those who had sex with any commercial partner in last 12 months*
*** Base: Those who had sex with any non regular partner in last 12 months*
**** Base: Those who had sex with any regular partner in last 12 months*

Source: NACO. *National Baseline High Risk and Bridge Population Behavioural Surveillance Survey: 2002: Part 2*. New Delhi <http://www.naco.nic.in/nacp/publctn.htm>

Finally, among sex workers, 50 percent reported consistent condom use with paying clients in the last 30 days (though the figure was higher for brothel-based [57 percent] vs. non-brothel-based SWs [46 percent]). However, among those who had sex with a nonpaying partner in the three months prior to the survey, only 21 percent reported using condoms consistently. At the state level, 73 percent of SWs in Maharashtra use condoms consistently with their paying clients, whereas 54 percent in Tamil Nadu and 39 percent in West Bengal do so. With nonpaying partners, 7 percent of SWs in Maharasthra, 9 percent in Tamil Nadu, and 10 percent in West Bengal use condoms consistently (figure 12).[411]

Figure 12. BSS: SWs: Condom Use

TABLE 3.21 CONDOM USAGE WITH PAYING CLIENTS AND NON PAYING PARTNERS

(All figures are in percentages)

Sl. No.	State/State Group	Last Time Condom Usage		Consistent Condom Usage in Last 30 days	
		With Paying Clients	With Non Paying Partners*	With Paying Clients	With Non Paying Partners in last 3 months*
1.	Andhra Pradesh	78.9	58.2	53.1	29.1
2.	Assam	75.2	48.5	26.9	12.6
3.	Bihar+	65.3	20.0	23.9	5.3
4.	Delhi	72.5	66.7	63.6	45.8
5.	Goa	77.0	44.2	69.3	32.6
6.	Gujarat	77.1	34.5	58.1	26.8
7.	Haryana	69.6	16.6	27.6	7.3
8.	Himachal Pradesh	87.8	35.7	41.0	16.3
9.	Jammu & Kashmir	80.7	26.3	50.9	6.3
10.	Karnataka	73.4	58.6	55.7	33.7
11.	Kerala	87.8	48.0	73.7	38.2
12.	Madhya Pradesh +	70.9	49.2	65.0	28.5
13.	Maharashtra	87.7	39.3	72.5	7.1
14.	Manipur	71.8	67.9	53.3	44.9
15.	Orissa	73.0	53.6	65.2	38.5
16.	Other NE States+	64.1	40.2	23.7	20.5
17.	Punjab+	79.0	25.4	45.8	9.7
18.	Rajasthan	67.8	25.6	33.8	13.3
19.	Tamil Nadu+	83.3	25.0	54.1	9.2
20.	Uttar Pradesh+	68.9	41.5	61.9	13.8
21.	West Bengal	86.5	22.6	39.0	9.5
Brothel Based		**75.2**	**39.0**	**57.2**	**21.3**
Non Brothel Based		**76.5**	**38.7**	**45.8**	**20.2**
All India		**76.0**	**38.8**	**50.3**	**20.5**

Base: All Respondents

** Base: Those Respondents who reported any Non Paying Partner in the last 7 days*

Source: NACO. *National Baseline High Risk and Bridge Population Behavioural Surveillance Survey: 2001: Part 1*. New Delhi <http://www.naco.nic.in/nacp/publctn.htm>

Youth

India has an enormous population of young people, with about 385 million people under age 15.[412] Among reported AIDS cases to date, those under age 30 represent 39.7 percent of cases.[413]

However, according to a study by MAMTA Health Institute for Mother & Child, government policies and programs, including those related to HIV/AIDS, have largely ignored adolescents. There is a crucial need for sexual & reproductive health and HIV/AIDS information and services.[414] In a study of the patterns and determinants of sexual behavior among unmarried adolescents, MAMTA found that knowledge among adolescents regarding safer sex and condoms is inadequate and inconsistent. The information that is imparted to youth is intrinsically

tied to societal attitudes on sexual desire and behavior. These attitudes may have little correspondence to prevailing sexual behavior. For example, the community in general, and parents of adolescents in particular, stress that knowledge on sexual behavior is not required until after marriage. There is great reluctance to acknowledge that unmarried people have sex. Adolescents themselves, however, report a considerable amount of sexual activity, that in some cases includes intercourse. They express a strong need to gain more information on issues of sexuality and sexual behavior. [415]

Studies by FXB India have highlighted that adolescent girls in Mumbai are highly vulnerable to HIV given their lack of sexual and HIV/AIDS education.[416] Belaku Trust and India's National Institute of Mental Health and Neurosciences deployed a cross-sectional survey of 1,500 rural and semirural 14- and 15-year-old school-going adolescents in south India. They found strong gender disparities in HIV/AIDS knowledge, information sources, and consequences of sex. Although overall knowledge of HIV/AIDS was low, rural residence, being female, and low socioeconomic status were correlated with low awareness of HIV transmission and prevention. Boys were significantly more likely to link condoms with HIV prevention. Main HIV/AIDS information sources for girls were relatives (older sister, mother). For boys, the main sources are TV, films, sex films, sex books, and male friends, a reflection of greater physical and social mobility. All participants exhibited zero knowledge of STIs other than HIV. Moreover, girls' knowledge of menstruation was very incomplete.[417] Shantideep, an adolescent health project in Jaipur, Rajasthan, has also documented that not only are there gaps in adolescents' knowledge of HIV/AIDS, but that that knowledge of menstruation, masturbation, and other STIs is poor. [418]

Discomfort with discussing sexual behavior has severely constrained India’s ability to address the sexual & reproductive health needs of young people. There is a paucity of accurate information on sex and sexuality. Adolescents who seek sexual & reproductive health services are often met by judgmental health providers; unmarried girls in particular face stigma, which affects their chances for marriage. Service delivery offers little or no privacy or confidentiality. Consequently, both girls and boys often seek substandard/illegal services.[419]

Population Action International reports that premarital sex and pregnancy are more common in India than generally acknowledged. Persistent ambivalence about sex education has also impeded the full implementation of a population and family life education program begun in the early 1980s. Although sex education has recently been included in India’s National Curriculum, state officials dilute messages to which they object and teachers omit topics with which they are uncomfortable.[420]

MSM

See also the Population Mobility, Knowledge, Alcohol, and Human Rights sections.

Indian Penal Code 377, based on a 19th-century British law, criminalizes "the act of anal and oral sex performed either between two men or between a man and a woman."[421] (There is currently a petition before the New Delhi High Court to repeal section 377. [422]) Homosexuality is a taboo topic in India, and MSM are severely marginalized. [423] Several studies have found that men report their male-to-male sexual activities as *masti* (fun or play) or to initiate sexual

experiences, and do not equate them with sexual identities such as "gay," "bisexual," or "homosexual".[424] , [425] This scenario may be one reason why condom use among MSM is low; other reasons include police harassment.[426] Many MSM are married or have sex with females, and may act as a bridge population. [427] , [428] FXB India conducted a survey among 72 MSM in Mumbai. It found that 89 percent also have sex with women. Possible strained relations with spouses, stigmatization of their families, and discrimination by society were explanations given for not revealing their MSM sexuality openly.[429] As mentioned above, India's BSS found that about one-third of MSM respondents had ever been married to a female partner. About two-thirds (64 percent) of respondents were not currently married nor living with any female partner. About one-fourth (26 percent) were currently married and living with their wives (female).[430]

Male-to-female transgenders (TG) experience further discrimination and stigmatization, particularly if they work in the sex trade (as many do[431]). Several studies have found high HIV prevalence among TG, which further compound their sense of isolation and marginalization.[432]

One of the reasons for sex work is to pay for sex reassignment surgery (SRS), as well as hormones, facial hair removal, scalp hair growth, and voice change. SRS has ambiguous legal status in India and is thus not performed in government or private hospitals. Plastic surgeons who perform SRS charge heavily. Consequently, many TG go to unqualified medical practitioners or older TG for emasculation, often resulting in urinary problems.[433]

The Humsafar Trust works with MSM in Mumbai and is one of India's two MSM HIV surveillance sites. Humsafar collaborates with the departments of Microbiology and Dermatology of LTM Medical College and General Hospital on surveillance as well as provision of sexual health services to MSM. At the XIV International AIDS Conference in Barcelona in July 2002, Humsafar and LTM presented cumulative data on men who had been tested for HIV at its clinic since July 1999 (n=1,400; 1,276 men + 124 TG). Of all clients, 57.9 percent were homosexual, 27 percent bisexual, and 15.1 percent heterosexual (terms used in VCT instrument). Among all clients, HIV positivity was 19.65, 10.58, and 10.84 percent among homosexuals, bisexuals, and heterosexuals, respectively. (Among TG, 41.12 percent were HIV-positive; among the men, 13.41 percent.) Of those who tested positive for HIV, 94.57 percent were between ages 19 and 35.[434] , [435]

In Barcelona, Humsafar, LTM, and UCSF presented data on the first 150 clients tested for HIV since March 2001 (122 men + 28 TG). They found that 17 percent of men and 68 percent of TG were HIV-positive. For both men and TG, HIV was significantly associated with syphilis, hepatitis C, and herpes. [436] , [437]

Among men, 17 percent tested positive for syphilis, 10 percent for hepatitis B surface antigen, 8 percent for hepatitis C, 40 percent for HSV-2, and 11 percent for chlamydia. Among men, HIV prevalence was 48 percent in those with syphilis; 62 percent in those with hep C; and 38 percent in those with herpes. The study also found that 22 percent of men were married, of whom 2 percent were HIV-positive. Of married men, 65 percent had children and 20 percent were living with wives. Among men, 44 percent had visited female sex workers. HIV was associated with ($p<.05$) having first sexual experience with a man (26% HIV+ vs. 8%); >10 lifetime male

partners (21% HIV+ v 8%), and having receptive anal sex in the last six months (21% HIV+ v 15%).[438] , [439]

Among TG, 57 percent tested positive for syphilis, 21 percent for hepatitis B surface antigen, 22 percent for hepatitis C, 71 percent for HSV-22, and 0 percent for chlamydia. [440] , [441] HIV prevalence was 88 percent in those with syphilis; 100 percent in those with hep C; and 80 percent in those with herpes. All TG practiced receptive anal sex, and had >10 sexual partners in the last six months. [442] , [443]

Regarding condom use, 24 percent of men and 11 percent of TG reported using condoms sometimes during receptive anal sex; frequency of condom use was not associated with decreased HIV infection. Eighty-two percent of men and 75 percent of TG reported that their sex partners would be angry if they insisted on condom use; 85 percent of both groups believed that condoms were not necessary with someone who appears healthy; and 67 percent of men and 88 of TG reported that they would be harassed by police for carrying them. About half of men and TG responded that condoms were costly, difficult to find, and embarrassing to buy. Of men, 83 percent did not feel at risk of acquiring HIV, of whom 20 percent were HIV-positive; the comparable figures for TG were 88 and 64 percent. Only 8 percent of men and 16 percent of TG had previously tested for HIV. [444] , [445]

Other studies have also found that condom use among TG is generally very low; one reason is that many MSM view such sex as *masti*. These include *giriyas* (men who pay to have sex with TG and penetrate them anally). Most TG have little to no access to HIV/STI information and services and so may not be aware of the risk involved. [446] Studies have found that alcohol use and suicidal ideation are common among TGs, which may hinder their ability to use condoms or lead to a sense of fatalism.[447] Moreover, given their marginalization and low status, TGs may be unable to negotiate condom use with their clients. [448]

A study by Johns Hopkins University and India's Foundation for Research on Health Systems surveyed male college students who have ever had sex with men (MESM). Using a self-administered questionnaire (n=1,573), along with multiple in-depth interviews with 35 students, the study was conducted at two male colleges in southern India. The researchers found that 32 percent (n=498) were sexually active. Among them, 53 percent reported a history of sex with men. Of these students, 30 percent engaged in anal sex, 38 percent in oral sex, and 69 percent in mutual masturbation with men. Only 6 percent used condoms during anal sex at first sexual experience, and only 15 percent had ever used condoms with their last partner. MESM have significantly lower condom use rates compared to college males who have ever had sex with women ($p<0.01$). Characteristics associated with college MESM included low rates of socializing at public venues (OR=3.9), belief that condoms do not make sex safer (OR=2.7), religious parents (OR=1.7), being Catholic (OR=1.7), and having less spending money (OR=1.8). MESM do not necessarily self-identify as being homosexual, and many have had sex with men due to lack of sexual opportunity with women.[449]

The Naz Foundation, among others, has examined how MSM and TG — because they do not represent the dominant concept of masculinity — are vulnerable to sexual and physical violence.[450] A study presented in Barcelona in July 2002 discussed how during *langan* (the

wedding season), *kothis* in Bihar and Uttar Pradesh visit villages and towns to dance, with gang rape and other violence (sometimes fatal) against *kothis* occurring.[451]

Sex Work

See also the Population Mobility, Gender, Violence, Knowledge, Alcohol, and Human Rights sections.

Although sex work is legal in some states, concomitant activities including soliciting and brothelkeeping are penalized.[452]

Poverty and marital abandonment are two reasons why women enter sex work.[453] As discussed above, many girls and women are also coerced into it. Sex workers also face emotional, sexual, and physical violence, which affects their ability to protect themselves from HIV.[454] Human Rights Watch reports that Indian SWs are treated with contempt and commonly subjected to violations of their fundamental rights by the police, both at the time of their arrest and while in detention. HRW also documents increasing violence against outreach workers and peer educators who work with SWs (and MSM).[455]

The national BSS discussed above found that 61 percent of female SWs were illiterate. The highest proportions of illiterates were observed in Uttar Pradesh (90 percent), Bihar (84 percent), Maharashtra (83 percent), Madhya Pradesh (81 percent), Assam (79 percent), and West Bengal (7 percent). The percentage of brothel-based SWs who were illiterate was much higher (77 percent) than the percentage of illiterate non-brothel-based SWs (51 percent). Sixty-two percent of SWs interviewed in BSS had ever been married; almost one-third of these respondents were first married when they were under age 15. For 65 percent of ever-married respondents, age at first marriage was between 15 and 21. Overall, 38 percent of respondents were not currently married or living with a sexual partner; 29 percent were currently married and living with a spouse; and 16 percent were currently married but not living with a spouse or other sexual partner. The proportion of brothel-based SWs not currently married and not living with a sexual partner was higher than that for non-brothel-based SWs (53 and 28 percent, respectively). Nearly one-third of non-brothel-based SWs had additional sources of income, including petty business (6.2 percent) or work as a maidservant (6 percent).

HIV Prevalence

Mumbai has the country's largest brothel-based sex industry, with over 15,000 sex workers.[456] According to Committed Communities Development Trust, 70 percent of sex workers in Mumbai are HIV-positive.[457] The Mumbai government and the NGO Asha put this figure at 62 percent. SWs in Mumbai are controlled by madams, pimps, and moneylenders. Because of complex power dynamics, reaching SWs with HIV prevention services is a major challenge.[458]

A longitudinal study in Surat found that HIV prevalence among sex workers had increased from 18.5 percent in 1992 (n=108) to 43.2 percent in 2000 (n=124). During this period, syphilis increased from 18.5 to 29.4 percent.[459]

The Sonagachi Project

In 1992, the All India Institute of Hygiene and Public Health launched a program to reduce the transmission of HIV in Sonagachi, a red-light district in central Calcutta. The project began with two key interventions: a health clinic and outreach by peer educators.[460]

Peer education initially targeted about 5,000 female sex workers. Sonagachi was divided into 25 administrative zones. A team of two peer workers (who are from the community and trained as health educators) carried out outreach activities, including education, condom promotion, and follow-up of STI cases. A pair of zones was supervised by another sex worker who was designated as supervisor based on her skill and a minimum of three years' experience in the same work. Her role was to influence the community through formation of zonal self-help groups so that the group, as a whole, could take joint decision to ensure condom use by their clients. A client refused by a sex worker in the same zone could not be entertained by others in that zone. Creating peer pressure within the community aided in increasing condom use. When the project was launched in 1992, 2.70 of sex workers reported condom use. In 1995, this figure had risen to 81.70 percent. In 1998, it was 82.72 percent, and in 2001, 86.29 percent. [461]

In 1992, the year the project began, consistent condom use with clients was 1 percent. By 1998, this figure had reached 50 percent of SWs within the project. During the same period, syphilis prevalence among SWs covered by the project fell from 25 to 11 percent. In 1998, HIV prevalence among SWs was 5 percent (compared to 51 percent in Mumbai).[462]

A key element has been the participation of SWs through the Women's Coordinating Committee (Durbar Mahila Samanwaya/DMSC). The committee was founded in 1995 and has become a leading advocate for the rights of SWs and for the decriminalization of prostitution. In 1997, DMSC organized India's first national SW conference.[463]

CARE, the Population Council, and Johns Hopkins conducted focus group discussions and in-depth interviews with SWs, peer educators, and other key stakeholders such as project staff, brothel managers, pimps, police, and media covered by the Sonagachi Project. They found that the following strategies were identified as increasing collective ability to negotiate safe sex/reduce HIV risk:

1. facilitate sense of community among SWs through community meetings, fairs, and protests
2. decrease perceived powerlessness among SWs through human capacity building seminars
3. increase access and control over material resources via microcredit and cooperative banking
4. increase social participation through autonomous organization of SW and self-governing;
5. facilitate social acceptance of SW by involving sex industry and civil society stakeholders[464]

In a related study of 512 brothel-based sex workers covered by the Sonagachi Project, CARE, the Population Council, and Hopkins found that consistent condom use was significantly associated with:

1. believing that sex work is like any other work (OR 2.06)
2. being able to take sick leave (OR 3.38)
3. feeling that violence towards SW has decreased in recent years (OR 2.01)
4. having access and control over material resources (OR 2.51)
5. being a member of a SW organization (OR 1.45)
6. having voted freely in the last election (OR 1.75)[465]

Other Projects

Dr. Lalitha Kumaramangalam of Prakriti notes that in Chennai, despite high awareness of HIV/AIDS and substantial community mobilization, sex workers' behavior change has not been sustainable. She attributes this to the focus of prevention on changing high-risk behavior without addressing underlying sociocultural issues. In interviews with sex workers, she found that despite good knowledge of HIV/AIDS and relatively easy access to condoms, women's continued dependence on sex work exacerbated by illiteracy, poor nutrition and hygiene, repeated abortions, and social and cultural bias — contributed to their continued vulnerability to HIV and other STIs. Regular condom usage was only 32 percent, likely the result of their inability to negotiate condom use with male partners. Almost three-quarters of clients who refuse condoms are also intoxicated. Some clients refuse to use condoms citing lack of sexual pleasure, premature ejaculation, or fear of rashes or skin problems.[466]

To assess its interventions, SOS Foundation in Nasik, Maharashtra, interviewed female sex workers' clients. Among clients, 56 percent were ages 25-35 and 66 percent were married. Fifty-three earned Rs. 3000 to 5000 each month and spent about 5 to 6 percent of their monthly income on buying sex. Almost all clients (96 percent) visited SWs while under the influence of alcohol. Given their fears of contracting HIV, clients had increased their condom use. However, 77 percent of them reported that they did not use condoms with their other sex partners.[467]

Samabhavana, which works with MSM and TG in Mumbai, has interviewed male sex workers, including *malishwalas* (masseurs), bazaar boys, beauty parlor boys, sex networks controlled by pimps, educated young men from the modeling industry, and casual male sex workers. In a study of 120 male sex workers, Samabhavana found that their median age was 21, with 43 percent married. Fifty-six percent also have sex with women. Although 83.9 percent identified HIV as a "killer" disease, 38.3 percent identified it as a "foreign" disease. Of participants, 53 percent reported drug use. Regarding condoms, 60.8 percent reported that they were "not available," while 68.2 percent reported that clients did not have condoms during sex. Eighty-seven percent reported coerced sex with another man. [468]

Alcohol and Drug Use

Alcohol

The BSS, discussed above, found that 67 percent of MSM respondents reported ever having consumed alcohol. Nearly 16 percent consumed alcohol everyday, followed by 35 percent who consumed alcohol at least once a week, and 28 percent who consumed once a fortnight. Fifteen

percent of respondents regularly drank alcohol prior to sex. Intoxicating drug use was reported by nearly 13 percent of respondents. Of them, 76 percent reported trying *ganja* (marijuana), 42 percent *bhang* (hemp), 24 percent *charas* (hashish), 8 percent *afim* (opium), and 4 percent a mixture of brown sugar and heroin. Twelve percent also reported injecting addictive drugs without a medical prescription within the last 12 months.[469]

Overall, 44 percent of SWs had ever consumed alcohol. Of them, 22 percent reported that they consumed alcohol every day in the last four weeks; 38 percent reported drinking at least once a week. Overall, around 15 percent of SWs reported that they drink regularly before sex. Six percent of SWs reported ever trying any addictive drugs. Among them, almost one-third had injected drugs in the past 12 months.[470]

Among IDU respondents, three-fourths reported alcohol consumption. The proportion of respondents reporting having ever consumed alcohol was significantly lower in Manipur (20 percent) compared to the other four locations (Mumbai, Calcutta, Chennai, and Delhi). However, 62 percent of IDUs who had ever consumed alcohol in Manipur reported drinking alcohol every day during the last four weeks prior the survey; the proportion of respondents reporting alcohol consumption on a daily basis in the last month was significantly lower in Delhi (5 percent), Calcutta (7 percent), Mumbai (9 percent), and Chennai (12 percent). [471]

Illicit Drug Use

The major drugs being abused in India are opium, heroin, morphine, buprenorphine, diazepam, cannabis, pheniramine, promethazine, nitrazepam, spasmorproxyvon, codeine phosphate, cocaine, ecstasy, amphetamine type stimulants (ATS), antihistamines, and codeine-based cough syrup. (Common drugs used by street children include cannabis; crude alcohol; and the sniffing of gasoline, glue, paint thinner, kerosene, and copier and paper correction solutions.) Drugs injected include heroin and buprenorphine (often used as an alternative among heroin users); and cocktails combining buprenorphine with diazepam, avil, and phernergen. [472], [473] Epidemiological surveys and rapid assessment studies show that polydrug abuse is growing. [474]

Opium and cannabis have traditionally been used in India. [475] India is one of the world's top producers of licit opium (monitored by the Indian Central Bureau of Narcotics). Opium poppy is legally cultivated in Madhya Pradesh, Rajasthan, and Uttar Pradesh. Illegal growing of opium poppy occurs in Manipur, Mizora, Nagaland, Arunachal Pradesh, Kashmir, and Uttar Pradesh. India is also a transit route for heroin, hashish, and morphine from Afghanistan, Pakistan, and Myanmar (and, to a lesser extent, Nepal). [476]

In the early 1970s, heroin appeared on the market in northerneastern states such as Manipur. It spread to other parts of the country in the early 1980s and has displaced opium and cannabis as the drug of choice. The introduction of the Narcotics and Psychotropic Substances Act of 1985, which criminalized opium use, may have led to drug users' shifting from cannabis and opium to inhalation of heroin.[477] Some of the heroin available in India is trafficked from the Golden Triangle, in particular from Myanmar. In Manipur, Nagaland, and Mizoram, closest to the source of heroin, a purer variety of the drug is found.[478]

Since the early 1980s, heroin use has been spreading rapidly. [479] It is estimated that there are about 50,000 (34,500 injecting) drug abusers in Manipur, 24,700 in Nagaland, and 13,800 (3,000 injecting) in Mizoram. Injecting drug use is widespread within these states. [480]

HIV infections among IDUs first appeared in Manipur. A study conducted among IDUs in Churachandpur in Manipur in 1996, for example, found that high prevalence of HIV (78.64), hepatitis B (43.83 percent), and hepatitis C (98 percent). [481] According to an October 2001 study, In Imphal, 62.11 percent of IDUs were HIV-positive. Injecting drug use is also a major problem in urban areas such as Mumbai, Calcutta, New Delhi, and Chennai. [482]

According to the Center for Harm Reduction at the Burnet Institute in Australia, the figures of 1 to 5 million opium users and 1 million heroin addicts from the late 1980s and early 1990s are still used by government officials. The center notes, however, that among unofficial sources from NGOs, the level of heroin use is considered much higher. [483]

Generally, syringes and needles are purchased from pharmacies without any need for prescriptions. Although India does not appear to have a widespread culture of professional injectors, or "street doctors," as in some other Asian countries, there do appear to be shooting galleries where IDUs come to inject. [484] Generally, injecting equipment is discarded inappropriately. [485]

The sharing of injecting equipment among India's IDU community is widespread. Recent data indicate that most IDUs had at some stage (often within the past six months) shared their needle and syringe. The rates of ever sharing are Chennai (76 percent), Delhi (50 percent), Imphal (86 percent), Calcutta (78 percent) and Mumbai (61 percent). Analysis of the Delhi participants showed that in the past six months, 17 percent of IDUs shared their injecting equipment almost always and in Calcutta 52 percent of IDUs shared during their last injecting act. Although many IDUs clean their injecting equipment, the majority did so inappropriately for protection against bloodborne viruses such as HIV and hepatitis C. Many IDUs cleaned their equipment with any available water and only a small number used boiling water, and fewer used household bleach. Indirect sharing is also common among IDUs with the use of common spoons, solutions, cotton swabs and the dipping of a needle into an ampoule of a pharmaceutical drug. [486]

The health of many drug users is often poor. Many IDUs do not inject properly and as a result experience ulcers, abscesses, cellulitis, and throbophlebitis. Many are undernourished and a substantial number have experienced a drug overdose. [487] The national BSS discussed above found that among IDUs, the median age of first use of addictive drugs was 20 years. This figure was lowest in Delhi (19 years) and highest in Chennai (21 years). Overall, the mean duration of injecting drugs at the time of the BSS was 55.6 months, varying from 92.6 months in Calcutta to around 35 months in Mumbai. Nearly one-third of respondents reported that they started injecting drugs over five years ago; about 27 percent started injecting within the last 12-24 months. The proportion of respondents reporting injection of drugs during the last year was about 8 percent. About one-quarter of all IDUs interviewed reported that they started injecting drugs before age 21, whereas 20 percent began after age 30. The overall median age of starting injection (of drugs) was 25 years. Nearly half of respondents (45.2 percent) injected two to three times a day, whereas 16.1 percent injected more frequently. Fifty-three percent of respondents

reported injecting buprenorphine, followed by heroin (34 percent), crack (22 percent), dextroproxyphene (6 percent), tranquilizers (3 percent), and cocktail of heroin and cocaine (1 percent). There were wide variations in types of drugs injected across the five locations. In Manipur, 97 percent of respondents reported injecting heroin. All respondents in Mumbai injected crack, whereas high proportions in Calcutta (97 percent), Delhi (95 percent), and Chennai (77 percent) injected buprenorphine.[488]

The BSS found that 41 percent of IDU respondents reported sharing (i.e., using) previously used needles/syringes. This proportion was highest in Chennai (62 percent), followed by Manipur (55 percent), Mumbai (30 percent), Delhi (31 percent), and Calcutta (23 percent). Overall, 4 percent of respondents reported sharing needles/syringes every time they injected in the past month; 14 percent shared most times, 8 percent shared almost half the time, 29 percent shared occasionally, and 44 percent never shared needles/syringes while injecting in the past month. Across locations, Chennai had the highest proportion of respondents who shared every time they injected. Overall, 43 percent of respondents reported cleaning needles/syringes every time they injected in the past one month, 22 percent cleaned most times, and 3 percent never cleaned. About 83 percent of respondents who cleaned needles/syringes in the past month reported using cold water for cleaning, 9 percent used hot water, 2 percent used bleach or alcohol, and 1 percent boiled needles/syringes. [489]

On being asked whether they could obtain new/unused needles/syringes when needed, 97 percent of IDU respondents answered in the affirmative. On being asked if they knew a person/place from which they could obtain new/unused needles/syringes when needed, 99 percent of responded positively. Spontaneous responses on place/person from which to obtain new/unused needles/syringes found that that most respondents reported pharmacist/chemist (94 percent) as a source. Forty percent reported NGO workers, 10 percent reported friends, 7 percent reported drug dealers, and 4 cited other drug users. [490]

Overall, 45 percent of IDU had ever received treatment for drug use; 37 percent had undergone treatment in the past, and 8 percent were currently receiving treatment. Across sites, the proportion of respondents who had never received any treatment for drug use was the highest in Mumbai (70 percent), followed by Delhi (55 percent). The highest proportion of respondents who were currently under treatment were in Calcutta (14 percent) and Manipur (13 percent). Among all respondents who had ever received treatment, most reported either counseling (41 percent) or detoxification (39 percent).[491]

Women and Drug Abuse

The majority of drug users in India are male. However, use of drug treatment data may underestimate the number of female drug users, with women addicts a hidden population. There is great stigma attached to women seeking assistance for drug use, and women's ability to access treatment is hindered by their myriad responsibilities and workloads (e.g., child care).[492] Drug abuse by women in the northeast is believed to be growing.[493]

The social consequences of drug abuse particularly affect women, who face the double burden of caring for the addict (who may be abusive) and providing for the family. In the northeast, there

are increasing numbers of young widows of addicts, many of whom are HIV-positive as a result of having been infected by their husbands. [494] The Social Awareness Service Organization, which works in Imphal, Manipur, reports that there is a rise in HIV infections among wives and children of IDUs,[495] highlighting the crucial need to reach the sex partners of IDUs with VCT, condoms, STI treatment, PMTCT, care and support services, drugs to treat OIs, and HARRT.

A 2002 study by the United Nations Office on Drugs and Crime and India's Ministry of Social Welfare and Empowerment found that drug abuse has a serious yet inadequately addressed impact on women not captured in official statistics. The study, conducted in eight sites across India, involved 179 women ages 18-60 with a male relative who abused drugs. Major issues identified were domestic violence, infection with HIV, and financial burdens. Most of the domestic violence is directed against women and occurs in the context of demands for money to buy drugs. Participants reported that they often felt guilt, shame, embarrassment, depression, anxiety, and isolation; over one-third (35 percent) had frequent thoughts of suicide. [496]

Another UNDCP-Ministry of Social Welfare and Empowerment study involved 75 female drug addicts, some of whom were sex workers. Most women (91 percent) were using heroin or "brown sugar," an impure form of heroin. Other common misused substances were propoxyphene (35 percent), alcohol (33 percent), minor tranquillizers (23 percent), cough syrup (15 percent), and cannabis (11 percent). Intravenous drug use was reported by 41 percent of respondents. At least four women reported being HIV-positive. Among all women, nearly 10 percent had attempted suicide at least once. Among married women from Delhi, marital conflict and misuse of prescription drugs were common starting points for illicit drug use. Respiratory, gastrointestinal, genitourinary, liver problems, and STIs were reported by the participants.[497]
A study of female sex workers found the HIV prevalence among IDU SWs was nine times higher than among non-IDU SWs. [498]

There is no government policy on harm reduction, leading to lack of coordination in designing and implementing interventions. (Some states, such as Manipur, have adopted their own harm reduction policies.)[499] The Ministry of Social Justice and Empowerment provides US$500,000 annually to about 400 NGOs to manage drug counseling, treatment, and rehabilitation centers. The Ministry of Health manages about 100 rehab centers attached to hospitals in the country.[500]

Impact

At a Glance: Summary Bullets

Demographic

- India's life expectancy is projected to increase; however, AIDS will reduce life expectancy by 2 to 4 percent by 2050.
- By 2050, the U.N. projects that India's population will be 5 percent smaller than it would have been without AIDS.
- There were 2.8 million AIDS deaths in India between 1980 and 2000. During 2000-15, the U.N. projects that there will be 12.3 million AIDS deaths.

Macroeconomic

- During the late 1990s, researchers estimated that the total annual cost of HIV/AIDS in India was roughly equal to 1 percent of GDP. However, this figure did not include numerous factors such as the cost of ART, strengthening of the healthcare system, and the retraining of workers.

Household

- Many households affected by HIV/AIDS face extreme economic and psychosocial difficulties in responding to the epidemic.
- AIDS treatment imposes a heavy financial burden on Indian families, leading to depletion of savings and increasing indebtedness of households.
- In India, AIDS care is being provided by elderly family members, women, and children.

Orphans and OVC

- Obtaining data on the number of Indian children orphaned by AIDS is difficult. The magnitude of AIDS orphanhood has not been adequately acknowledged either in India or in the international community.
- Child vulnerability is already high in India, with large numbers of orphaned and displaced children, a growing number of street children, poor quality and overburdened child welfare institutions, and wide-scale abuse and exploitation of children.

- Although children are not yet being orphaned by HIV/AIDS on a large scale in most cities, studies in Mizoram and Calcutta demonstrate that the problem of orphans in some areas of India is already severe.

- The extended family is the traditional social security system for orphans in India. However, its ability—as well as that of the larger community—to assume care for orphans may be imperiled as HIV/AIDS spreads, household breadwinners die, and household resources become strained.

The U.S. National Intelligence Council report previously mentioned outlines the challenges HIV/AIDS will pose for India, particularly those regarding treatment and health sector expenditures. However, even with its projection of up to 25 million Indians infected with HIV by 2010, NIC believes that HIV/AIDS will be "a big problem but probably not devastating...[as, among other reasons, infected] individuals will remain diffused among very large populations."[501] However, much depends on how the country responds to the epidemic, which itself is intertwined with national, subregional, and global political and socioeconomic factors. Whether HIV/AIDS will become a structural part of poverty and socioeconomic development in India, as it has in southern Africa, remains to be seen. Regardless, there will be an enormous number of Indians with and affected by HIV/AIDS in the coming years.

Demographic

The U.N. Population Division projects that India's adult HIV prevalence will peak at 1.9 percent in 2019. By 2050, the U.N. estimates that prevalence will have fallen to 0.6 percent.[502]

Life Expectancy

India's life expectancy is projected to increase, to 66.3 during 2010-15, to 67.8 (2020-25) and to 73.8 (2045-50). However, AIDS will reduce life expectancy by 2 to 4 percent by 2050. The U.N. projects that during 2000-05, life expectancy would have been 65.0 without AIDS (versus 63.9 with AIDS). By 2045-50, life expectancy will be 73.8, whereas it would have been 76.0 in a no-AIDS scenario.[503]

Population

The U.N. also examined population under a "no-AIDS" scenario (tables 8 and 9). By 2050, the U.N. projects that India's population will be 5 percent smaller than it would have been without AIDS.[504]

Table 8. India: Projected Population with and without AIDS, 2000, 2015 AND 2050		
Period		
2000	2015	2050

With AIDS	Without AIDS	With AIDS	Without AIDS	With AIDS	Without AIDS
1,016,938,000	1,020,302,000	1,246,351,000	1,264,268,000	1,531,438,000	1,612,593,000

Source: Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat. *World Population Prospects: The 2002 Revision. Highlights.* New York: February 2003 <http://www.un.org/esa/population/publications/wpp2002/wpp2002annextables.PDF>

Table 9. India: Projected Population Reductions, 2000, 2015 AND 2050

Period					
2000		**2015**		**2050**	
Population Reduction	Percentage Reduction	Population Reduction	Percentage Reduction	Population Reduction	Percentage Reduction
3,364,000	0	17,917,000	1	81,154,000	5

Source: Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat. *World Population Prospects: The 2002 Revision. Highlights.* New York: February 2003 <http://www.un.org/esa/population/publications/wpp2002/wpp2002annextables.PDF>

Mortality

The U.N. estimates that there were 2.8 million AIDS deaths in India between 1980 and 2000, accounting for a 2 percent increase in mortality. During 2000-15, the U.N. projects 12.3 million AIDS deaths (representing a 10 percent increase in mortality) and 49.5 million AIDS deaths during 2015-50 (12 percent increase in mortality) (see tables 10 and 11).[505]

Table 10. India: Projected Number of Deaths with and without AIDS, 1980-2000, 2000-2015, and 2015-2050

Period					
1980-2000		**2000-2015**		**2015-2050**	
With AIDS	Without AIDS	With AIDS	Without AIDS	With AIDS	Without AIDS
182,307,000	179,533,000	140,546,000	128,295,000	452,901,000	403,398,000

Source: Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat. *World Population Prospects: The 2002 Revision. Highlights.* New York: February 2003 <http://www.un.org/esa/population/publications/wpp2002/wpp2002annextables.PDF>

Table 11. India: Excess Deaths Because of AIDS, 1980-2000, 2000-2015, and 2015-2050

Period					
1980-2000		**2000-2015**		**2015-2050**	
Excess Deaths	Percentage Increase	Excess Deaths	Percentage Increase	Excess Deaths	Percentage Increase
2,774,000	2	12,251,000	10	49,503,000	12

Source: Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat. *World Population Prospects: The 2002 Revision. Highlights.* New York: February 2003 <http://www.un.org/esa/population/publications/wpp2002/wpp2002annextables.PDF>

Macroeconomic

During the late 1990s, estimates of the total annual cost of HIV/AIDS in India ranged from 7 billion to 60 billion rupees (US$142 million to US$1.2 billion). These figures were obtained by calculating the average cost per AIDS case (cost of OI treatment and lost productivity) and multiplying this estimate by the number of cases. The wide range in the estimate resulted from the highly divergent estimates of the total cumulative number of HIV-infected persons. The researchers concluded that AIDS cost India roughly 1 percent of GDP per year because of lost productivity and treatment of OIs. However, the study did not include numerous factors such as the cost of ART, strengthening of the healthcare system, and the retraining of workers.[506]

Although studies often use prevalence and economic structures to assess the impact of HIV/AIDS on economic growth, this approach does not always yield precise estimates. Economic growth is affected by AIDS but also by other economic, military, and social events, such as changes in the external terms of trade, natural disasters and humanitarian conflicts. Isolating the individual impact of each of these effects is complex.[507] Moreover, some argue that although HIV/AIDS warrants attention on a level with other major health problems facing India, a reappraisal of the magnitude of the effect of HIV/AIDS on Indian society may be warranted.[5] For example, both skilled and unskilled labor are more plentiful in South Asia than in sub-Saharan Africa, and therefore, slower growth or even a decline in the labor supply due to HIV/AIDS is likely to have less impact in India than it would in Africa. [508]

Household

Many households affected by HIV/AIDS face extreme economic and psychosocial difficulties in responding to the epidemic. AIDS severely affects the most economically active members of the household. Other family members are required to give up or reduce work or education to provide care, or are unable to continue working due to social discrimination and fear in the wider community. Family income and expenditure patterns can change dramatically. The poorest households are at greatest risk of further impoverishment due to AIDS.[509]

The Indian family relies on strong emotional ties to bind members together and foster mutual interdependence. Despite growing urbanization and modernization, the family continues to be a source of strength and support for most people, especially during sickness and death.[510] In India, AIDS care is being provided by elderly family members, women, and children.[511]

As adults fall sick and die, households often feel the effect of a loss of adult farm labor. This results in a decline in productivity, loss of assets and income, an increase in household expenditures needed to meet medical bills and funeral expenses, and a rise in the number of dependents relying on a smaller number of productive family members.[512]

The HIV/AIDS epidemic is also likely to increase household spending on health. A World Bank study shows that Indian households currently spend 5 to 7 percent of their income on health, and rural households below the poverty line spend even more of their income on health (12 to 19 percent).[513] An increase in HIV prevalence is likely to lead to an increase in these expenditures for all households. It is sensible to believe that this added spending will displace consumption of

other necessities such as food and housing. This effect will be most pronounced among the very poor.

Only 10 percent of Indians have some form of insurance, most of which are inadequate. Hospitalized Indians spend 58 percent of their total annual expenditures on health care. Over 40 percent of those hospitalized borrow money or sell assets to cover expenses. The World Bank conservatively estimates that one-fourth of hospitalized Indians were not poor when they entered the hospital but became so because of hospital expenses (the existence and scale of this phenomenon vary greatly by state).[514]

A study by YRG Care found that AIDS treatment imposes a heavy financial burden on families, leading to depletion of savings and increasing indebtedness of households. Using data from 356 HIV/AIDS clients, YRG CARE found that average monthly expenditure per HIV-infected person was Rs 1,872 (US$39), or about 80 percent of household income. Treatment costs increased with the progression of illness. The average loss of income because of illness was estimated at Rs 377 rupees (about US$8) per month, or 16 percent of a patient's monthly wage earnings. The burden of treatment (measured as the ratio of treatment costs to household income) was much higher for low-income families than for high-income families. Patients paid for treatment costs through borrowing (41 percent), sale of assets (24 percent), past savings (24 percent), and mortgage of assets (9 percent). [515]

In Western Rajasthan, the FXB Treatment & Care Center in Jodhpur found that the majority of HIV-infected patients are migrant workers with few means of sustenance. After infection with HIV, patients lose their employment due to reduced ability to work and return home for care (as they are not covered by any social security schemes). The total direct cost of treatment, care, and support per patient each year is US$683, far beyond the reach of patients, whose annual household income is below US$300. (Costs are broken down as follows: treatment for OIs: US$150; diagnostics: US$135; ART: US$360; and nutritional support: US$38; indirect costs of clinical setup, salaries, and administration/overhead are not factored into the figure of US$683.)[516]

India's Tuberculosis Research Centre in Chennai has found that an AIDS death entails numerous financial, occupational, and interpersonal problems. These include ostracism, family or community refusal to conduct funeral rites, and adverse impact on surviving family members, especially widows. Widows of men who had died because of AIDS reported being evicted from their homes, ostracised by their families and community, and denied medical care.[517] In Mumbai, the International Institute for Population Sciences found that discrimination against those infected with HIV/AIDS, as well as their family members, is widespread. Most PWHA fear abandonment by their family if they reveal their HIV status. As daily subsistence is a challenge for PWHA, finding the funds for long-term treatment is beyond their ability.[518]

There are myriad psychosocial effects of HIV/AIDS, which are often experienced differently by household members. Studies of the quality and consistency of home-based AIDS care have found that some caregivers experience despair, helplessness, frustration, and isolation; however, these psychosocial effects are usually not addressed.[519] (See also the Stigma and Gender sections above.)

Orphans and Other Vulnerable Children

Obtaining data on the number of Indian children orphaned by AIDS is difficult. Two major publications with country-level on AIDS orphans (*Children on the Brink 2002*, authored by USAID, UNICEF, and UNAIDS; as well as UNAIDS' epidemiological updates) do not include any data on AIDS orphans in India. The proportion of children in India orphaned by AIDS is far lower than in sub-Saharan Africa. However, the magnitude of AIDS orphanhood has not been adequately acknowledged either in India or in the international community.[520] The FXB Foundation, which works with orphans and OVC in India, notes that child vulnerability is already high in India, with large numbers of orphaned and displaced children, a growing number of street children, poor quality and overburdened child welfare institutions, and wide-scale abuse and exploitation of children.[521] Dr. Bitra George of the Salaam Baalak Trust in New Delhi, which works with street children at the railway station, finds that the "needs of street children are varied but the response from organizations—government and NGO—has been patchy and isolated." [522]

Against this backdrop of coping mechanisms inadequate to address the current situation, a study of children in ten cities in India demonstrated that the number of children on the streets will rise more rapidly in the years ahead, as HIV/AIDS takes the lives of many thousands of parents. These children are themselves highly vulnerable to acquiring HIV while remaining marginalized from health care information and services. The Calcutta Samaritans estimate that the over 100,000 children on the city's streets have almost no education and few life or vocational skills. They are particularly vulnerable to exploitation and abuse by employers, other adults, and other street children.[523] FXB-India also stresses that street children and youth are particularly vulnerable to HIV infection, given their lack of information and education regarding STIs/HIV as well as lack of access to formal health care.[524] TORCH, a Delhi-based NGO that works with street and slum children, has found that early onset of sexual activity among street children is widespread, with many children reporting using sex as a source of affection or in exchange for protection.[525]

Although children are not yet being orphaned by HIV/AIDS on a large scale in most cities, studies in Mizoram and Calcutta demonstrate that the problem of orphans in some areas of India is already severe.[526] The extended family is the traditional social security system for orphans in India. [527] However, its ability—as well as that of the larger community—to assume care for orphans may be imperiled as HIV/AIDS spreads, household breadwinners die, and household resources become strained.[528] , [529]

Already, groups that work with AIDS orphans are observing the following:

- AIDS orphans and other vulnerable children experience social stigma, discrimination, isolation, shortage of basic needs such as food and clothing, vulnerability, depression, fear, lack of access to education and health care, malnutrition, and homelessness.[530]
- Many HIV-positive widows lack the physical strength, as well family and financial support, to care for their children.
- Parental death is traumatic, but when a parent dies because of AIDS, the child's trauma is compounded by HIV/AIDS-related stigma and social exclusion.

- There are cases of AIDS orphans' being denied access to schooling, health care, and their inheritance rights, with particular impact on girls.
- AIDS orphans and OVC have been subject to discrimination by child service providers (both government and NGO).
- There are few counselors trained to deal with issues of children affected by HIV/AIDS. For example, most child service providers do not perceive psychosocial support as an important need.[531], [532], [533], [534]

Agriculture

Relatively few data have been published on the effect of HIV/AIDS on agriculture in South Asia. However, the FAO has published reports on agriculture and HIV/AIDS in sub-Saharan Africa, and India may begin to see some of the same impacts. HIV/AIDS negatively affects agricultural production by reducing the labor force. It reduces investments in irrigation, soil enhancement, and other capital improvements, thereby inhibiting agricultural production. Affected households begin to focus on crops that are less labor-intensive but also less nourishing.[535], [536]

At the household level, both the quality and quantity of labor are reduced. Initially, productivity falls when the HIV-infected person becomes ill, and later the supply of household labor falls with the death of that person. Furthermore, there is a high probability that more than one adult in a household is infected. As other household members devote productive time to caring for the sick persons, the labor effective labor supply declines. HIV/AIDS also affects the availability of disposable cash income. During episodes of illness, household financial resources may be used to pay for medical treatment and eventually to meet funeral costs. Family assets such as livestock may be sold off to finance these expenditures. These resources may have otherwise been used to purchase agricultural inputs, such as extra seasonal labor, new seeds or plants, fertilizer, pesticides, etc.[537]

Industry

HIV/AIDS may have a profound effect on the private sector in all countries affected by the epidemic, including India. Firms may face higher costs in training, insurance, benefits, absenteeism and illness. AIDS is reducing the ratio of healthy workers to dependants. The World Bank estimates that this may reduce productivity growth by up to 50 percent in the most affected countries. Combined with the erosion of human capital and loss of skilled workers, this will result in a mismatch between labor requirements in the private sector and labor availability.[538] In a disconcerting finding of a study by UNAIDS that interviewed private sector business leaders and managers in India, most displayed denial about HIV/AIDS. The majority refused to acknowledge either that HIV infection was a problem or that it might be so in the future.[539] (Several companies have responded with HIV/AIDS policies and programs [see Response section].)

Prisons

See also the Governance/Judiciary and Population Mobility sections above.

According to the International Center for Prison Studies at King's College of the University of London, India had 281,320 prisoners (72.7 percent of whom were pretrial detainees and those on remand) in 1999 (data provided by India's National Crime Records Bureau). The official capacity of India's prison system in 1998 was 193,400.[540]

National and state-level data on HIV prevalence among those incarcerated are not available. Researchers have consistently found that HIV prevalence is higher among prisoners than among the "general public." This may be due to a variety of factors, such as composition of the prison population (e.g., preponderance of those from more marginalized/vulnerable communities), low awareness of HIV/STIs, lack of access to preventive practices, overcrowding, injecting drug use, mobility (releases, admissions and transfers), and sex (including rape).[541]

Response

At a Glance: Summary Bullets

Government

- In many ways, the government's response to the epidemic has been appropriate. In other respects, substantial material and political commitments have been too little and too late.

Successes

- After the first AIDS cases were identified in the U.S., the Indian Council of Medical Research established an AIDS task force. By 1986, surveillance centers designed to detect HIV were established at several medical colleges throughout metropolitan India.
- Following identification of HIV in India in1986, the government took steps to target screening and prevention efforts to populations at high risk of infection. A high-profile National AIDS Committee was launched, and in 1987 the National AIDS Control Program was established, focusing on increasing awareness of HIV/AIDS, screening blood for HIV, and testing of individuals with high-risk behaviors.
- By 1991, the government perceived a need to establish a multisectoral program for prevention and control of HIV/AIDS. There was also a need for an agency to help establish a state-level response to HIV/AIDS. To fulfill these objectives, the government established the National AIDS Control Organization in 1992.
- In 2001, the government adopted the *National AIDS Prevention and Control Policy.*
- Important among the government's interventions are programs of condom promotion, behavioral changes, community information and education, targeting and involvement of vulnerable groups at risk, blood safety, and STI treatment.

Challenges

- In July 2003, Dr. Meenakshi Datta Ghosh, project director of NACO, stated that HIV/AIDS is no longer affecting only high-risk groups or urban populations, but "is gradually spreading into rural areas and the general population."
- In the eyes of many critics, the allocation of only $38.8 million of the government's own funds (excluding funds from the World Bank and other donors) over the period 1999–2004 is a major indication of insufficient governmental commitment.

- Critics also argue that there is inadequate governmental response in the area of IDU and MSM interventions.

- Although the national policy on HIV/AIDS addresses discrimination, there is no national legislation on HIV/AIDS-related discrimination to serve as an implementing instrument.

- Additional criticisms include the perception that although there has been much commitment to addressing HIV/AIDS at the national level, this commitment is not matched at the state level. Currently, approximately one-third of India's 35 states and UTs have what the World Bank deems "good" HIV-control programs, one-third are "making some effort," and one third "are not on board, but are in denial."

- Another frequent criticism of the government's efforts is that during the initial response phase, NACO was focused on centralized, top-down planning and implementation. This led to insufficient "buy-in" at the state level and to uneven implementation of projects in the different states.

Blood Safety

- The country has 1,500 blood banks spread across large hospitals and small clinics, with quality varying among them.

- In June 2001, the government passed a law making it mandatory to test all donated blood for HIV, hepatitis C, hepatitis B, syphilis, and malaria.

- In December 2002, India's MOH announced that blood donors who tested positive for HIV would be told of their infection and asked to seek confirmatory tests and counseling. However, doctors working in blood transfusion services caution that the new policy will be difficult to implement given the current decentralized, fragmented state of blood banking services in India.

Budget Allocations

- NACO's budget for 1992 through 1998 was US$100 million, funded by government and external donors. For 1999-2004, NACO's budget is US$300 million. Of this amount, the government allocation is US$38.8 million; US$191 million is financed through a World Bank loan, and the remainder from other donor.
- India's federal budget caps the amount that foreign donors can contribute to HIV/AIDS. Thus, some Indian states have the capacity to absorb more resources but are denied them. The government argues that its control of resources ensures that no one disease receives favor over any other.

Nonhealth Ministries

- Although the central government exerts considerable influence through the National Council of Education Research and Training, it has thus far not elaborated a concrete policy on an HIV curriculum. Persistent ambivalence about sex education has also impeded the full implementation of a population and family life education program begun in the early 1980s.

- Some state and municipal governments are implementing school-based-prevention programs, often in partnership with NGOs or multilateral donors such as UNICEF.

- India's National Cadet Corps has implemented an HIV/AIDS awareness program. The program, implemented at the National Integration Camp in Delhi, has trained 600 cadets from all over the country in basic HIV prevention. These cadets will be further trained as resource persons, and will be responsible for training other cadets upon returning to their states.

- Collaborations with the transport sector on HIV/AIDS prevention activities have been popular. However, the fragmented structure of the transport industry is a major constraint to identifying replicable approaches.

Human Rights

- In India, there is widespread discrimination against people infected with HIV. Indian PWHA have great difficulty accessing support and are usually unable to discuss their HIV status for fear of repercussions.

- There is no national legislation to protect the rights of Indians with HIV/AIDS.

- The number of HIV/AIDS-related court cases has been rising rapidly. In the absence of HIV/AIDS-related legislation, the role of the judiciary in the evolution of legal principles regarding the epidemic has become crucial.

HIV Testing

- NACO has developed a VCT policy that states that "No individual should be made to undergo mandatory testing for HIV" and that "No mandatory HIV testing should be imposed as a precondition for employment or for provision of health care facilities during employment" (India's Armed Forces are exempt from this condition).

- NACO has also developed guidelines for VCT centers, which address consent and confidentiality issues.

- However, many Indians are tested for HIV without their knowledge or consent.

- Some government officials (including legislators in Goa and Andhra Pradesh) have voiced their support of mandatory premarital testing for HIV and are proposing related legislation.

Right of PWHA to Marry

- In 1998, India's Supreme Court delivered a judgment that suspended the right of PWHA to marry, despite that the issue of PWHA's marrying had never come before the Court.

- The Lawyers Collective HIV/AIDS Unit contested the constitutionality of the 1998 ruling regarding marriage. In early 2003, the Supreme Court passed an order that all observations relating to marriage in the 1998 case were not warranted as they were not issues before the Court.

- However, the case highlights the massive stigma and discrimination faced by PWHA in India and their vulnerability—particularly given the lack of legal instruments—to human rights abuses, including those perpetuated by governmental institutions.

Violence Directed at MSM, SWs, and HIV/AIDS Outreach Workers

- A July 2002 report from Human Rights Watch documented how HIV/AIDS projects, particularly those that provide essential information and services to SWs and MSM, are undermined by frequent and widespread police harassment and abuse of outreach workers.

Donors

- Major HIV/AIDS donors include the World Bank, Bill & Melinda Gates Foundation, Global Fund to Fight AIDS, Tuberculosis & Malaria, DFID, USAID, CDC, NIH, UNDP, JICA, AusAID, Sida, GTZ, and the EU.

Civil Society

- Numerous NGOs and CBOs, including associations of PHWA, are providing critical HIV/AIDS prevention, care, and support information and services. Many are playing leadership roles in their state and districts, particularly with regard to reaching marginalized populations.

- Although about 600 NGOs receive financial and technical support from the government, academic institutions, and external donors, many more work without any such assistance. Much of the work of NGOs and CBOs has not been evaluated, an impediment to scaling up.

- Major international NGOs working on HIV/AIDS in India include the International HIV/AIDS Alliance, Family Health International, Population Council, Marie Stopes International, CEDPA, Médecins sans Frontières, and CARE.

- Numerous Indian and international academic and research institutes are undertaking crucial HIV/AIDS research, as well as providing HIV/AIDS prevention, care, and support information and services.

VCT

- India has over 265 public VCT centers at state and local level (primarily in high-prevalence states).

- Although the number of private laboratories (which utilize rapid tests) is increasing, these labs generally do not offer client counseling.

- In its GFATM proposal, the government states that it aims to establish a VCT center in each of the country's approximately 600 district hospitals. VCT is also incorporated into the proposal's plans for scaling up PMTCT and expanding access to ART.

PMTCT

- In March 2000, AZT was introduced in a PMTCT feasibility study supported by UNICEF and NACO in 11 medical colleges of the five most affected states.

- With GFATM funding, the government plans to scale up prevention and care interventions among women of child-bearing age and their families in partnership with the private sector by providing a package of primary prevention, family planning, VCT, NVP, and counseling on infant feeding. Specifically, the GFATM proposal sets out that:

  → PMTCT interventions will be scaled up from 81 public sector hospitals to 444 public and private, tertiary and secondary health institutions (primarily in the six high-prevalence states).
  → Maternal and child health personnel (2,200 workers) will be trained in PMTCT to integrate activities into reproductive and child care programs.
  → Linkages between PMTCT programs, PWHA, NGOs, and CBOs will be established.
  → Capacity to provide treatment, including ART to HIV-positive mothers, their children, and partners (10,000 individuals), will be built.

Care and Support

- Since the launch of the second phase of the National AIDS Control Program in 1999, the Indian government has established 25 community HIV/AIDS care centers across the country. With GFATM funding, it plans to create drop-in centers for PWHA in high-prevalence states.

- As in many countries, an enormous amount of HIV/AIDS care and support is provided by NGOs and CBOs, including associations of PWHA.

Treatment of Opportunistic Infections (OIs)

- Twelve percent of NACO's budget is allocated to care and support, including treatment of OIs.

Antiretroviral Therapy (ART)

Availability

- India's 2002 proposal to the GFATM states that only 1,500 PWHA are receiving (and adhering to) ART, and that another 8,000 to 10,000 are intermittent users or poorly adherent.

- ART has generally remained unaffordable for most Indians and has been prescribed primarily to those who can pay out of pocket or who are enrolled in research studies.

- To reduce prices, the government is making efforts to exempt customs and excise duty on all antiretroviral drugs available in India.

- Indian pharmaceutical firms are currently manufacturing generic versions of ART and selling them at less than US$1 a day. The manufacture of generic ART drugs has been an essential element in the dramatic reduction of drug prices.

- However, India is a member of the WTO, and its patent law will change on January 1, 2005. The effect will be to decrease the likelihood that Indian firms will be able to manufacture generic versions of additional ART drugs.

- This scenario will affect not only the cost of ART programs in India, but in countries to which Indian firms currently sell relatively inexpensive ART drugs.

- India's GFATM proposal delineates the government's plans for increasing access to ART. The emphasis is on PMTCT (including ART for HIV-positive mothers and their families). The proposal appears to state that beyond the 10,000 individuals projected to receive ART through the PMTCT program, an additional 15,000 PWHA will be receiving structured ART through the private sector by 2008.

- The GFATM proposal does not address the myriad constraints in the largely unregulated private health care sector that will affect ART provision, monitoring, and adherence.

Adherence and Resistance

- Concerns about adherence and the spread of resistant viral strains may be particularly pertinent in India because the generic, low-cost, triple-drug formulations available in India include NNRTIs such as nevirapine. Evidence suggests that an easily acquired single point mutation can confer resistance to all the agents in the NNRTI class when the virus becomes resistant to nevirapine alone.

- Many Indian doctors and government officials note that greater access to ART could lead, particularly in the largely unregulated private sector, to faulty prescription practices that might set the stage for the emergence of drug-resistant HIV strains.

- Knowledge and practices of physicians in three low-prevalence and three high-prevalence states found that 70 percent of family physicians were unaware of the HIV ELISA test, and 80 percent unaware of ART except for AZT. CD4 and viral load monitoring facilities were nonexistent, and counseling concepts alien. Parameters to initiate therapy, drug regimes, drug combinations, and patient monitoring are poorly known. About 5 percent of family physicians attempt ART use, with AZT+3TC the most frequently used regimen, though monotherapy is also common.

Female-controlled Prevention Technologies

- India's National AIDS Research Institute is actively involved in preclinical and clinical trials of microbicide candidates. Phase III multicenter trials of Buffer Gel, Pro2000, and Carraguard are planned for 2003. Other research institutions involved in microbicide research include the National Institute of Pharmacological Education and Research and the Institute for Research in Reproduction.

- In February 2002, Hindustan Latex Limited signed an agreement with the U.K.-based Female Health Company to market (and eventually produce) female condoms in India. The female condom would be priced at Rs 45 per piece (approx US$0.95). HLL is exploring commodity and funding assistance to subsidize the cost.

Economic Interventions

- There are numerous projects that seek to reduce HIV vulnerability (particularly of young women) through vocational education, literacy interventions, and income-generating activities.

Vaccine Trials

- Since 2000, the International AIDS Vaccine Initiative has been working with the Indian Council of Medical Research and NACO to develop and evaluate AIDS vaccines in India. The National AIDS Research Institute in Pune will launch phase I trials of an AIDS vaccine in late 2003 or early 2004.

Industry

- Several private sector employer organizations are actively involved in HIV prevention, including workplace interventions, community programs, and support for NGOs. The Confederation of Indian Industries, Associated Chambers of Commerce and Industry of India, and Federation of Indian Chambers of Commerce and Industry are involved in HIV/AIDS workplace activities and are part of India's Country Coordinating Mechanism, which designed the country's GFATM proposal.

- The ILO has an India HIV/AIDS project and is working with businesses, trade unions, and employer federations.

- ILO has documented the HIV/AIDS programs of several Indian businesses, which span awareness raising, training, condom distribution, VCT, and care & support. Some companies also offer treatment of STIs; some, treatment of OIs as well. Very few appear to offer ART.

- Among prominent companies with HIV/AIDS programs are:

    → Tata Tea, Ltd
    → Tata Steel
    → Hindustan Petroleum Corporation
    → Steel Authority of India Limited

Government

The Government of India states that its national priorities for addressing HIV/AIDS are to:

1. scale up PMTCT services (including short-course NVP, as well as VCT) to prevent HIV among and provide care to mothers and their infants and families
2. provide antiretroviral treatment to PWHA through public-private partnerships.[542]

Other stated features of the national response include:

- to prevent socially vulnerable groups from becoming infected with HIV and to improve their health education, legal status, and economic prospects to diminish their vulnerability to acquiring HIV[543]
- to ensure blood safety[544]
- to protect the rights of PWHA to education, work, and privacy, and to ensure care and support for PWHA[545]
- to render India's response to HIV/AIDS inclusive of all sectors and communities, emphasizing decentralization to the state levels and below[546]
- to place greater emphasis on international partnerships with the UN and other agencies[547]

In many ways, the government's response to the epidemic has been appropriate. In other respects, substantial material and political commitments have been too little and too late. Because of India's sheer size, the number of actors involved in combating HIV/AIDS, and the complexity of their interactions, India's response to the epidemic does not lend itself easily to a summary appraisal. However, any assessment of the government's response should consider the following successes and continuing challenges.

Successes

After the first AIDS cases were identified in the U.S., the Indian Council of Medical Research established an AIDS task force. By 1986, surveillance centers designed to detect HIV were established at several medical colleges throughout metropolitan India. The first HIV-positive individual (a sex workers in Chennai) was identified in 1986 at a surveillance center at Madras Medical College. Soon after, other HIV-positive individuals were identified in Tamil Nadu and Maharasthra, and the first AIDS patient in India was subsequently reported.[548]

Following the 1986 case reports, the government took steps to target screening and prevention efforts to populations at high risk of infection.[549] A high-profile National AIDS Committee was launched, and in 1987 the National AIDS Control Program was established, focusing on increasing awareness of HIV/AIDS, screening blood for HIV, and testing of individuals with high-risk behaviors. With the help of WHO, the government launched a program in 1989 that focused on the states most affected by the HIV/AIDS epidemic, including Maharasthra, Tamil Nadu, West Bengal and Manipur. [550]

By 1991, the government perceived a need to establish a multisectoral program for prevention and control of HIV/AIDS. There was also a need for an agency to help establish a state-level response to HIV/AIDS. To fulfill these objectives, the government established the National AIDS Control Organization (NACO) in 1992. NACO is an autonomous body with the Ministry of Health and Family Welfare. It is responsible for training, research, surveillance, and program management, in collaboration with other ministries and parastatals, and advocacy.[551]

Under its second phase (1999-2004), NACO has decentralized it program. NACO grants funds to state AIDS control societies for targeted interventions, blood safety, IEC, youth campaigns, VCT, care and support, and social mobilization. The state AIDS control societies, in turn, contract with over 600 NGOs to implement numerous program activities. NGOs and associations of PWHA are represented on the executive committees of state AIDS control societies. At the district level, district nodal officers are appointed to oversee implementation of AIDS activities.[552]

NACO states that its current priorities include:

1. reducing the spread of HIV among high-risk populations through targeted peer counseling, condom promotion, and treatment of STIs
2. reducing the spread of HIV in the general population through awareness campaigns, testing and counseling and reduction of transmission through blood transfusion
3. strengthening the impact and sustainability of national, state, and local HIV/AIDS programs
4. increasing capacity for provision of low-cost community-based care
5. promoting intersectoral links to combat HIV/AIDS, including collaborations between public, private, and voluntary sectors.[553]

In 2001, the government adopted the *National AIDS Prevention and Control Policy*.[554] During that year, Prime Minister Vajpayee addressed Parliament and referred to HIV/AIDS as one of the most serious health challenges facing the country. He argued that as AIDS affects the future of India:

> We must therefore, intensify prevention activities and focus on awareness of young people who are the most vulnerable. These should include programs for school children, street children and other young people to help them adopt a responsible lifestyle. We should also involve religious establishments who can have a strong positive influence over large sections of society.[555]

The prime minister has also shown commitment at local levels and has reviewed the implementation of prevention programs with the chief ministers of the high-prevalence states. In addition, he has met with business and industrial communities that have shown an interest in addressing the HIV/AIDS epidemic, and he recently inaugurated the Business Coalition Trust on HIV/AIDS in India.[556] In late July 2003, India held its first Parliamentary Forum on HIV/AIDS, cosponsored by NACO and UNAIDS. [557]

The World Bank argues that although it is difficult to attribute India's relatively low HIV prevalence to any one intervention, the government's actions have contributed significantly to keeping HIV prevalence under one percent nationally. Important among the government's interventions are programs of condom promotion, behavioral changes, community information and education, targeting and involvement of vulnerable groups at risk, blood safety, and STI treatment.[558]

In addition to low HIV prevalence, the World Bank posits that the government has contributed to several other positive outcomes. Government programs have contributed to capacity building, including technical and managerial assistance to 150 NGOs. The government has established 140 blood surveillance centers (leading to almost 100 percent blood transfusion safety) and 180 HIV sentinel surveillance sites. The World Bank also suggests that government social marketing efforts have led to a 50 percent increase in the volume of condom distribution.[559]

USAID also quantified some of the government's successes in responding to HIV/AIDS. By 2001, 20 to 25 percent of schools hosted school-based AIDS education programs, including peer education. University-based AIDS programs have reached approximately 4 million college students. In addition, over 200 voluntary counseling and testing facilities have been established, mostly in high prevalence states. By 2003, each of the country's approximately 600 districts is projected to have at least one VCT center. To improve management of STIs, over 504 STI clinics have received further financial support from the government, and a campaign has been established to increase knowledge of STIs among 15- 45-year olds.[560]

Intersectoral collaboration is one of the key components of the second phase of the government's National AIDS Control Program (1999-2004). The program aims to promote collaboration among public, private, and voluntary sectors and would be focused on:

- learning from innovative HIV/AIDS programs in nonhealth sectors
- collaborating to generate awareness, provide advocacy, and deliver interventions[561]

In May 2001, the prime minister met with the chief ministers of the six high-prevalence states of Andhra Pradesh, Karnataka, Maharasthra, Tamil Nadu, Manipur, and Nagaland to plan intensified implementation of strategies to prevent and control HIV/AIDS in those states. The chief ministers view school- and college-based educational programs, involvement of informal leaders in spreading the message of HIV/AIDS, and enlisting the support of community leaders as priorities for the states. Furthermore, the chief ministers requested increased funding for areas such as support to hospital infection control measures, provision of medicines for opportunistic infections, PMTCT. The prime minister added the importance of involving religious leaders in the effort to disseminate information about HIV/AIDS.[562]

Challenges

Notwithstanding the successes outlined above, India is facing an increasingly generalized epidemic. According to Dr. Richard Feachem, executive director of the Global Fund to Fight AIDS, Tuberculosis & Malaria:

> In some parts of India, particularly the states that are reporting the higher prevalence, the tipping point is long past. I think there is absolutely no doubt that the virus is moving into the general population.[563]

In July 2003, Dr. Meenakshi Datta Ghosh, project director of NACO, stated that HIV/AIDS is no longer affecting only high-risk groups or urban populations, but "is gradually spreading into rural areas and the general population." [564]

In the eyes of many critics the allocation of only $38.8 million of the government's own funds (excluding funds from the World Bank and other donors) over the period 1999–2004[565] is a major indication of insufficient governmental commitment. In addition, there is significant skepticism regarding the ability of the Government of India to implement HIV/AIDS programs. Although the government has designed various programs to help prevent the further spread of HIV, lack of funding and poor regulatory systems are serious barriers to their successful implementation.[566] Others argue that health officials face significant cultural barriers to education and prevention and a lack of leadership at high political levels.[567] Richard Feachem of the GFATM has stated that:

> There is a fairly widespread view among educated people and opinion leaders in India that HIV/AIDS is primarily an African problem and that Hindu and Muslim culture will protect India from the most serious consequences of the virus....As in other countries, there has been a resort to the mythology of cultural immunity—it can't happen to us because we're different....I found on my visit a persistent tendency to minimize the current scale of the epidemic and the potential future growth.[568]

A recent article in *The Lancet* noted that:

> The problems facing HIV/AIDS prevention efforts are compounded by the refusal of many Indians in positions of power to accept that their country faces a grave threat from the pandemic. On the surface, HIV/AIDS seems to have become a priority. As long ago as 1998, Prime Minister Atal Behari Vajpayee conceded, "HIV/AIDS is the most serious public health problem facing India." And AIDS is now a fashionable cause among actors, fashion divas, rock stars, and socialites. But when the discussion of AIDS shifts from the vague to the explicit, from talk to action, problems crop up....As the epidemic spreads, the battle against AIDS in India is mired by a lack of consensus within the political establishment and among NGOs on the extent of the HIV/AIDS pandemic, the "right strategy" to combat it, and how to deal frankly with sexuality.[569]

Critics also argue that there is inadequate governmental response in the area of IDU interventions. Although the government acknowledges that IDUs are at risk of HIV infection, prevention activities for them are generally poor. Most drug treatment centers lack information about HIV/AIDS and STIs. [570] There is no government policy on harm reduction, leading to lack of coordination in designing and implementing interventions. (Some states, such as Manipur, have adopted their own harm reduction policies.)[571] Although NACO has approved needle and syringe programs (in Manipur, New Delhi, Mumbai, Calcutta, and Chennai), there are too few programs and the coverage is insufficient to substantially reduce HIV infection among IDUs.[572] (See also the earlier section on Alcohol and Drug Use.)

Additional criticisms include the perception that although there has been much commitment to addressing HIV/AIDS at the national level, this commitment is not matched at the state level. Critics argue that in many cases, a lack of advocacy from high-level political leaders led to a lack of response at the state level.[573] Currently, approximately one-third of India's 35 states and UTs have what the World Bank deems "good" HIV-control programs, one-third are "making some effort," and one third "are not on board, but are in denial."[574]

Another frequent criticism of the government's efforts is that during the initial response phase, NACO was focused on centralized, top-down planning and implementation. This led to insufficient "buy-in" at the state level and to uneven implementation of projects in the different states. Subsequently, efforts have been made to decentralize to the state and district level, realizing the differences in the nature and level of the HIV/AIDS epidemic in the different areas of India.[575] As discussed previously, however, decentralization does place further burdens on state governments, already struggling with severely inadequate health (and other) infrastructure. Moreover, decentralization does not automatically result in pro-poor and gender-sensitive expenditures, [576] which are necessary to address to HIV/AIDS directly (prevention education, services) and indirectly (socioeconomic investments in health, education, etc.).

There are additional shortcomings in the governmental response: Few prevention programs exist for MSM, and information campaigns have not adequately addressed myths such as that HIV is spread only by vaginal sex. Although the national policy on HIV/AIDS addresses discrimination, there is no national legislation on HIV/AIDS-related discrimination to serve as an implementing instrument. As discussed in the Human Rights section below, discrimination directed at PWHA, SWs, and MSM, as well as those who work with them on HIV/AIDS projects, is rampant, including discrimination perpetuated by government officials and employees. (See also the Stigma section above.)

Blood Safety

In June 2001, the government passed a law making it mandatory to test all donated blood for HIV, hepatitis C, hepatitis B, syphilis, and malaria. To improve compliance, blood bank personnel are being trained in quality assurance.[577] In December 2002, India's MOH announced that blood donors who tested positive for HIV would be told of their infection and asked to seek confirmatory tests and counseling. Previously, blood donor testing was anonymous, and blood infected with HIV was discarded without conducting a confirmatory test or any informing of donors. However, doctors working in blood transfusion services caution that the new policy will be difficult to implement given the current decentralized, fragmented state of blood banking services in India. The country has 1,500 blood banks spread across large hospitals and small clinics, with quality varying among them. Moreover, there is no efficient HIV counseling infrastructure established nationwide (though the number of VCT centers is increasing; see below), and links between VCT and blood banks are not firmly established. Medical officers in transfusion centers are also concerned that a substantial proportion of donors will not return for confirmatory tests.[578] (NACO's National Blood Policy may be found at: http://www.naco.nic.in/nacp/bldprog.htm. NACO has drafted the *Blood Safety Plan 2003* and is seeking feedback on it: http://naco.nic.in).

Budget Allocations

As mentioned above, India's public spending on health remained constant at 0.9 percent of GDP during the 1990s. Private expenditure on health accounts for 4.0 percent of GDP. [579]

On a per capita basis, public health spending is far less than the amount recommended to provide *basic* services by the *World Development Report 1993*. In addition, public sector health spending is significantly lower in the poorer states, where health outcomes are also poorer. The World Bank argues that India has also failed to address the important determinants of good health that lie outside the health system, such as in water and sanitation, nutrition, and education.[580]

NACO's budget for 1992 through 1998 was US$100 million, funded by government and external donors. For 1999-2004, NACO's budget is US$300 million. Of this amount, the government allocation is US$38.8 million; US$191 million is financed through a World Bank loan, and the remainder from other donors (see below). [581]

India's federal budget caps the amount that foreign donors can contribute to HIV/AIDS. The government usually insists that all foreign aid flow directly to it, rather than go directly to private groups (though an exception was made with regard to the Gates Foundation grant [see below]). India's Planning Commission sets annual ceilings on the amount of money—governmental or nongovernmental—that can be spent on various programs, including those related to HIV/AIDS. This results in a situation in which donor commitment and available resources for HIV/AIDS are greater than those permitted by the plan ceilings. Thus, some Indian states have the capacity to absorb more resources but are denied them. The government argues that its control of resources ensures that no one disease receives favor over any other.[582]

Nonhealth Ministries

Education. Education is developed and funded at the state level. Although the central government exerts considerable influence through the National Council of Education Research and Training, it has thus far not elaborated a concrete policy on an HIV curriculum. Persistent ambivalence about sex education has also impeded the full implementation of a population and family life education program begun in the early 1980s. Although sex education has recently been included in India's National Curriculum, state officials dilute messages to which they object and teachers omit topics with which they are uncomfortable.[583]

Some state and municipal governments are implementing school-based-prevention programs, often in partnership with NGOs or multilateral donors such as UNICEF. Maharasthra State, and the city of Mumbai in particular, has undertaken noteworthy schools-based AIDS prevention programs. An educational initiative called the AIDS Prevention Education Program (APEP) trains teachers and young peer educators in promoting life skills, including negotiation of safe sex. APEP was launched in 1993 and had expanded from 51 Mumbai municipal schools to 743 schools by 2001. Initially carried out by doctors of the Public Health Department in partnership with UNICEF, since 1998 it has been under the direction of the Education Department and is being carried out by a total of 1,589 APEP-trained teachers. The teachers complete a three-day training in life skills focusing on human sexuality and including HIV prevention and safe sex negotiation. They then provide sessions to their ninth grade students. APEP has reached all schools, municipal, state, trust managed, private, central government and the Archdiocesan Board of education schools in Mumbai. It has been adopted by Maharashtra for all schools in the state and is also being adopted by schools in Bihar.[584], [585], [586]

In Tamil Nadu, the "School Talk AIDS" program was implemented by the Madras School of Social Work in 200 schools spanning 20 districts. The program includes both teachers and student peer educators. In a recent evaluation, 56.4 percent of responding peer educators had problems implementing the program, including nonacceptance by students and opposition from teachers, parents, and the general public. The evaluation highlighted major, widespread misconceptions about sexuality and conception among Indian students. [587]

University Talk AIDS (UTA) began in October 1991 and is a collaborative partnership among the National Service Scheme, Department of Youth Affairs & Sports, and NACO. The project involves a team of peer educators in universities, colleges, and some schools to reach other students as well as surrounding communities with information on HIV/AIDS as well as drug abuse, relationships, courtship, and marriage. Evaluation of the project has indicated that it has reached 7,595 institutions and 6.5 million youth all across the country.[588]

Defense. India's National Cadet Corps has implemented an HIV/AIDS awareness program. The program, implemented at the National Integration Camp in Delhi, has trained 600 cadets from all over the country in basic HIV prevention. These cadets will be further trained as resource persons, and will be responsible for training other cadets upon returning to their states.[589]

Transport. Collaborations with the transportation sector on HIV/AIDS prevention activities have been popular. From 1996 to 1998, a consortium of 11 NGOs (PATH) worked to reduce the

transmission of HIV/AIDS among truckers in Tamil Nadu. The program focused primarily on meeting and advising truckers, their helpers, and female sex workers at various points along the highway. It also focused on those allied with the road transport industry, including loaders, employees in vulcanizing shops, workers in roadside workshops, filling station employees, and lodge owners where sex workers operate. PATH states that it was able to reduce the proportion of truckers having sex with nonregular sex partners from 48 to 32 percent and to increase condom use from 44 to 66 percent.[590]

However, one study argues that several attempts to establish transport-related HIV/AIDS mitigation activities in India have been unsuccessful (all under the DFID-financed Healthy Highways project). The study argues that the fragmented structure of the transportation industry has thus far thwarted the search for feasible and replicable approaches. It points out that a combination of forces would be required for effective intervention, and a successful model would combine private sector organizations with transport companies and associations.[591]

Another study undertaken of the largest truck terminal intervention project in Mumbai evaluated treatment and prevention of STIs and HIV, and promotion of consistent use of condoms. The study concluded that peer education programs are difficult to implement effectively given the high mobility of the target population. It also suggested that project activities are most effective at the terminal sites and that information on HIV/AIDS has to be customized and culturally appropriate.[592]

Indian Railways has also been conducting HIV/AIDS awareness and education among its workforce as well as its ridership.[593]

Human Rights

(See also the Governance, Stigma, Gender, and VCT sections.)

In India, there is widespread discrimination against people infected with HIV. Indian PWHA have great difficulty accessing support and are usually unable to discuss their HIV status for fear of repercussions. The Lawyers' Collective HIV/AIDS Unit reports that:

> The discrimination and stigma faced by PWHA has brought into focus gross violations of human rights. For example, people have lost their jobs because they were HIV-positive. There is a palpable reluctance among employers to keep the services of HIV-positive employees, mainly because of their own ignorance and fears. People in the prime of their working life are being forced to leave jobs or denied employment due to their HIV status. The resultant economic deprivation leads to poverty, poor health, family problems and children unable to access education. Women face harassment and encounter problems with regard to maintenance and their share of the matrimonial property. Their problems are heightened after the death of their husbands.[594]

There is no national legislation to protect the rights of Indians with HIV/AIDS.[595] This scenario has myriad consequences, as discussed below. (The Lawyers' Collective HIV/AIDS Unit has been asked by Kapil Sibal, a member of Parliament, and NACO to draft legislation on protecting the rights of PWHA for presentation to Parliament in 2003.[596] The Collective also stresses the

urgent need to address the legal rights and needs of women and create supportive legal structures for them. [597])

The number of HIV/AIDS-related court cases has been rising rapidly. In the absence of HIV/AIDS-related legislation, the role of the judiciary in the evolution of legal principles regarding the epidemic has become crucial. One critical legal victory was the Indian judiciary's acceptance of the suppression of identity principle, permitting PWHA to access legal services without revealing their identity.[598] The Lawyers' Collective and others have also filed suits related to the right of PWHA to marry (see below), health care provision, and the use of funds allocated to the state AIDS control societies. [599] , [600]

HIV Testing

NACO "feels that there is no public health rationale for mandatory testing of a person for HIV/AIDS....HIV testing carried out on a voluntary basis with appropriate pre-test and post-test counseling is considered to be a better strategy and is in line with the WHO guidelines on HIV testing."[601] As discussed in the VCT section below, NACO has developed a VCT policy that states:

- No individual should be made to undergo mandatory testing for HIV.
- No mandatory HIV testing should be imposed as a precondition for employment or for provision of health care facilities during employment. (India's Armed Forces are exempt from this condition.) [602]

NACO has also developed guidelines for VCT centers, which address consent and confidentiality issues:

> HIV testing...must always be undertaken after pre-test counseling and informed consent....The confidentiality of the test result (either negative or positive) should be strictly maintained. It is essential to respect the privacy and rights of the individuals to protect them from discrimination, victimization and ostracisation. [603]

However, many Indians are tested for HIV without their knowledge or consent. For example, FXB Society-India reports that over 95 percent of patients scheduled for surgical procedures are involuntarily tested for HIV; for those who test positive, their treatment/surgery is cancelled. Most health care professionals do not differentiate between routine offering of HIV tests and mandatory testing, particularly in the context of PMTCT. [604]

Some government officials (including legislators in Goa and Andhra Pradesh) have voiced their support of mandatory premarital testing for HIV and are proposing related legislation. [605]

Right of PWHA to Marry

In 1998, India's Supreme Court delivered a judgment that suspended the right of PWHA to marry, despite that the issue of PWHA's marrying had never come before the Court. (The 1998 case in question involved the issue of breach of confidentiality, wherein a hospital blood bank had disclosed the plaintiff's HIV status to his relatives.) The Lawyers Collective HIV/AIDS Unit contested the constitutionality of the 1998 ruling regarding marriage. In early 2003, the Supreme Court passed an order that all observations relating to marriage in the 1998 case were not

warranted as they were not issues before the Court.[606] The case highlights the massive stigma and discrimination faced by PWHA in India and their vulnerability—particularly given the lack of legal instruments—to human rights abuses, including those perpetuated by governmental institutions.

Violence Directed at HIV/AIDS Outreach Workers

A July 2002 report from Human Rights Watch documented how HIV/AIDS projects, particularly those that provide essential information and services to SWs and MSM, are undermined by frequent and widespread police harassment and abuse of outreach workers. This despite that in its official policies and statements, the Indian government has recognized that reaching SWs and MSM is central to the response to HIV/AIDS.[607]

Using data gathered in March and April 2002, HRW report that police have beaten peer educators, claimed that HIV/AIDS outreach work promotes prostitution, and brought trumped-up criminal charges against HIV/AIDS workers. Police also extort money and sex from these workers. The possession of condoms often spurs police harassment. In the absence of appropriate protections from the state, peer educators are subject to the same sorts of criminalization (and marginalization) as the populations they are trying to reach. [608]

MSM

The July 2002 HRW report also detailed how the criminalization of anal and oral sex under section 377 of the Indian Penal Code contributes to "the impunity with which police harass [MSM] and those who work with them."[609] Police also accuse those carrying out HIV/AIDS outreach of promoting homosexuality and have sometimes attempted to link them to national security offenses, narcotics-related crimes, or other criminal acts.[610]

Organizations that conduct HIV/AIDS education activities with MSM in Lucknow, Mumbai, Chennai, Sangli, Bangalore, and New Delhi described police abuse that had sometimes halted their outreach work. These organizations also reported that it is common for police to extort money or sex from MSM; physical abuse of MSM by police is also widespread. Discriminatory police practices that keep MSM from filing complaints or seeking redress, combined with the financial difficulties of making bail, lead to long periods in detention facilities, where MSM are subject to further abuse.[611]

HRW notes that police abuse of HIV outreach workers "parallels police abuse of other marginalized or minority populations in India...*dalits*, religious minorities, women, and street children, among others."[612] Although they are generally culturally accepted, TG, as previously discussed, also face significant discrimination. As the Indian Penal Code criminalizes emasculation, TG are denied legal, safe medical facilities for castration and sex change operations. Their access to education, employment, and health care is severely restricted. Subsequently, many turn to dancing, begging, or prostitution as their means of livelihood. They face regular harassment and abuse by police.[613]

Access to Treatment

There is increasing discussion in India of access to ART (discussed below). The Lawyers Collective HIV/AIDS Unit and its partners have launched the Affordable Medicines and

Treatment Campaign (AMTC) to coordinate an advocacy response to raise awareness and influence policy.[614]

Donors

Below is a summary of the assistance programs of India's major HIV/AIDS donors and technical partners.

World Bank. The World Bank lent India US$191 million to implement the second phase (1999-2004) of NACO.[615] Activities include targeting interventions for groups at high risk, specifically SWs, IDUs, migrant workers, MSM, and STI clinic attendees; providing locally appropriate information, communication, and awareness campaigns, VCT, and a strengthened infrastructure for blood safety; establishing new sources of support for AIDS care in partnership with NGOs. The Bank project also provides institutional strengthening by enhancing planning, management, and implementation capacity at the national, state, and local levels. It also strengthens the leadership capacity of India's Ministry of Health and Family Welfare; conducts training; builds capacity for ongoing monitoring and supervision; supports operational research and R&D; and supports broad social mobilization and cooperation and information.[616]

Bill & Melinda Gates Foundation. The Bill & Melinda Gates Foundation provides significant support for health programs in India, including HIV/AIDS prevention efforts. The Foundation supports the Partnership Project in Andhra Pradesh, providing $25 million for a joint project between the Children's Vaccine Program (run by the Program for Appropriate Technology in Health) and the government of Andhra Pradesh. The program aims to strengthen the state's infant immunization program and to provide hepatitis B vaccine. In addition, the Gates Foundation provides the François-Xavier Bagnoud Foundation with a $300,000 grant to develop community-based HIV/AIDS programs in rural Rajasthan. The FXB Rajasthan Society has developed a model for HIV/AIDS education that includes using village counselors and peer educators, and that targets migrant workers. The goal is to increase awareness of STIs and to promote VCT.[617]

Most recently, the Gates Foundation announced the India AIDS Initiative, a ten-year, US$100 million grant designed to reduce the spread of HIV/AIDS.[618] In partnership with the Government of India, community organizations and the private sector, the project will intensify prevention efforts aimed at highly mobile populations, including migrant laborers, truck drivers, rail workers, and military personnel.[619] The India AIDS Initiative will support Indian partners, primarily NGOs. The initiative will support programs that offer condom promotion, behavior change programs, VCT, and STI screening and treatment. It will also provide support for current projects focused on mobile populations, such as the Healthy Highways Project and APAC Project in Tamil Nadu. The initiative also aims to reduce HIV/AIDS-related stigma and discrimination by providing grants to organizations that raise awareness, provide education, and build political support to control the spread of HIV/AIDS.[620]

Global Fund to Fight AIDS, Tuberculosis & Malaria. In the first round of grants, announced in April 2002, India's TB proposal was funded, at US$8,784,999. In the second round of funding, announced in January 2003, India was granted US$100,081,000 for HIV/AIDS and a further

US$29,110,000 for TB.[621] India's GFATM HIV/AIDS proposal focuses on (1) scaling up PMTCT services (including short-course NVP and VCT) to prevent HIV among and provide care to mothers and their infants and families; and (2) providing antiretroviral treatment to PWHA through public-private partnerships.[622]

DFID. Granted India US$21.67 million over 1999-2004 for HIV/AIDS interventions in Andhra Pradesh, Gujarat, Kerala, and Orissa. DFID has provided prevention programs in West Bengal, and has recently extended its assistance with the implementation of sexual health projects in Andhra Pradesh. In addition, DFID has funded the Healthy Highways Project, which assesses the feasibility of improving the use of health facilities by truckers to reduces the risk that they and their sexual partners will be infected with HIV[623](see above).

CIDA. Granted India US$7.7 million over 2001-06 for HIV/AIDS interventions in Rajasthan and Karnataka. [624] Through the India-Canada Collaborative HIV/AIDS Project, CIDA is supporting the strengthening of state AIDS societies in Karnataka and Rajasthan, as well as NACO and its technical resources groups.[625] The project involves a consortium led by the University of Manitoba.[626]

USAID. USAID began HIV/AIDS activities in India in 1992. Its focus is on NGO capacity building, HIV prevention activities among marginalized and mobile populations, support to AIDS orphans and other vulnerable children, STI treatment, and care and support for PWHA. [627] In 1995, in collaboration with NACO, USAID launched the AIDS Prevention and Control Project (APAC). Among its activities, APAC provides technical assistance to NGOs focusing on HIV prevention among SWs in urban slum and in tourist areas; training for staff of STI clinics; support to PATH, the NGO consortium that works with truckers.[628] APAC collaborates with, among others, Family Health International/IMPACT, Program for Appropriate Technology in Health (PATH), U.S. Centers for Disease Control (CDC), the International Clinical Epidemiology Network, and other medical and research institutions.[629]

In Maharasthra, the AVERT Project, also launched in 1995, seeks to strengthen the capacity of the state government and NGOs to respond to the epidemic, with an emphasis on issues affecting women and children. Activities targeted to children include assistance to NGOs to establish shelters, education and health awareness programs, counseling, medical care, and advocacy. USAID granted India US$51.5 million for APAC and AVERT projects during 1999-2004.[630]

CDC. CDC priorities in India include supporting VCT; strengthening surveillance and infrastructure development (e.g., capacity of state AIDS control organizations and NGOs, laboratory strengthening and support); providing support for OI surveillance and case management; and assisting in the development of PMTCT programs.[631]

NIH. In 2000, the U.S. Department of Health and Human Services and the Indian Minister of Health and Family Welfare signed two joint statements pledging to stimulate new cooperative efforts in HIV/AIDS prevention research. Topics covered under these agreements span improved surveillance, prevention research, vaccine research and development, technology transfer, and health services research. Participants include the U.S. National Institute of Child Health and Human Development, National Institute of Mental Health, National Institute of Allergy and

Infectious Diseases, National Institute on Drug Abuse, the Fogarty International Center, and other agencies of the U.S. Government (including the CDC and USAID).[632]

JICA. In 1994, Japan announced the Global Issues Initiative (GII), a seven-year, US$3 billion program of assistance for population and AIDS-related projects.[633] Recent projects include an HIV/AIDS training course, which was attended by participants from India.[634]

AusAID. In India, AusAID's efforts have focused on creating more effective partnerships with NGOs. For example, AusAID funds the SHALOM project, a community-based intervention based on harm reduction principles (such as needle exchange and condom promotion).[635]

Sida. Sida has contributed to national program aimed at reducing child and maternal mortality and improving women's reproductive health. In Manipur, Sida was the first donor to support NGO program, based on the philosophy of harm reduction, with the aim of reducing the spread of HIV/AIDS among IDUs and their sexual partners. A more recent initiative is the twinning of two NGOs, RFSU in Sweden and Mamta in India, to address the need for strategies focusing on the health and well-being of young people.[636]

GTZ. GTZ states that since 1993, its priorities have shifted from "supporting vertical HIV/AIDS projects to supporting the integration of these projects into reproductive health or primary care programs."[637]

European Union. In India, the EU supports programs focus on safe blood management, life skills education, and STI prevention. The EU plans more activities targeting policy research and HIV/AIDS surveillance.[638]

UNDP. Granted India US$1.5 million for HIV/AIDS interventions in Tamil Nadu and Maharasthra, Gujarat, Rajasthan, Himachal Pradesh, and Delhi during 2002-04.[639] , [640] UNDP focuses on HIV prevention in the workplace, interventions with SWs and others in the sex industry, and the greater involvement of PWHA in HIV/AIDS prevention and care. UNDP works with government, civil society, academic and research institutions, the corporate sector, and legal and human rights organizations. In addition, UNDP's HIV and Development Project for South and Southwest Asia has developed the National Consultation on HIV/AIDS and the Media. The project provides a forum for media practitioners, experts, advocacy group, and PWHA to discuss the media's response to the epidemic.[641]

UNAIDS. UNAIDS aims for a multisectoral response to HIV/AIDS in India, and therefore coordinates and monitors all activities by UN agencies. Additionally, the agency works to disseminate best practices, linking the country to information regarding both global and regional efforts to combat AIDS. Specific priority areas for UNAIDS include advocacy; surveillance at national and state levels; support to states in implementing HIV/AIDS prevention and care programs, specifically for vulnerable and difficult to reach populations; protection of the rights of PWHA; impact mitigation; and facilitation of technical resource groups to increase access to technical resources at the state level (including blood safety, clinical management and hospital infection control, counseling, epidemiology).[642]

WHO. The objectives of WHO's South Asia Regional STI/AIDS Program are to provide technical and programmatic support, support the WHO India office in responding to the technical and operational needs, assist the MOH and other technical units to incorporate HIV/AIDS into their existing programs and activities, and collaborate as a UNAIDS cosponsor in carrying out intercountry and regional activities in selected areas and programs.

UNFPA. Together with UNESCO, UNFPA assists in AIDS education programs among both school-based and out-of-school youth. In addition, UNFPA has responded to the crisis by integrating HIV/AIDS programming into its reproductive and child health programs in India.[643]

UNICEF. In India, UNICEF is implementing school-based AIDS education programs, as well as a feasibility study on PTMCT in 11 centers.[644]

International Labor Organization (ILO). Under an agreement with NACO, the ILO has created a project that promotes behavior change and encourages health-seeking behavior in the workplace and in communities of unorganized labor. The ILO is implementing this program with the Ministry of Labor, and employers' and workers' organizations in six states. One example of the ILO's work is the support that it has given to the Network of Positive People of Delhi, a grassroots organization for HIV-positive individuals. Through this collaboration, ILO is reaching men, women, and children in the informal economy who are affected by HIV/AIDS. Workers in this sector, comprising 92 percent of India's workforce, are particularly vulnerable because of their limited access to medical services, social security, or support networks. The Network of Positive People of Delhi has created program in Delhi and other severely affected districts, seeking to inform workers about the disease and what resources are available to them. The network provides training and job assistance to HIV-positive workers and to the families of those who have died. It also arranges for medical care and organizes support groups. In an effort to address the lack of awareness of the epidemic's impact on India—particularly outside urban areas—ILO is currently preparing a report on the effects of HIV/AIDS on women, children, household income, and rural economies.[645] (See also the Private Sector section below.)

National NGOs and CBOs

The Links section provides a continually updated list of major NGOs and CBOs.

Numerous NGOs and CBOs, including associations of PHWA, are providing critical HIV/AIDS prevention, care, and support information and services. Many are playing leadership roles in their state and districts, particularly with regard to reaching slum dwellers, truck drivers, MSM, sex workers, IDUs, youth, street children, orphans, and other marginalized populations. The communities targeted for interventions lead many of these projects. Several NGOs are also contributing to national policymaking. In addition, projects such as Sonagachi have become global best practice, as discussed above.

Although about 600 NGOs receive financial and technical support from the government, academic institutions, and external donors, many more work without any such assistance. Much of the work of NGOs and CBOs has not been evaluated, an impediment to scaling up.[646] For example, only about 20 to 30 percent of marginalized populations are currently reached by

Indian civil society. In absolute numbers, this is an extraordinary accomplishment, especially in such a poor country. Yet the need for scaling up of activities and wider coverage is urgent.[647]

With regard to faith-based organizations, researchers from Mamata Medical College in Khammam examined the attitudes of Hindu, Christian, and Muslim organizations vis-à-vis-HIV/AIDS. They found that 73 percent of "moderate religious believers" believe that HIV is not merely a virus, but a "social disorder with deteriorating moral and ethical values."[648] Some faith-based organizations are involved in HIV prevention and education activities (see the Links section). Efforts are under way to spur their greater involvement; for example, the Jammu and Kashmir State AIDS Prevention and Control Society is working with imams.[649]

In rural areas, many people often consult with indigenous and folk practitioners in seeking health care.[650] However, whether traditional healers are playing any role in the country's response to HIV/AIDS is unclear.

International NGOs

Again, the Links section provides a continually updated list of major international NGOs. Among them are:

International HIV/AIDS Alliance <http://www.aidsalliance.org/_docs/_languages/_eng/_content/_1_about/_fieldprog/_asia/india.htm>. The Alliance's programs focus on building existing capacity and expertise in HIV-related programming and on NGO support. Currently, the Alliance is working with three partner NGOs that have HIV-related expertise, and the NGOs are, in turn, providing financial and/or technical support to 31 other NGOs/CBOs located in 13 states across India. Efforts are focused on specific communities, including those that are marginalized and are highly vulnerable to HIV infection (MSM, IDUs, and PWHA). The Alliance, with support from the European Union, also has a major new initiative to mobilize care and support for PWHA and their families in Andhra Pradesh, Delhi, and Tamil Nadu.[651] The Alliance works closely with YRG Care in Chennai; the two have developed a project to scale up the continuum of care and support model for PWHA in four other centers within south India. The Alliance has facilitated the planning of this project and provided technical support and training to YRG Care staff who are coordinating the work. In collaboration with the Horizons Project of the Population Council, the Alliance is also supporting YRG Care in carrying out an operations research study on a care and support model for PWHA and in developing and implementing methodologies for assessing the costs of YRG Care's program and the potential for cost recovery. Also works closely with Maharashtra Network for Positive People (MNP+), Society of Friends of Sassoon Hospitals (SOFOSH), Salvation Army, and Committed Communities Development Trust (CCDT). With funding from the Gates Foundation, the Alliance initiated the Frontiers HIV Prevention Program in Andhra Pradesh <http://www.aidsalliance.org/_docs/_languages/_eng/_content/_1_about/_projects/frontiers.htm>

Family Health International <http://www.fhi.org/en/CountryProfiles/India+main+country+page.htm>. FHI collaborates with USAID on the APAC projects. In addition, FHI supports research, capacity building, and direct intervention programs through the IMPACT program. IMPACT has supported numerous

baseline studies, provides support to NACO, and helps to build capacity of local NGOs. The program has developed interventions for men who have sex with men (MSM) and for children affected by AIDS. FHI also manages the Rapid Response Fund, which provides a quick response mechanism for funding community-based HIV/AIDS prevention activities.[652] In collaboration with the Population Council, FHI organized a workshop that brought together scientists, policy makers, health service providers, activists and community members to discuss critical issues surrounding counseling and testing for HIV in South Asia.[653]

Marie Stopes International <http://www.mariestopes.org.uk/ww/india.htm>. MSI supports a range of sexual and reproductive health services including family planning and contraceptive services; contraceptive social marketing; obstetric care; female sterilization; vasectomy; primary health care; safe abortion; youth services; STI prevention, diagnosis, and treatment; STI/HIV/AIDS awareness-raising initiatives; and VCT.[654]

Center for Development and Population Activities (CEDPA) <http://www.cedpa.org/>. CEDPA has implemented the Better Life Options Program in India. The program offers adolescent girls a combination of life skills, including literacy and vocational training, support for entering and staying in formal school, family life education, and leadership training. A holistic approach integrates education, livelihoods, and reproductive health. (See also the Economic Interventions section below.)

Médecins sans Frontières <http://www.msf.org/>. MSF currently supports programs to treat TB, and a team is currently working with the MOH on the Revised National Tuberculosis Control Program (RNTCP). The program aims to support the public and private health sectors in the implementation of DOTS in collaboration with local communities.[655]

CARE <http://www.care.org/>. CARE's Chayan project includes interventions aimed at preventing HIV within both the general population and high-risk populations. The project also addresses reaching adolescents and youth with information and appropriate services and fostering public-private partnerships.[656]

Population Council <http://www.popcouncil.org/asia/india.html>. Projects include study of factors that facilitate or limit PWHA involvement in NGOs (in partnership with the International HIV/AIDS Alliance, Tata Institute for Social Sciences, and local CBOs in Maharashtra); assessment of intervention package for improving clinical services for and reducing stigma and discrimination against PWHA in public and private hospitals (partners include SHARAN, NACO, Institute for Economic Growth, and the Tata Institute for Social Sciences); analysis of role of community development strategies in contributing to effective and sustainable interventions for sex workers (partners include the Socio-legal Aid Research and Training Centre and the Durbar Mahila Samanwaya Committee; and study identifying the components of YRG CARE's care and support program with greatest impact on clients' quality of life and and determining the process and costs of scaling-up these services at four other sites <http://www.popcouncil.org/horizons/newsletter/horizons(5).html>.

Academic and Research Institutes

Numerous Indian and international academic and research institutes are undertaking crucial HIV/AIDS research, as well as providing HIV/AIDS prevention, care, and support information and services. See the Links section.

HIV Prevention Trials Network (HPTN)

Studies in India (either under way or in development) include:

- HPTN 033: HIV Prevention Preparedness Study: to establish effective standard operating procedures to recruit and retain high-risk populations in future HPTN trials and to characterize HIV risk behaviors and HIV incidence in these populations (heterosexual men and women in Chennai)
- HPTN 034: HIV Incidence and Participant Retention Protocol: HIV-uninfected non-sex worker women and HIV-discordant heterosexual couples attending STI clinics in Pune
- HPTN 035: Phase II/IIb Safety and Effectiveness Study of Vaginal Microbicides BufferGel and 0.5% PRO2000/5 Gel (P) for Prevention of HIV Infection in Women (Pune)
- HPTN 047: Phase I Safety and Acceptability Study of Investigational Vaginal Microbicide PRO 2000/5 Gel (P) (Pune)
- HPTN 052: Randomized Trial to Evaluate Effectiveness of Antiretroviral Therapy Plus HIV Primary Care versus HIV Primary Care Alone to Prevent the Heterosexual Transmission of HIV-1 in Serodiscordant Couples (Pune)[657]

VCT

See also the Human Rights section above.

As previously mentioned, NACO has established policies and guidelines on VCT (see http://naco.nic.in/nacp/ctrlpol.htm and http://naco.nic.in/nacp/guide1.htm, respectively). Its HIV testing policy outlines that:

- No individual should be made to undergo mandatory testing for HIV.
- No mandatory HIV testing should be imposed as a precondition to employment or to provision of health care facilities during employment. However, with regard to India's Armed Forces, preemployment HIV testing may be carried out (with appropriate pre- and posttest counseling).
- Adequate voluntary testing facilities with pre- and posttest counseling should be made available throughout the country in a phased manner. There should be at least one HIV testing centre in each district in the country with proper counseling facilities.

- All necessary facilities should be in place so that HIV results are strictly confidential. Such results may be given to a client's family with his consent. Disclosure of HIV status to the spouse or sexual partner of a client should be done by the attending physician with proper counseling. However, the client should also be encouraged to share this information with his family.[658]

- With regard to HIV testing facilities in the private sector (hospitals, clinics, nursing homes, and diagnostic centers), state governments should adopt legislative and other measures to ensure that these testing centers conform to the national policy and guidelines relating to HIV testing.[659]

NACO's VCT guidelines outline in detail:

- required VCT site infrastructure
- counselor and lab personnel qualifications
- training
- external review mechanisms
- consent and confidentiality (as discussed in the Human Rights section above)
- linkages with AIDS care & support and other health programs[660]

India has over 265 public VCT centers at state and local level (primarily in high-prevalence states).[661] , [662] States have some flexibility with regard to adapting the national VCT policy and guidelines to their local situation(s).[663] Although the number of private laboratories (which utilize rapid tests) is increasing, these labs generally do not offer client counseling.[664]

In its GFATM proposal, the government states that it aims to establish a VCT center in each of the country's approximately 600 district hospitals. VCT is also incorporated into the proposal's plans for scaling up PMTCT and expanding access to ART (see sections below).[665]

PMTCT

As mentioned in the Epidemiology section, the percent of HIV transmission attributed to mother-to-child transmission has increased, from 0.33 percent in 1999 to 2.61 percent in 2002. [666]

The Government of India has responded with a program to prevent mother-to-child transmission. In March 2000, AZT was introduced in a PMTCT feasibility study supported by UNICEF and NACO in 11 medical colleges of the five most affected states. Babies received an 18-month follow-up and were tested for HIV with PCR at 48 hours and at two months. As of the end of March 2001, over 150,000 antenatal women were reached; 79 percent of these women were counseled, 77 percent tested, 1.8 percent found to be HIV-positive, and over 600 mothers provided with AZT.[667]

An analysis of this experience revealed that, for logistical and cultural reasons, compliance was evaluated as “good” in only 54.1 percent of women (it was “fair” in 45.1 percent and “poor” in 0.9 percent). Also, that women received varying doses and duration of AZT prophylaxis was a barrier to its effective use. The government concluded that the two-dose NVP regimen might be

a more suitable option to overcome this problem, and subsequently launched a new feasibility study of NVP in the same 11 centers.[668]

The evaluation of the AZT feasibility study also found increased infant mortality in babies of HIV-infected women who were given replacement feeding versus those who were breastfed for two months (although the difference was not statistically significant because of the small sample size). NACO concluded that the government should have a concrete policy on infant feeding practices among HIV-infected mothers and that the best option is exclusive breastfeeding for the first four months of life, gradual weaning between four and six months, and termination of breastfeeding by the end of six months.[669] Strengthened programmatic support for these recommendations would be particularly salient in view of a recent study indicating that 42 percent of women who intended either to exclusively breastfeed or exclusively provide replacement foods in fact provided mixed feeding.[670]

With GFATM funding, approved in January 2003, the government plans to scale up prevention and care interventions among women of child-bearing age and their families in partnership with the private sector by providing a package of primary prevention, family planning, VCT, NVP, and counseling on infant feeding. Specifically, the GFATM proposal sets out that:

- PMTCT interventions will be scaled up from 81 public sector hospitals to 444 public and private, tertiary and secondary health institutions (primarily in the six high-prevalence states).
- Maternal and child health personnel (2,200 workers) will be trained in PMTCT to integrate activities into reproductive and child care programs.
- Linkages between PMTCT programs, PWHA, NGOs, and CBOs will be established.
- Build capacity to provide treatment, including ART to HIV-positive mothers, their children, and partners (10,000 individuals).[671]

Among expected results:

- Each year, over 7 million pregnant women will become aware of HIV prevention strategies and will have access to condoms and STI treatment.
- The number of infants infected with HIV through MTCT annually will fall below 10,000.
- Presumably, the expanded PMTCT program will include development of ART treatment guidelines for pediatric populations.[672]

Care and Support

Since the launch of the second phase of the National AIDS Control Program in 1999, the Indian government has demonstrated its commitment to provide low-cost care to PWHA. This is evident in the allocation of 12 percent of NACO's budget to care and support (this figure includes providing treatment for tuberculosis and other common OIs).[673] Among its activities, the government has established 25 community HIV/AIDS care centers across the country. With GFATM funding, it plans to create drop-in centers for PWHA in high-prevalence states.[674]

As in many countries, an enormous amount of HIV/AIDS care and support is provided by NGOs and CBOs, including associations of PWHA. These organizations are delivering nutrition information, counseling for PWHA and their families, school fee support, vocational training, and—in some cases— provision of drugs for OIs. However, they struggle with highly inadequate financial and human resources coupled with increasing demand for their services. Many PWHA experience difficulty in accessing such services because of stigma.[675] (See the Links section for a comprehensive, continually updated list of Indian NGOs and CBOs.)

Treatment of Opportunistic Infections (OIs)

As mentioned above, 12 percent of NACO's budget is allocated to care and support, including treatment of OIs. (About 16 percent of the total budget of the World Bank HIV/AIDS loan is designated for medicines to treat OIs). NACO's care strategy covers 30 percent of an estimated 500,000 AIDS cases that seek treatment at government-run and some selected NGO hospitals. NACO's budget does not cover antiretroviral therapy except in cases of postexposure prophylaxis for health care providers and the PMTCT programs cosponsored by UNICEF.[676]

The government has strengthened the capacity of states by training physicians and technicians, installing flow-cytometers for CD4/CD8 testing at apex medical institutions in 25 large and medium-size states, and allocating Rs1250 (US$25) per patient per year for the purchase of drugs to treat common OIs. The national treatment guidelines also recommend prophylaxis with cotrimoxazole for ill PWHA.[677]

With the exception of UNICEF's support of the PTMCT program, major donor organizations have generally avoided financing ART. In the treatment area, they have instead focused on strengthening the treatment of OIs.[678]

As previously mentioned, TB is the most common OI in India.[679] , [680] In January 2003, researchers from YRG Care and the Dr. ALM Post Graduate Institute of Basic Medical Sciences, University of Madras, in Chennai reported the results of a retrospective analysis of 594 AIDS patients (72.9 percent male; baseline CD4 cell count, 216 cells/microL) receiving care at YRG, a tertiary HIV referral center in southern India. The mean duration of survival from serodiagnosis was 92 months. Ninety-three percent of patients acquired HIV through heterosexual contact. The most common OI was pulmonary tuberculosis (49 percent; median duration of survival, 45 months), followed by pneumocystis carinii pneumonia (6 percent; median duration of survival, 24 months), cryptococcal meningitis (5 percent; median duration of survival, 22 months), and central nervous system toxoplasmosis (3 percent; median duration of survival, 28 months). Persons with a CD4 lymphocyte count of <200 cells/microL were 19 times (95% confidence interval [CI], 5.56-64.77) more likely to die than were those with CD4 cell count of >350 cells/microL. Patients who had one or more OIs were 2.6 times more likely to die (95% CI, 0.95-7.09) than those who did not have an OI.[681]

Antiretroviral Therapy (ART)

Availability

Indian HIV treatment guidelines call for ART at CD4 levels of 350 for symptomatic patients and 200 for asymptomatic patients. However, ART has generally remained unaffordable for most Indians and has been prescribed primarily to those who can pay out of pocket or who are enrolled in research studies.[682] , [683] India's 2002 proposal to the GFATM states that only 1,500 PWHA are receiving (and adhering to) ART, and that another 8,000 to 10,000 are intermittent users or poorly adherent. [684] Although Indian pharmaceutical companies are manufacturing generic AIDS drugs and selling them overseas, the Indian government has not focused on provision of treatment in the public sector.[685]

To reduce prices, the government is making efforts to exempt customs and excise duty on all antiretroviral drugs available in India. The government has a mandate to provide access to treatment to all the employees working in various central government departments. [686] The Employees' State Insurance Corporation (ESIC, the country's social security program), which covers 8.6 million employees (total beneficiaries = 232 million), does not currently offer ART.[687]

In June 2003, UNICEF, WHO, UNAIDS, and MSF included 14 Indian pharmaceutical companies in their joint guide to global sources of HIV/AIDS drugs (Cipla, Ranbaxy Laboratories, IPCA Laboratories, Neon Antibiotics, Gracure Pharmaceuticals, Lyka Labs, Strides Arcolab, Intas Pharmaceuticals, Aurobindo Pharma, Lupin Laboratories, Fourrts Laboratories, Glenmark Pharmaceuticals, Intas Pharmaceuticals, and CLARIS Life Sciences) (more information on each firm may be found in the report's annexes). [688]

Indian pharmaceutical firms are currently manufacturing generic versions of ART and selling them at less than US$1 a day. The manufacture of generic ART drugs has been an essential element in the dramatic reduction of drug prices.[689] However, India signed the Agreement on Trade-related Aspects of Intellectual Property Rights (TRIPS) as a member of the World Trade Organization in 1994. As a result, Indian patent law will change on January 1, 2005. The effect will be to decrease the likelihood that Indian firms will be able to manufacture generic versions of additional ART drugs. This particularly affects on-patent drugs used in second-line therapies and future new ART agents that may be developed. These changes will affect not only the cost of ART programs in India, but in countries to which Indian firms currently sell inexpensive ART drugs.[690]

In the meantime, national and international interest groups are lobbying the Indian government to expand access to ART. Proposals range from simply encouraging the use of ART by the patients of private physicians to government provision of free ART to all HIV-infected persons. As time passes these interest groups will gain strength and the cost and difficulty of administering ART will continue to decline, such that pressure on the Indian government to finance or provide expanded access is likely to intensify.[691]

India's GFATM proposal, approved in January 2003, delineates the government's plans for increasing access to ART. As discussed above, the emphasis is on PMTCT (including ART for HIV-positive mothers and their families). The proposal appears to state that beyond the 10,000 individuals projected to receive ART through the PMTCT program, an additional 15,000 PWHA will be receiving structured ART by 2008. A total of 200 institutions are scheduled to have

capacity to provide ART by that year. To this end, the government has reached an agreement with four pharmaceutical manufacturers, who will participate in a graduated cost recovery program.[692]

The ART program will initially involve the following model institutions:

1. AIDS Research and Control Center (ACORN), Mumbai (which will administer the GFATM's ART component)
2. YRG Care, Chennai
3. Freedom Foundation, Bangalore
4. Freedom Foundation, Hyderabad

Patients at these institutions have usually had to pay the full cost of ART treatment and monitoring. Under the GFATM-funded program, PWHA will be able to access ART monitoring at these institutions at a subsidized rate of US$12. Four Indian generic drug manufacturers have agreed to a sliding scale pricing mechanism, based on patient's income.

The GFATM proposal does not address the myriad constraints in the largely unregulated private health care sector that will affect ART provision, monitoring, and adherence. (See the previous sections on the health sector and on TB.)

Box 3. St. John's Medical College and Hospital: Implementing ART in India

St. John's Medical College and Hospital was established in 1963 and is now a well-known referral center and tertiary hospital in Bangalore, Karnataka. It is one of the top medical colleges in south India and a leading private provider of affordable medical care in Bangalore City. In addition to being a main hospital and teaching institution, St. John's runs three rural/periurban health centers. St. John's also provides VCT and is one of the major providers of care for HIV/AIDS patients in Bangalore, seeing nearly 1,000 HIV-positive patients for regular follow-up. It is one of the few hospitals in Bangalore where ART has been prescribed since it became available in India. Approximately 250 HIV-infected patients are admitted each year as inpatients, and the number of new patients who test HIV positive each month is around 30. ART is prescribed to all patients with <350 CD4, if they can afford it. The HIV clinic patient population is 90 percent male; 91 percent are Hindu, 2 percent Muslim, and 6 percent Christian. The adult patient age range is 21-68; most are in their late 20s to mid-30s. Faculty and students conduct research on a variety of issues including HIV/AIDS, maternal and child health, and TB. Since 1994, a Clinical Epidemiology Unit has been active at St. John's. Current studies include HIV prevalence among outpatients at St. John's, overlapping HIV and TB epidemics among patients, and the role of nutrition for HIV-infected patients.

Adherence and Resistance

Treatment adherence is a critical issue. Poor adherence to ART leads both to poor clinical outcomes and to the transmission of drug-resistant viral strains, thus lowering the effectiveness of ART in the infected population. These considerations are supported by experience that strongly suggests that ART programs should put sufficient resources into supporting high levels of adherence counseling and monitoring. Concerns about adherence and the spread of resistant viral strains may be particularly pertinent in India because the generic, low-cost, triple-drug formulations available in India include so-called nonnucleoside reverse transcriptase inhibitors (NNRTI) such as nevirapine. Evidence suggests that an easily acquired single point mutation can

confer resistance to all the agents in the NNRTI class when the virus becomes resistant to nevirapine alone.[693]

Some investigators argue that although too few studies have been published on adherence to ART in resource-poor countries to draw firm conclusions, the results of those that have been done indicate that adherence rates are similar to those seen in resource-rich countries. Although high levels of adherence can be achieved, a wide range of adherence levels has been reported in both industrialized and developing countries. Data from India and Uganda indicates that drug cost can be a significant barrier to adherence. In a study of 100 patients on triple-drug ART treatment in India, 60 percent of patients stopped within a few months because of high cost and because they preferred to take alternative treatment. (These data are derived from conference proceedings but have not been published.) Thus, a program of operations research to identify effective adherence technique specific to India appears warranted.[694] Such research is being undertaken in Bangalore by Dr. Maria Ekstrand of the University of California San Francisco.

Many Indian doctors and government officials note that greater access to ART could lead, particularly in the largely unregulated private sector, to faulty prescription practices that might set the stage for the emergence of drug-resistant HIV strains.[695] These concerns are reflected in the findings of a recent multicenter study of the causes of ART therapy failure in India. In the study, led by Grant Medical College & GT Hospital in Mumbai, only 10 percent patients were counseled prior to initiating ART. Adherence was observed in only 10 percent of cases and all were on (suboptimal) PI-sparing regimens. In over 90 percent of cases, the long-term goal of therapy was not determined, and dual-drug regimens were used in 70 percent of cases and monotherapy in 23 percent. In 61 percent of cases, ART was used without treating underlying OIs. The authors found that initiation of salvage regimens from among the scant number of currently available drugs indicated improvement in 30 percent of these previously failing cases. They recommend that only specially trained doctors should prescribe these drugs.[696]

Another study of family physicians and consultants examined the knowledge and practices of physicians in three low-prevalence and three high-prevalence states. Among the chief findings of this study, led by Grant Medical College & Sir JJ Hospital in Mumbai: In low-prevalence states, 70 percent of family physicians were unaware of the HIV ELISA test, and 80 percent unaware of ART except AZT. CD4 and viral load monitoring facilities were nonexistent, and counseling concepts alien. In high-prevalence states, 85 percent of family physicians know of ELISA and Western Blot tests. Elementary counseling concepts are known but seldom practiced. Parameters to initiate therapy, drug regimes, drug combinations, and patient monitoring are poorly known. About 5 percent of family physicians attempt ART use, with AZT+3TC the most frequently used regimen, though monotherapy is also common. Internists, chest physicians, and dermatologists/veneriologists also practice HIV medicine, of whom 60 percent know of HIV/AIDS drugs and regimens. Their knowledge of patient selection criteria and monitoring, including CD4 and viral load, is vague. Over 90 percent are not familiar with salvage therapy. [697] Dr. Ruairi Brugha of LSHTM also highlighted these concerns in a June 2003 article in *BMJ*.[698]

Female-controlled Prevention Technologies

The National AIDS Research Institute (NARI) is actively involved in preclinical and clinical trials of microbicide candidates. Phase III multicenter trials of Buffer Gel, Pro2000, and Carraguard are planned for 2003. Other research institutions involved in microbicide research include the National Institute of Pharmacological Education and Research and the Institute for Research in Reproduction.[699]

Community-based surveys with SWs and general population groups conducted by Dr. Suniti Solomon (YRG Care), Dr. Smita Joshi (NARI-ICMR, Pune), Dr. Ramesh Babu (BOSS & CIPCA, Tirupati), and Dr. Surya Rao (Vishakapatnam) indicate high acceptability of microbicides. These surveys underscored that:

- Most women are reluctant to discuss sex-related matters with their husbands. Most are not in a position to negotiate (male) condom use. It is therefore crucial to include men in dialogue about gender power imbalances and improved communication related to sex.
- Cost-effectiveness, efficacy, accessibility, and need for privacy should be crucial considerations in microbicide development.[700]

In February 2002, Hindustan Latex Limited signed an agreement with the U.K.-based Female Health Company to market (and eventually produce) female condoms in India. HLL and FHC have launched operations research and social acceptability studies of the FC in three states: Maharashtra, Kerala, and Andhra Pradesh. The female condom would be priced at Rs 45 per piece (approx US$0.95). HLL is exploring commodity and funding assistance to subsidize the cost.[701]

Economic Interventions

See also the Human Trafficking section above.

Examples include:

- Community-based HIV/AIDS/STD Response through Capacity-building and Awareness (CHARCA): Collaboration of NACO, U.N. Foundation, and the U.N. Theme Group on HIV/AIDS in India. Seeks to reduce young women's vulnerability to acquiring HIV/STIs through skill building and other inventions. Currently being implemented in six districts in six different states.[702]

- Better Life Options Program, implemented by CEDPA: uses an empowerment model to integrate education, livelihoods, and reproductive health; offers adolescent girls life skills, including literacy and vocational training; support for entering and staying in formal school; family life education, and leadership training. A study of the program's effects in Delhi, Madhya Pradesh, and Gujarat indicated that it had significant impact on participants' economic empowerment (literacy, completion of secondary education, employment, and vocational skills); autonomous decision making (when to marry, how to spend money); reproductive health (visits to health centers alone, knowledge of HIV/AIDS); self-esteem and confidence; and child survival practices.[703]

- South India AIDS Action Program (SIAPP): facilitates establishment of thrift cooperatives for SWs and MSM so that they may access savings and credit facilities. Activities include identification of areas for cooperatives, training of specific community members to initiate programs, public meetings to highlight advantages of cooperatives, open session for local community to observe the working of a thrift cooperative, and periodic technical and administrative support to cooperatives, including leadership and accountancy training.[704]

- Adolescent Livelihood Project, University of California San Francisco: provides adolescent girls in Bangalore with economic opportunities, thereby enhancing their bargaining power in sexual relationships and reducing their susceptibility to STIs/HIV.

- Johns Hopkins University Bloomberg School of Public Health: Organizes *devadasi* women into self-help groups for income generation activities. In addition to job training, they are also provided health services and education programs, with a focus on HIV/STI prevention. [705]

Vaccine Trials

Since 2000, the International AIDS Vaccine Initiative has been working with the Indian Council of Medical Research and NACO to develop and evaluate AIDS vaccine**s** in India. The National AIDS Research Institute in Pune will launch phase I trials of an AIDS vaccine in late 2003 or early 2004.[706]

Industry

See also the section on ART above, which described the actions Indian pharmaceutical firms.

The industrial sector is beginning to respond to HIV/AIDS in India. The prime minister recently urged private industry to work with the government to help spread awareness of HIV/AIDS. Specifically, the private sector was asked to focus on funding health services for employees and their families, ensuring easy access to condoms among employees, eliminating HIV screening as a requirement for employment, and ensuring nondiscrimination in the workplace.[707]

Several private sector employer organizations are actively involved in HIV prevention, and projects include workplace interventions, community programs, and support for NGOs. The Confederation of Indian Industries (CII) mobilizes industry to implement nondiscriminatory policies vis-à-vis employees with HIV/AIDS, as well as to encourage implementation of behavioral change programs for prevention of HIV. CII is also committed to providing advocacy and leadership; increasing business action on the national and regional levels; and promoting multisectoral partnerships with business, government and civil society. CII has supported over 1,700 companies in establishing workplace programs.[708] , [709] In addition, the Associated Chambers of Commerce and Industry of India and the Federation of Indian Chambers of Commerce and Industry are also involved in HIV/AIDS workplace activities (they, along with CII, are part of India's Country Coordinating Mechanism, which designed the country's GFATM proposal).[710]

APAC, the joint NACO and USAID collaboration, encourages the involvement of the private sector in the marketing of condoms. Specifically, APAC supports a manufacturer of condoms, J.K. Ansell, to increase accessibility in Tamil Nadu; between 1996 and 2000, the number of condom retail outlets in Tamil Nadu increased from 17,600 to 31,600.[711] In addition, APAC has created a training manual for private sector workers, aiming at educating different types of retailers (medical, general, grocers, cigarette shopkeeps) in condom promotion.[712]

Tamil Nadu also worked with a multinational advertising agency to launch a social marketing campaign targeting young men. Advertisements were screened at major cricket matches, using cricketing language to promote protection against HIV/AIDS ("If you bowl a maiden over tonight, use a condom").[713]

The ILO has an India HIV/AIDS project and is working with businesses, trade unions, and employer federations. ILO has documented the HIV/AIDS programs of several Indian businesses, which span awareness raising, training, condom distribution, VCT, and care & support. Some companies also offer treatment of STIs; some, treatment of OIs as well. Very few appear to offer ART.[714]
Among prominent companies with HIV/AIDS programs are:

- Tata Tea, Ltd., employs 27,000 workers spanning 30 tea estates (six in Tamil Nadu and 24 in Kerala); considering the families of employees, beneficiaries total 100,000. Tata Tea has invested in a program to train, educate, and counsel its employees on STIs and HIV/AIDS. It also works with sex workers in Munnar. [715] , [716]
- Tata Steel: From April 2001through January 2002, the company's Core Group on AIDS, in coordination with its drug & alcohol awareness program, reached 25,025 participants with HIV/AIDS awareness and training interventions. Referrals are made to the AIDS Cell at Tata Main Hospital for further VCT and care & support services.[717]
- Hindustan Petroleum Corporation (HPCL) has enacted an AIDS prevention plan, including educating staff on HIV/AIDS, training peer educators to work with employees, displaying HIV/AIDS publicity materials, distributing AIDS-related literature to customers, and promoting condoms at the company's retail outlets.[718]
- Steel Authority of India Limited (148,000 employees), Larsen & Toubro Limited (26,000 employees; engineering and construction firm), GlaxoSmithKline Pharmaceuticals Limited (5,000 employees), Mahindra and Mahindra Ltd. (autos and farm equipment), and Bajaj Auto Ltd. all have HIV/AIDS prevention and care programs.[719]

(See also previous discussion of projects that work with the transport sector.)

Links

For queries regarding links, please contact the project director: Lgarbus@psg.ucsf.edu

References

[1] NACO. HIV/AIDS Indian Scenario: HIV Estimates for Year 2001. New Delhi: n.d. <http://www.naco.nic.in/indianscene/esthiv.htm> Accessed January 2003.
[2] UNAIDS. Report on the Global HIV/AIDS Epidemic. Geneva: 2002 <http://www.unaids.org/barcelona/presskit/barcelona%20report/table.html>
[3] Kumar S. "HIV cases rising sharply in India." *BMJ* 2003 Aug 2;327(7409):245.
[4] U.S. National Intelligence Council. The Next Wave of HIV/AIDS: Nigeria, Ethiopia, Russia, India, and China. Report no. ICA 2002-04 D. Washington, DC: September 2002 <http://www.cia.gov/nic/pubs/other_products/ICA%20HIV-AIDS%20unclassified%20092302POSTGERBER.htm>
[5] Population Reference Bureau. World Population Data Sheet 2003. Washington, DC. <http://www.prb.org>
[6] UNAIDS. Report on the Global HIV/AIDS Epidemic. Geneva: 2002 <http://www.unaids.org/barcelona/presskit/barcelona%20report/table.html>
[7] UNAIDS Jan. 2002 < http://www.unaids.org/partnership/pdf/INDIAinserts.pdf>
[8] Kumar S. "HIV cases rising sharply in India." *BMJ* 2003 Aug 2;327(7409):245.
[9] World Bank. India - Second National HIV/AIDS Control Project. Project Appraisal Document. Report no. 18918. Washington, DC. 1999/05/13 <http://www-wds.worldbank.org/servlet/WDSServlet?pcont=details&eid=000094946_99060905302420>
[10] Simoes EA, Babu PG, John TJ, et al. "Evidence for HTLV-III infection in prostitutes in Tamil Nadu (India)." Indian J Med Res. 1987;85:335-338.
[11] CDC. Draft Program Plan: GAA in India. June 2000.
[12] UNDP, UNAIDS. HIV/AIDS Portal for Asia Pacific. <http://www.youandaids.org/AsiaPacific/India.asp> Accessed October 2002.
[13] UNDP, UNAIDS. HIV/AIDS Portal for Asia Pacific. <http://www.youandaids.org/AsiaPacific/India.asp> Accessed October 2002.
[14] UNDP, UNAIDS. HIV/AIDS Portal for Asia Pacific. <http://www.youandaids.org/AsiaPacific/India.asp> Accessed October 2002.
[15] UNAIDS. India: Partnership Menu. Geneva: January 2002 <http://www.unaids.org/partnership/pdf/INDIAinserts.pdf>
[16] UNDP, UNAIDS. HIV/AIDS Portal for Asia Pacific. <http://www.youandaids.org/AsiaPacific/India.asp> Accessed October 2002.
[17] NACO. HIV/AIDS Indian Scenario: HIV Estimates for Year 2001. New Delhi: n.d. <http://www.naco.nic.in/indianscene/esthiv.htm> Accessed January 2003.
[18] NACO. HIV/AIDS Indian Scenario: HIV Estimates for Year 2001. New Delhi: n.d. <http://www.naco.nic.in/indianscene/esthiv.htm> Accessed January 2003.
[19] Kaiser Daily HIV/AIDS Report. "India Must Act To Prevent Tens of Millions of HIV Cases, UNAIDS Director Says; 4.58M Indians Already HIV-Positive." July 25, 2003 <http://www.kaisernetwork.org/daily_reports/rep_index.cfm?DR_ID=19017>
[20] Kumar S. "HIV cases rising sharply in India." *BMJ* 2003 Aug 2;327(7409):245.
[21] Kumar S. "HIV cases rising sharply in India." *BMJ* 2003 Aug 2;327(7409):245.
[22] NACO. HIV/AIDS Indian Scenario: HIV Estimates for Year 2001. New Delhi: n.d. <http://www.naco.nic.in/indianscene/esthiv.htm> Accessed January 2003.
[23] NACO. National Baseline General Population Behavioural Surveillance Survey: 2001. New Delhi. <http://www.naco.nic.in/nacp/publctn.htm>
[24] Thakur K, Saple DG, Vaidya SB, et al. "6-year longitudinal follow-up of 50 HCW exposed to needle stick injury of symptomatic HIV infected patients in India." Abstract no. TuPeC4784. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[25] Kumar S. "HIV cases rising sharply in India." *BMJ* 2003 Aug 2;327(7409):245.
[26] NACO. HIV/AIDS Indian Scenario: HIV Estimates for Year 2001. New Delhi: n.d. <http://www.naco.nic.in/indianscene/esthiv.htm>
[27] UNAIDS. Report on the Global HIV/AIDS Epidemic. Geneva: 2002 <http://www.unaids.org/barcelona/presskit/barcelona%20report/table.html>
[28] UNAIDS. Report on the Global HIV/AIDS Epidemic. Geneva: June 2000 <http://www.unaids.org/epidemic_update/report/Table_E.htm>

[29] UNAIDS. Report on the Global HIV/AIDS Epidemic. Geneva: 2002 <http://www.unaids.org/barcelona/presskit/barcelona%20report/table.html>
[30] UNAIDS and WHO. AIDS Epidemic Update: December 2002: http://www.unaids.org/worldaidsday/2002/press/update/epiupdate2002_en.doc>
[31] UNAIDS. Report on the Global HIV/AIDS Epidemic. Geneva: June 2000 <http://www.unaids.org/epidemic_update/report/Table_E.htm>
[32] UNAIDS. Report on the Global HIV/AIDS Epidemic. Geneva: 2002 <http://www.unaids.org/barcelona/presskit/barcelona%20report/table.html>
[33] NACO. National Baseline General Population Behavioural Surveillance Survey: 2001. New Delhi. <http://www.naco.nic.in/nacp/publctn.htm>
[34] Kaiser Daily HIV/AIDS Report. "India Must Act To Prevent Tens of Millions of HIV Cases, UNAIDS Director Says; 4.58M Indians Already HIV-Positive." July 25, 2003 <http://www.kaisernetwork.org/daily_reports/rep_index.cfm?DR_ID=19017>
[35] NACO. National Baseline General Population Behavioural Surveillance Survey: 2001. New Delhi. <http://www.naco.nic.in/nacp/publctn.htm>
[36] Solomon S, Ganesh AK. "HIV in India." Topics in HIV Medicine 2002 Jul/Aug;10(3):19-24 <http://www.iasusa.org/pub/topics/2002/issue3/solomon-ganesh_hiv_india.pdf>
[37] UNAIDS. India: Partnership Menu. Geneva: January 2002 <http://www.unaids.org/partnership/pdf/INDIAinserts.pdf>
[38] World Bank. HIV/AIDS Update: India. April 2002 <http://lnweb18.worldbank.org/sar/sa.nsf/6062ad876fb8c066852567d7005d648a/176fd35a8e92b6ee85256a9b00520bb2?OpenDocument>
[39] Population Reference Bureau. World Population Data Sheet 2003. Washington, DC. <http://www.prb.org>
[40] Italia YM, Gilada IS. "HIV epidemic more severe in Rural India." Abstract no. WePeC6220. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[41] Kaiser Daily HIV/AIDS Report. "India Must Act To Prevent Tens of Millions of HIV Cases, UNAIDS Director Says; 4.58M Indians Already HIV-Positive." July 25, 2003 <http://www.kaisernetwork.org/daily_reports/rep_index.cfm?DR_ID=19017>
[42] Solomon S, Ganesh AK. "HIV in India." Topics in HIV Medicine 2002 Jul/Aug;10(3):19-24 <http://www.iasusa.org/pub/topics/2002/issue3/solomon-ganesh_hiv_india.pdf>
[43] Cicily J, Rebecca E, Janarathina R, "AIDS as hidden highrisk zone for Gujarat with women as a fore core for HIV/AIDS prevention in Jamnagar District in Gujarat." Abstract no. ThPeE7835. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[44] Kumar S. "HIV cases rising sharply in India." *BMJ* 2003 Aug 2;327(7409):245.
[45] Kaiser Daily HIV/AIDS Report. "India Must Act To Prevent Tens of Millions of HIV Cases, UNAIDS Director Says; 4.58M Indians Already HIV-Positive." July 25, 2003 <http://www.kaisernetwork.org/daily_reports/rep_index.cfm?DR_ID=19017>
[46] NACO and Dr. James Blanchard, associate professor, Community Health Sciences, University of Manitoba. "Populations, Pathogens and Programs: Strategic and Practical Issues for STI/HIV Prevention in India." Presentation at the Center for AIDS Prevention Studies, University of California San Francisco, March 5, 2002.
[47] Sivaram S. "Integrating income generation and AIDS prevention efforts: lessons from working with devadasi women in rural Karnataka, India." Abstract no. MoOrF1048. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[48] NACO and Dr. James Blanchard, associate professor, Community Health Sciences, University of Manitoba. "Populations, Pathogens and Programs: Strategic and Practical Issues for STI/HIV Prevention in India." Presentation at the Center for AIDS Prevention Studies, University of California San Francisco, March 5, 2002.
[49] Solomon S, Ganesh AK. "HIV in India." Topics in HIV Medicine 2002 Jul/Aug;10(3):19-24 <http://www.iasusa.org/pub/topics/2002/issue3/solomon-ganesh_hiv_india.pdf>
[50] UNDP. Human Development Report 2003. New York <http://www.undp.org/>
[51] Solomon S, Ganesh AK. "HIV in India." Topics in HIV Medicine 2002 Jul/Aug;10(3):19-24 <http://www.iasusa.org/pub/topics/2002/issue3/solomon-ganesh_hiv_india.pdf>
[52] U.S. National Intelligence Council. The Next Wave of HIV/AIDS: Nigeria, Ethiopia, Russia, India, and China. Report no. ICA 2002-04 D. Washington, DC: September 2002 <http://www.cia.gov/nic/pubs/other_products/ICA%20HIV-AIDS%20unclassified%20092302POSTGERBER.htm>
[53] Personal communication with Dr. Jayashree Ramakrishna, professor and head, Department of Health Education,

National Institute of Mental Health & Neuro Science, Bangalore, July 8, 2003.
[54] Solomon S, Ganesh AK. "HIV in India." Topics in HIV Medicine 2002 Jul/Aug;10(3):19-24 <http://www.iasusa.org/pub/topics/2002/issue3/solomon-ganesh_hiv_india.pdf>
[55] David E. Bloom, Ajay Mahal, Jaypee Sevilla, River Path Associates. AIDS & Economics. Paper prepared for Working Group 1 of the WHO Commission on Macroeconomics & Health. Cambridge, Mass.: Harvard University and Riverpath Associates, November 2001.
[56] Björkman, H., HIV/AIDS and Poverty Reduction Strategies. UNDP Policy Note. New York: UNDP, Bureau for Development Policy, 2002.
57 U.S. State Department. Background Note: India. Washington, DC: March 2000 <http://www.state.gov/r/pa/ei/bgn/3454pf.htm>
[58] Census of India. Census of India 2001: Provisional Population Totals. April 5, 2001 <http://www.censusindia.net/results/provindia1.html>
59 U.S. State Department. Background Note: India. Washington, DC: March 2000 <http://www.state.gov/r/pa/ei/bgn/3454pf.htm>
[60] World Bank. Country Brief: India. Washington, DC: September 2002 <http://lnweb18.worldbank.org/SAR/sa.nsf/Countries/India/4F3233D642E4BB3985256B4A00706AA7?OpenDocument>
61 Population Reference Bureau. World Population Data Sheet 2003. Washington, DC <http://www.prb.org>
62 Population Reference Bureau. World Population Data Sheet 2003. Washington, DC <http://www.prb.org>
63 Census of India. Census of India 2001: Provisional Population Totals. April 5, 2001 <http://www.censusindia.net/results/provindia1.html>
64 World Bank. India: Country Assistance Strategy. Washington, DC: 2001. <http://lnweb18.worldbank.org/sar/sa.nsf/6062ad876fb8c066852567d7005d648a/325408102115c21585256b20002d6697?OpenDocument>
65 World Bank. India: Country Assistance Strategy. Washington, DC: 2001. <http://lnweb18.worldbank.org/sar/sa.nsf/6062ad876fb8c066852567d7005d648a/325408102115c21585256b20002d6697?OpenDocument>
66 World Bank. India: Country Assistance Strategy. Washington, DC: 2001. <http://lnweb18.worldbank.org/sar/sa.nsf/6062ad876fb8c066852567d7005d648a/325408102115c21585256b20002d6697?OpenDocument>
67 World Bank. India: Country Assistance Strategy. Washington, DC: 2001. <http://lnweb18.worldbank.org/sar/sa.nsf/6062ad876fb8c066852567d7005d648a/325408102115c21585256b20002d6697?OpenDocument>
68 World Bank. India: Country Assistance Strategy. Washington, DC: 2001. <http://lnweb18.worldbank.org/sar/sa.nsf/6062ad876fb8c066852567d7005d648a/325408102115c21585256b20002d6697?OpenDocument>
69 World Bank. India: Country Assistance Strategy. Washington, DC: 2001. <http://lnweb18.worldbank.org/sar/sa.nsf/6062ad876fb8c066852567d7005d648a/325408102115c21585256b20002d6697?OpenDocument>
70 World Bank. India: Country Assistance Strategy. Washington, DC: 2001. <http://lnweb18.worldbank.org/sar/sa.nsf/6062ad876fb8c066852567d7005d648a/325408102115c21585256b20002d6697?OpenDocument>
71 World Bank. India: Country Assistance Strategy. Washington, DC: 2001. <http://lnweb18.worldbank.org/sar/sa.nsf/6062ad876fb8c066852567d7005d648a/325408102115c21585256b20002d6697?OpenDocument>
72 World Food Programme. Country Brief: India. n.d. <http://www.wfp.org/country_brief/indexcountry.asp?country=356> Accessed February 2003.
73 Population Reference Bureau. World Population Data Sheet 2003. Washington, DC <http://www.prb.org>
74 U.S. State Department. Background Note: India. Washington, DC: March 2000 <http://www.state.gov/r/pa/ei/bgn/3454pf.htm>
75 U.S. State Department. Background Note: India. Washington, DC: March 2000 <http://www.state.gov/r/pa/ei/bgn/3454pf.htm>
76 U.S. State Department. Background Note: India. Washington, DC: March 2000 <http://www.state.gov/r/pa/ei/bgn/3454pf.htm>
77 World Bank. Country Brief: India. Washington, DC: September 2002

<http://lnweb18.worldbank.org/SAR/sa.nsf/Countries/India/4F3233D642E4BB3985256B4A00706AA7?OpenDocument>
78 World Bank. India: Country Assistance Strategy. Washington, DC: 2001. <http://lnweb18.worldbank.org/sar/sa.nsf/6062ad876fb8c066852567d7005d648a/325408102115c21585256b20002d6697?OpenDocument>
79 World Bank. India: Country Assistance Strategy: Progress Report. Report No.25057-IN. Washington, DC: January 15, 2003 <http://lnweb18.worldbank.org/SAR/sa.nsf/Attachments/tes/$File/prrpt.pdf>
80 World Bank. Country Brief: India. Washington, DC: September 2002 <http://lnweb18.worldbank.org/SAR/sa.nsf/Countries/India/4F3233D642E4BB3985256B4A00706AA7?OpenDocument>
81 David H. Peters, Abdo S. Yazbeck, Rashmi R. Sharma, G. N. V. Ramana, Lant H. Pritchett, Adam Wagstaff. Better Health Systems for India's Poor: Findings, Analysis, and Options. Washington, DC: World Ban, 2002 <http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2002/05/30/000094946_02051604053640/Rendered/PDF/multi0page.pdf>
82 World Bank. Country Brief: India. Washington, DC: September 2002 <http://lnweb18.worldbank.org/SAR/sa.nsf/Countries/India/4F3233D642E4BB3985256B4A00706AA7?OpenDocument>
83 U.S. State Department. Background Note: India. Washington, DC: March 2000 <http://www.state.gov/r/pa/ei/bgn/3454pf.htm>
84 U.S. State Department. Background Note: India. Washington, DC: March 2000 <http://www.state.gov/r/pa/ei/bgn/3454pf.htm>
85 U.S. State Department. Background Note: India. Washington, DC: March 2000 <http://www.state.gov/r/pa/ei/bgn/3454pf.htm>
86 Lynn Carter, Edward Anderson. India: A Preliminary DG Assessment. Washington, DC: USAID, June 21, 2001 <http://www.dec.org/pdf_docs/PNACP896.pdf>
87 U.S. State Department. Background Note: India. Washington, DC: March 2000 <http://www.state.gov/r/pa/ei/bgn/3454pf.htm>
88 U.S. State Department. Background Note: India. Washington, DC: March 2000 <http://www.state.gov/r/pa/ei/bgn/3454pf.htm>
89 U.S. State Department. Background Note: India. Washington, DC: March 2000 <http://www.state.gov/r/pa/ei/bgn/3454pf.htm>
90 U.S. State Department. Background Note: India. Washington, DC: March 2000 <http://www.state.gov/r/pa/ei/bgn/3454pf.htm>
91 World Bank. India: Country Assistance Strategy: Progress Report. Report No.25057-IN. Washington, DC: January 15, 2003 <http://lnweb18.worldbank.org/SAR/sa.nsf/Attachments/tes/$File/prrpt.pdf>
92 U.S. State Department. Background Note: India. Washington, DC: March 2000 <http://www.state.gov/r/pa/ei/bgn/3454pf.htm>
[93] Nirupam Bajpai. A Decade of Economic Reforms in India: The Unfinished Agenda. Harvard Center for International Development Working Paper no. 89. Cambridge, Mass.: April 2002 <http://www2.cid.harvard.edu/cidwp/089.pdf>

94 World Bank. World Development Indicators 2002. Washington, DC <http://www.worldbank.org>
95 U.S. State Department. Background Note: India. Washington, DC: March 2000 <http://www.state.gov/r/pa/ei/bgn/3454pf.htm>
96 U.S. State Department. Background Note: India. Washington, DC: March 2000 <http://www.state.gov/r/pa/ei/bgn/3454pf.htm>
97 World Bank. India: Country Assistance Strategy: Progress Report. Report No.25057-IN. Washington, DC: January 15, 2003 <http://lnweb18.worldbank.org/SAR/sa.nsf/Attachments/tes/$File/prrpt.pdf>
98 World Bank. India: Country Assistance Strategy: Progress Report. Report No.25057-IN. Washington, DC: January 2003 <http://lnweb18.worldbank.org/SAR/sa.nsf/Attachments/tes/$File/prrpt.pdf>
[99] World Bank. World Development Indicators 2003. Washington, DC <http://www.worldbank.org>
100 World Bank. Country Brief: India. Washington, DC: September 2002 <http://lnweb18.worldbank.org/SAR/sa.nsf/Countries/India/4F3233D642E4BB3985256B4A00706AA7?OpenDocument>

101 World Bank. India: Country Assistance Strategy. Washington, DC: 2001. <http://lnweb18.worldbank.org/sar/sa.nsf/6062ad876fb8c066852567d7005d648a/325408102115c21585256b20002d6697?OpenDocument>
102 World Bank. India: Country Assistance Strategy: Progress Report. Report No.25057-IN. Washington, DC: January 15, 2003 <http://lnweb18.worldbank.org/SAR/sa.nsf/Attachments/tes/$File/prrpt.pdf>
103 World Bank. India: Country Assistance Strategy: Progress Report. Report No.25057-IN. Washington, DC: January 15, 2003 <http://lnweb18.worldbank.org/SAR/sa.nsf/Attachments/tes/$File/prrpt.pdf>
104 World Bank. India: Country Assistance Strategy: Progress Report. Report No.25057-IN. Washington, DC: January 15, 2003 <http://lnweb18.worldbank.org/SAR/sa.nsf/Attachments/tes/$File/prrpt.pdf>
[105] World Bank. Country Brief: India. Washington, DC: September 2002 <http://lnweb18.worldbank.org/SAR/sa.nsf/Countries/India/4F3233D642E4BB3985256B4A00706AA7?OpenDocument>
106 World Bank. World Development Indicators 2002. Washington, DC <http://www.worldbank.org>
[107] World Bank. World Development Indicators 2003. Washington, DC <http://www.worldbank.org>
[108] World Bank. World Development Indicators 2003. Washington, DC <http://www.worldbank.org>
[109] World Bank, South Asia Region, Poverty Reduction and Economic Management Sector Unit. India: Sustaining Reform, Reducing Poverty. Report No. 25797-IN. Washington, DC: July 14, 2003 <http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2003/07/18/000012009_20030718114757/Rendered/PDF/257970IN.pdf>
[110] World Bank, South Asia Region, Poverty Reduction and Economic Management Sector Unit. India: Sustaining Reform, Reducing Poverty. Report No. 25797-IN. Washington, DC: July 14, 2003 <http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2003/07/18/000012009_20030718114757/Rendered/PDF/257970IN.pdf>
[111] UNDP. Human Development Report 2003. New York <http://www.undp.org/>
[112] Purohit BC. "Private initiatives and policy options: recent health system experience in India." Health Policy and Planning 2001;16(1):87–97.
113 David H. Peters, Abdo S. Yazbeck, Rashmi R. Sharma, G. N. V. Ramana, Lant H. Pritchett, Adam Wagstaff. Better Health Systems for India's Poor: Findings, Analysis, and Options. Washington, DC: World Ban, 2002 <http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2002/05/30/000094946_02051604053640/Rendered/PDF/multi0page.pdf>
[114] World Bank, South Asia Region, Poverty Reduction and Economic Management Sector Unit. India: Sustaining Reform, Reducing Poverty. Report No. 25797-IN. Washington, DC: July 14, 2003 <http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2003/07/18/000012009_20030718114757/Rendered/PDF/257970IN.pdf>
115 World Bank. India: Policies to Reduce Poverty and Accelerate Sustainable Development. Washington, DC: January 31, 2000 <http://lnweb18.worldbank.org/sar/sa.nsf/a22044d0c4877a3e852567de0052e0fa/a416ffbabff94bdf85256881005f686f?OpenDocument>
116 World Bank. India: Country Assistance Strategy: Progress Report. Report No.25057-IN. Washington, DC: January 15, 2003 <http://lnweb18.worldbank.org/SAR/sa.nsf/Attachments/tes/$File/prrpt.pdf>
[117] Nirupam Bajpai. A Decade of Economic Reforms in India: The Unfinished Agenda. Harvard Center for International Development Working Paper no. 89. Cambridge, Mass.: April 2002 <http://www2.cid.harvard.edu/cidwp/089.pdf>
[118] Nirupam Bajpai. A Decade of Economic Reforms in India: The Unfinished Agenda. Harvard Center for International Development Working Paper no. 89. Cambridge, Mass.: April 2002 <http://www2.cid.harvard.edu/cidwp/089.pdf>
[119] Nirupam Bajpai. A Decade of Economic Reforms in India: The Unfinished Agenda. Harvard Center for International Development Working Paper no. 89. Cambridge, Mass.: April 2002 <http://www2.cid.harvard.edu/cidwp/089.pdf>
[120] Nirupam Bajpai. A Decade of Economic Reforms in India: The Unfinished Agenda. Harvard Center for International Development Working Paper no. 89. Cambridge, Mass.: April 2002

<http://www2.cid.harvard.edu/cidwp/089.pdf>
[121] World Bank. India: Country Assistance Strategy: Progress Report. Report No.25057-IN. Washington, DC: January 15, 2003 <http://lnweb18.worldbank.org/SAR/sa.nsf/Attachments/tes/$File/prrpt.pdf>

122 World Bank. India: Country Assistance Strategy. Report no. 22541 IN. Washington, DC: 2001 <http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2001/08/10/000094946_01072804152899/Rendered/PDF/multi0page.pdf>
123 World Bank. Country Brief: India. Washington, DC: September 2002 <http://lnweb18.worldbank.org/SAR/sa.nsf/Countries/India/4F3233D642E4BB3985256B4A00706AA7?OpenDocument>
124 World Bank. World Development Indicators 2002. Washington, DC.
125 World Bank. India: Country Assistance Strategy. Report no. 22541 IN. Washington, DC: 2001 <http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2001/08/10/000094946_01072804152899/Rendered/PDF/multi0page.pdf>
126 Lynn Carter, Edward Anderson. India: A Preliminary DG Assessment. Washington, DC: USAID, June 21, 2001 <http://www.dec.org/pdf_docs/PNACP896.pdf>
[127] Nirupam Bajpai. A Decade of Economic Reforms in India: The Unfinished Agenda. Harvard Center for International Development Working Paper no. 89. Cambridge, Mass.: April 2002 <http://www2.cid.harvard.edu/cidwp/089.pdf>
128 Kapur Mehta A, Shah A. "Chronic Poverty in India: Incidence, Causes and Policies." World Development 2003 Mar;31(3):491-511.
129 Robin Mearns. Access to Land in Rural India. Policy Research Working Paper no. 2123. Washington, DC: World Bank, May 1999 <http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/1999/09/14/000094946_99060905321228/Rendered/PDF/multi_page.pdf>
[130] World Food Program. Executive Board, Third Regular Session, October 22-26, 2001. Country Programme—India (2003–2007). Document no. WFP/EB.3/2001/8/1. Rome: September 5, 2001 <http://www.wfp.org/country_brief/indexcountry.asp?country=356>
131 World Food Program. Evaluation Reports: Summary Report Of the Mid-Term Evaluation of Country Programme—India (1997–2001). Executive Board, Second Regular Session, Rome, May 16-18, 2001. Document no. WFP/EB.2/2001/3/3 <http://www.wfp.org/index.asp?section=7_1>
132 World Bank. India: Andhra Pradesh District Poverty Project. Project Information Document. Report no. PID8323. Washington, DC: February 22, 2000 <http://www-wds.worldbank.org/servlet/WDSServlet?pcont=details&eid=000094946_99111305444943>
133 Lynn Carter, Edward Anderson. India: A Preliminary DG Assessment. Washington, DC: USAID, June 21, 2001 <http://www.dec.org/pdf_docs/PNACP896.pdf>
134 World Bank. India: Country Assistance Strategy. Washington, DC: 2001. <http://lnweb18.worldbank.org/sar/sa.nsf/6062ad876fb8c066852567d7005d648a/325408102115c21585256b20002d6697?OpenDocument>
135 Lynn Carter, Edward Anderson. India: A Preliminary DG Assessment. Washington, DC: USAID, June 21, 2001 <http://www.dec.org/pdf_docs/PNACP896.pdf>
136 Lynn Carter, Edward Anderson. India: A Preliminary DG Assessment. Washington, DC: USAID, June 21, 2001 <http://www.dec.org/pdf_docs/PNACP896.pdf>
137 Lynn Carter, Edward Anderson. India: A Preliminary DG Assessment. Washington, DC: USAID, June 21, 2001 <http://www.dec.org/pdf_docs/PNACP896.pdf>
138 Gurharpal Singh. South Asia. Global Corruption Report 2003. Berlin: Transparency International, 2003 <http://www.globalcorruptionreport.org/download/gcr2003/15_South_Asia_(Singh).pdf>
139 Gurharpal Singh. South Asia. Global Corruption Report 2003. Berlin: Transparency International, 2003 <http://www.globalcorruptionreport.org/download/gcr2003/15_South_Asia_(Singh).pdf>
140 Gurharpal Singh. South Asia. Global Corruption Report 2003. Berlin: Transparency International, 2003 <http://www.globalcorruptionreport.org/download/gcr2003/15_South_Asia_(Singh).pdf>
141 Lynn Carter, Edward Anderson. India: A Preliminary DG Assessment. Washington, DC: USAID, June 21, 2001 <http://www.dec.org/pdf_docs/PNACP896.pdf>
142 Lynn Carter, Edward Anderson. India: A Preliminary DG Assessment. Washington, DC: USAID, June 21, 2001 <http://www.dec.org/pdf_docs/PNACP896.pdf>

143 Human Rights Watch. Epidemic of Abuse: Police Harassment of HIV/AIDS Outreach Workers in India. New York: July 2002 <http://www.hrw.org/reports/2002/india2/>
144 Lynn Carter, Edward Anderson. India: A Preliminary DG Assessment. Washington, DC: USAID, June 21, 2001 <http://www.dec.org/pdf_docs/PNACP896.pdf>
145 Lynn Carter, Edward Anderson. India: A Preliminary DG Assessment. Washington, DC: USAID, June 21, 2001 <http://www.dec.org/pdf_docs/PNACP896.pdf>
146 Lynn Carter, Edward Anderson. India: A Preliminary DG Assessment. Washington, DC: USAID, June 21, 2001 <http://www.dec.org/pdf_docs/PNACP896.pdf>
147 Lynn Carter, Edward Anderson. India: A Preliminary DG Assessment. Washington, DC: USAID, June 21, 2001 <http://www.dec.org/pdf_docs/PNACP896.pdf>
148 Human Rights Watch. Epidemic of Abuse: Police Harassment of HIV/AIDS Outreach Workers in India. New York: July 2002 <http://www.hrw.org/reports/2002/india2/>
149 Gurharpal Singh. South Asia. Global Corruption Report 2003. Berlin: Transparency International, 2003 <http://www.globalcorruptionreport.org/download/gcr2003/15_South_Asia_(Singh).pdf>
150 Lynn Carter, Edward Anderson. India: A Preliminary DG Assessment. Washington, DC: USAID, June 21, 2001 <http://www.dec.org/pdf_docs/PNACP896.pdf>
151 Lynn Carter, Edward Anderson. India: A Preliminary DG Assessment. Washington, DC: USAID, June 21, 2001 <http://www.dec.org/pdf_docs/PNACP896.pdf>
[152] Oxfam. **"Gujarat earthquake response programme of Oxfam GB." London:** May 23, 2002 <http://www.reliefweb.int/w/rwb.nsf/0/bc4a28eb03b66be1c1256bc20046f6a4?OpenDocument>
[153] International Federation of the Red Cross. South Asia Appeal No. 01.24/2002 Programme Update No. 2. Geneva: Dec 31, 2002 <http://wwww.reliefweb.int/w/rwb.nsf/s/3A1720D0184A6055C1256CAA004C3D67>
154 Lynn Carter, Edward Anderson. India: A Preliminary DG Assessment. Washington, DC: USAID, June 21, 2001 <http://www.dec.org/pdf_docs/PNACP896.pdf>
155 U.S. State Department. Background Note: India. March 2000 <http://www.state.gov/r/pa/ei/bgn/3454pf.htm>
156 Lynn Carter, Edward Anderson. India: A Preliminary DG Assessment. Washington, DC: USAID, June 21, 2001 <http://www.dec.org/pdf_docs/PNACP896.pdf>
157 UNDP. Human Development Report 2003. New York <http://www.undp.org/>
[158] UNDP. Human Development Report 2003. New York <http://www.undp.org/>
159 World Bank. India: Country Assistance Strategy: Progress Report. Report No.25057-IN. Washington, DC: January 15, 2003 <http://lnweb18.worldbank.org/SAR/sa.nsf/Attachments/tes/$File/prrpt.pdf>
160 UNDP. Human Development Report 2002. New York <http://www.undp.org/>
[161] UNDP. Human Development Report 2003. New York <http://www.undp.org/>
162 UNDP. Human Development Report 2002. New York <http://www.undp.org/>
163 David H. Peters, Abdo S. Yazbeck, Rashmi R. Sharma, G. N. V. Ramana, Lant H. Pritchett, Adam Wagstaff. Better Health Systems for India's Poor: Findings, Analysis, and Options. Washington, DC: World Ban, 2002 <http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2002/05/30/000094946_02051604053640/Rendered/PDF/multi0page.pdf>
164 R. Malhotra. "Measuring Well Being and Poverty in India's Human Development Report." India: Workshop on Poverty Measurement, Monitoring and Evaluation,, January 11-12, New Delhi. World Bank and the Planning Commission of the Government of India <http://lnweb18.worldbank.org/sar/sa.nsf/Attachments/rm/$File/malhotra0abstract.pdf>
[165] UNDP. Human Development Report 2003. New York <http://www.undp.org/>
166 World Bank. World Bank Support for Education in India. Washington, DC: September 1999 <http://lnweb18.worldbank.org/sar/sa.nsf/6062ad876fb8c066852567d7005d648a/3436a2c8a70b8463852567ef0066a42e?OpenDocument>
167 U.S. State Department. Background Note: India. Washington, DC: March 2000 <http://www.state.gov/r/pa/ei/bgn/3454pf.htm>
168 UNDP HIV & Development Project South & Southwest Asia. HIV Vulnereability and Migration: A South Asian Perspective. New Delhi: October 2001 <http://www.hivandevelopment.org/publications/Pdf/HIV%20VUl%20Migration.pdf>
169 UNDP HIV & Development Project South & Southwest Asia. HIV Vulnereability and Migration: A South Asian Perspective. New Delhi: October 2001 <http://www.hivandevelopment.org/publications/Pdf/HIV%20VUl%20Migration.pdf>

[170] Population Reference Bureau. World Population Data Sheet 2003. Washington, DC <http://www.prb.org>
171 UNDP HIV & Development Project South & Southwest Asia. HIV Vulnereability and Migration: A South Asian Perspective. New Delhi: October 2001 <http://www.hivandevelopment.org/publications/Pdf/HIV%20VUl%20Migration.pdf>
[172] Patel D, Shankar WS, Alderfer WH, et al. "Mitigating risk of female household workers in India to HIV infection." Abstract no. G12601. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[173] Verghis S, Wolffers I, Fernandez I, et al. "Law, human rights and the HIV vulnerability of migrant workers." Abstract no. ThPeG8286. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[174] U.S. Department of State, *Victims of Trafficking and Violence Protection Act of 2000: Trafficking in Persons Report*. Washington, DC: 2003 <http://www.state.gov/g/tip/rls/tiprpt/2003/21276.htm#india>
175 UNDP HIV & Development Project South & Southwest Asia. HIV Vulnereability and Migration: A South Asian Perspective. New Delhi: October 2001 <http://www.hivandevelopment.org/publications/Pdf/HIV%20VUl%20Migration.pdf>
[176] International Institute for Population Sciences (IIPS) and ORC Macro. 2000. *National Family Health Survey (NFHS-2), 1998–99: India*. Mumbai: IIPS <http://www.measuredhs.com/pubs/pdftoc.cfm?ID=FRIND2&PgName=srch_results.cfm&Title=&Language=&Country=India&Year=&Type=&CFID=2412&CFTOKEN=81450050>
177 India GFATM Country Coordinating Mechanism. Proposal to the GFATM: Expansion of Effective Public and Private Sector Interventions in HIV, TB, and Malaria Prevention and Treatment in India. New Delhi, September 24, 2002 <http://www.globalfundatm.org/fundingproposals/indiauk.pdf>
[178] International Institute for Population Sciences (IIPS) and ORC Macro. 2000. *National Family Health Survey (NFHS-2), 1998–99: India*. Mumbai: IIPS <http://www.measuredhs.com/pubs/pdftoc.cfm?ID=FRIND2&PgName=srch_results.cfm&Title=&Language=&Country=India&Year=&Type=&CFID=2412&CFTOKEN=81450050>
[179] Italia YM, Gilada IS. "HIV epidemic more severe in Rural India." Abstract no. WePeC6220. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[180] Gupta K. "Social networking, knowledge of hiv/aids and risk-taking behaviour among migrant workers in Mumbai and Surat, India." Abstract no. C10926. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[181] Sankaranarayanan S, Pandit DD, Gogate AS. "Community based survey on attitudinal and behavioural pattern of youth in slums with reference to HIV and issues related to Sexuality." Abstract no. MoPeC3465. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[182] Maitreya J, Jayasree AK. "Decriminalizing sexwork is a necessity." Abstract no. TuPeG5544. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[183] Kurup AS, Mathew A, Joseph DP. "Need for integrating care & prevention: Experience from a low HIV prevalent State in India." Abstract no. TuPeG5663. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[184] Nair RV, Purohit A, Mora CJ, et al. "HIV survey among migrant populations and their communities in Rural Rajasthan." Abstract no. F12013. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[185] Sharma S, Sharma R, Rathore N, et al. "Sero-concordant couples of migrant workers living with HIV/AIDS in Rural Rajasthan." Abstract no. E11637. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[186] Teraiya D, Pandya UA, Patel AA, et al. "Wide and varied coverage: Gujarat Experience." Abstract no. F11792. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[187] NACO. *National Baseline High Risk and Bridge Population Behavioural Surveillance Survey: 2001: Part 1.* New Delhi <http://www.naco.nic.in/nacp/publctn.htm>

188 Gupta A. "Law and vulnerable populations of sex workers and sexual minorities." Abstract no. WePeG6922. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
189 Human Rights Watch. Epidemic of Abuse: Police Harassment of HIV/AIDS Outreach Workers in India. New York: July 2002 <http://www.hrw.org/reports/2002/india2/>
[190] Hammett TM, Dolan KA, Bijl M, et al. "The burden of HIV infection among prisoners: targeting interventions to an underserved, marginalized population." Abstract no. MoPeE3800. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.

[191] Pachpinde PA. "Knowledge and commitment for action in HIV/AIDS prevention in prisons of Gujarat, India."

Abstract no. MoPeE3790. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[192] Lingamallu BP, Sukumara S, Chandramouli K, et al. "Effective Advocacy and Involvement: A key to meaningful interventions with prisons and prisoners." Abstract no. TuPeG5583. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[193] Patel AP, Pandya UA, Teraiya D, et al. "Working behind the bars: Gujarat experience with prison inmates." Abstract no. E11439. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[194] Gandhi KY. "Government response to the challenging prison intervention." Abstract no. G12763. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[195] Patel AP, Pandya UA, Teraiya D, et al. "Working behind the bars: Gujarat experience with prison inmates." Abstract no. E11439. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
196 Manoharan SJ, Mills SJ. "Dynamics and determinants of risk behaviors on India's national highways." Abstract no. TuOrC1229. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
197 World Bank.India's Transport Sector: The Challenges Ahead. Volume 1: Main Report. Washington, DC: May 10, 2002 <http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2002/08/16/000094946_02070604022321/Rendered/PDF/multi0page.pdf>
198 Bhuyan KK, Miils SJ, Dharmaraj D, et al. "Comparison of prevalence of STIs/HIV and their behavioral correlates among long distance inter-city truck drivers and helpers from three regions of India." Abstract no. WePeC6080. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
199 Manoharan SJ, Mills SJ. "Dynamics and determinants of risk behaviors on India's national highways." Abstract no. TuOrC1229. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
200 Kale SDK. "An integrated project on STD/HIV/AIDS intervention among truckers through vamp-a collective of women in sex work." Abstract no. MoPeD3564. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
201 Manoharan SJ, Mills SJ. "Dynamics and determinants of risk behaviors on India's national highways." Abstract no. TuOrC1229. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[202] World Food Program. Executive Board, Third Regular Session, October 22-26, 2001. Country Programme—India (2003–2007). Document no. WFP/EB.3/2001/8/1. Rome: September 5, 2001 <http://www.wfp.org/country_brief/indexcountry.asp?country=356>
[203] Agence France-Presse. "**Floods in east India displace three million, kill 73."** July 13, 2003 <http://wwww.reliefweb.int/w/rwb.nsf/s/F6F499D6A5333CF349256D63000E733A>
[204] Reuters. "**India deploys army as floods displace 400,000."** June 17, 2003 <http://wwww.reliefweb.int/w/rwb.nsf/s/05E71BDB0C0BC37F49256D48002364EC>
[205] Rajpurohit MPS, Nair RV, Mora CJ, et al. "Community based awareness of HIV/AIDS and sexually transmitted diseases (STDs) in rural Rajasthan." Abstract no. MoPeF3972. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
206 Aher A. "Intervention amongst MSMs at surface railway stations in Mumbai Metro." Abstract no. ThPeD7718. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
207 Shroffs S. "Motivating safer sex behavior for STI / HIV prevalence in the MSM sector in Mumbai metro." Abstract no. WePeE6534. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[208] Irudayasamy U, Williams J, Shyamprasad S, et al. "Low socio-economic status as a significant cause for high risk behavior among transgender (TG)." Abstract no. ThPeE7846. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[209] NACO. *National Baseline High Risk and Bridge Population Behavioural Surveillance Survey: 2002: Part 2.* New Delhi <http://www.naco.nic.in/nacp/publctn.htm>
[210] NACO. *National Baseline High Risk and Bridge Population Behavioural Surveillance Survey: 2002: Part 2.* New Delhi <http://www.naco.nic.in/nacp/publctn.htm>
211 UNDP. Human Development Report 2003. New York <http://www.undp.org/>
212 U.S. National Intelligence Council. The Next Wave of HIV/AIDS: Nigeria, Ethiopia, Russia, India, and China. Report no. ICA 2002-04 D. Washington, DC: September 2002 <http://www.cia.gov/nic/pubs/other_products/ICA%20HIV-AIDS%20unclassified%20092302POSTGERBER.htm>
[213] Indian Ministry of Tribal Affairs. Annual Report 2000-01. New Delhi: Accessed August 2003 <http://tribal.nic.in/AnnualReport.html>
[214] Indian Ministry of Tribal Affairs. Annual Report 2000-01. New Delhi: Accessed August 2003 <http://tribal.nic.in/AnnualReport.html>

[215] Indian Ministry of Tribal Affairs. Annual Report 2000-01. New Delhi: Accessed August 2003 <http://tribal.nic.in/AnnualReport.html>
[216] [216] Census of India. Census of India 1991. New Delhi: 1991 <http://www.censusindia.net/>

[217] Census of India. *Census of India 2001: Provisional Population Totals*. New Delhi: April 4, 2001 <http://www.censusindia.net/results/provindia1.html>
[218] Indian Ministry of Tribal Affairs. Annual Report 2000-01. New Delhi: Accessed August 2003 <http://tribal.nic.in/AnnualReport.html>
[219] Indian Ministry of Tribal Affairs. Social Defence: Displacement. New Delhi: Accessed August 2003 <http://tribal.nic.in/displacement.html>
[220] Indian Ministry of Tribal Affairs. Social Defence: Displacement. New Delhi: Accessed August 2003 <http://tribal.nic.in/displacement.html>
[221] l AA, Teraiya D, Mehta ND, et al. "Migration adding vulnerability to HIV/AIDS: Gujarat Tribal community experience." Abstract no. ThPeG8403. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[222] Personal communication with Dr. Saraswati Singh, head, Department of Psychology, MKP College, Dehradun, Uttaranchal, August 7, 2003.
[223] Paul C, Graney RM. "Tribal women and their risk to HIV/AIDS." Abstract no. WePeE6488. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[224] Karpur A, Naik EG, Balasubramaniam R, et al. "Are tribal people in India at risk for HIV/AIDS." Abstract no. MoPeE3746. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[225] Naik EG, Karpur A, Balasubramaniam R, et al. "Indian tribals: an emerging high-risk group for HIV/AIDS." Abstract no. WePeE6491. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[226] Govidarajulu Srinivas G, Manjula Datta D. "Sexual behaviors among tribal populations in South India." Abstract no. 10843. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[227] Muthiah PM, Parimala Devi PP, Judestphens EJ. "Intervention at hill top!" Abtract no. F12043. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[228] Patel D, Shankar WS, Alderfer WH, et al. "Mitigating risk of female household workers in India to HIV infection." Abstract no. G12601. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[229] l AA, Teraiya D, Mehta ND, et al. "Migration adding vulnerability to HIV/AIDS: Gujarat Tribal community experience." Abstract no. ThPeG8403. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
230 UNDP HIV & Development Project South & Southwest Asia. HIV Vulnereability and Migration: A South Asian Perspective. New Delhi: October 2001 <http://www.hivandevelopment.org/publications/Pdf/HIV%20VUl%20Migration.pdf>
231 UNDP HIV & Development Project South & Southwest Asia. HIV Vulnereability and Migration: A South Asian Perspective. New Delhi: October 2001 <http://www.hivandevelopment.org/publications/Pdf/HIV%20VUl%20Migration.pdf>
232 UNDP HIV & Development Project South & Southwest Asia. HIV Vulnereability and Migration: A South Asian Perspective. New Delhi: October 2001 <http://www.hivandevelopment.org/publications/Pdf/HIV%20VUl%20Migration.pdf>
233 UNDP HIV & Development Project South & Southwest Asia. HIV Vulnereability and Migration: A South Asian Perspective. New Delhi: October 2001 <http://www.hivandevelopment.org/publications/Pdf/HIV%20VUl%20Migration.pdf>
234 UNDP HIV & Development Project South & Southwest Asia. HIV Vulnereability and Migration: A South Asian Perspective. New Delhi: October 2001 <http://www.hivandevelopment.org/publications/Pdf/HIV%20VUl%20Migration.pdf>
235 UNDP HIV & Development Project South & Southwest Asia. HIV Vulnereability and Migration: A South Asian Perspective. New Delhi: October 2001 <http://www.hivandevelopment.org/publications/Pdf/HIV%20VUl%20Migration.pdf>
236 UNDP HIV & Development Project South & Southwest Asia. HIV Vulnereability and Migration: A South Asian Perspective. New Delhi: October 2001 <http://www.hivandevelopment.org/publications/Pdf/HIV%20VUl%20Migration.pdf>
237 UNDP HIV & Development Project South & Southwest Asia. HIV Vulnereability and Migration: A South Asian Perspective. New Delhi: October 2001 <http://www.hivandevelopment.org/publications/Pdf/HIV%20VUl%20Migration.pdf>
238 UNDP HIV & Development Project South & Southwest Asia. HIV Vulnereability and Migration: A South

Asian Perspective. New Delhi: October 2001 <http://www.hivandevelopment.org/publications/Pdf/HIV%20VUl%20Migration.pdf>
[239] UNHCR. Refugees and Others of Concern to UNHCR: 2000 Statistical Overview. Geneva: June 2002 <http://www.unhcr.ch/cgi-bin/texis/vtx/statistics/+bwwBmeIUNB8wwwwhwwwwwwwhFqAIRERfIRfgItFqA5BwBo5Boq5zFqAIRERfIRfgIAFqAIRERfIRfgIDzmxwwwwwww1FqAIRERfIRfgI/opendoc.pdf>
[240] UNHCR. Statistical Yearbook 2001. Geneva: November 2002 <http://www.unhcr.ch/cgi-bin/texis/vtx/template/+RwLFqv5BwBo5Boq5eUh5cTPeUzknwBoqeRzknwBo5Boqwce6lxxwGxddAeRyBDXWeRDlmqeIybnM>
[241] U.S. Department of State, *Victims of Trafficking and Violence Protection Act of 2000: Trafficking in Persons Report*. Washington, DC: 2003 <http://www.state.gov/g/tip/rls/tiprpt/2003/21276.htm#india>
[242] U.S. Department of State, *Victims of Trafficking and Violence Protection Act of 2000: Trafficking in Persons Report*. Washington, DC: 2003 <http://www.state.gov/g/tip/rls/tiprpt/2003/21276.htm#india>
[243] U.S. Department of State, *Victims of Trafficking and Violence Protection Act of 2000: Trafficking in Persons Report*. Washington, DC: 2003 <http://www.state.gov/g/tip/rls/tiprpt/2003/21276.htm#india>
[244] U.S. Department of State, *Victims of Trafficking and Violence Protection Act of 2000: Trafficking in Persons Report*. Washington, DC: 2003 <http://www.state.gov/g/tip/rls/tiprpt/2003/21276.htm#india>
245 Sharma Mahendra V, Costello Daly C, Bhattarai P, et al. "Safe migration strategies urgently required for the prevention of trafficking in South Asia." Abstract no. ThPeD7688. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
246 Sharma Mahendra V, Bhattarai P, Evans C, et al. "Over-emphasizing HIV/AIDS risk in anti-trafficking programs can contribute to increasing stigma and discrimination- Lessons from Nepal." Abstract no. ThPeE7910. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
247 Tandon T. "Interventions to counter trafficking of children and their impact on vulnerability of sex workers." Abstract no. ThOrG1417. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
248 World Bank. World Development Indicators 2002. Washington, DC <http://www.worldbank.org>
249 World Bank. The World Bank Group and Health Sector Development and Disease Control in India. Washington, DC: Accessed February 2003 <http://lnweb18.worldbank.org/sar/sa.nsf/a22044d0c4877a3e852567de0052e0fa/323948506dfae1348525687b0062dc53?OpenDocument>
250 World Bank. The World Bank Group and Health Sector Development and Disease Control in India. Washington, DC: Accessed February 2003 <http://lnweb18.worldbank.org/sar/sa.nsf/a22044d0c4877a3e852567de0052e0fa/323948506dfae1348525687b0062dc53?OpenDocument>
251 World Bank. India: Country Assistance Strategy: Progress Report. Report No.25057-IN. January 15, 2003 <http://lnweb18.worldbank.org/SAR/sa.nsf/Attachments/tes/$File/prrpt.pdf>
252 David H. Peters, Abdo S. Yazbeck, Rashmi R. Sharma, G. N. V. Ramana, Lant H. Pritchett, Adam Wagstaff. Better Health Systems for India's Poor: Findings, Analysis, and Options. Washington, DC: World Ban, 2002 <http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2002/05/30/000094946_02051604053640/Rendered/PDF/multi0page.pdf>
[253] World Bank, South Asia Region, Poverty Reduction and Economic Management Sector Unit. India: Sustaining Reform, Reducing Poverty. Report No. 25797-IN. Washington, DC: July 14, 2003 <http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2003/07/18/000012009_20030718114757/Rendered/PDF/257970IN.pdf>
254 World Bank. India: Country Assistance Strategy. Washington, DC: June 27, 2001 <http://lnweb18.worldbank.org/sar/sa.nsf/6062ad876fb8c066852567d7005d648a/325408102115c21585256b20002d6697?OpenDocument>
255 World Food Program. Evaluation Reports: Summary Report Of the Mid-Term Evaluation of Country Programme—India (1997–2001). Executive Board, Second Regular Session, Rome, May 16-18, 2001. Document no. WFP/EB.2/2001/3/3 <http://www.wfp.org/index.asp?section=7_1>
256 World Bank. India: Country Assistance Strategy: Progress Report. Report No.25057-IN. Washington, DC: January 2003 <http://lnweb18.worldbank.org/SAR/sa.nsf/Attachments/tes/$File/prrpt.pdf>
257 India GFATM Country Coordinating Mechanism. Proposal to the GFATM: Expansion of Effective Public and

Private Sector Interventions in HIV, TB, and Malaria Prevention and Treatment in India. New Delhi, September 24, 2002 <http://www.globalfundatm.org/fundingproposals/indiauk.pdf>
258 David H. Peters, Abdo S. Yazbeck, Rashmi R. Sharma, G. N. V. Ramana, Lant H. Pritchett, Adam Wagstaff. Better Health Systems for India's Poor: Findings, Analysis, and Options. Washington, DC: World Ban, 2002 <http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2002/05/30/000094946_02051604053640/Rendered/PDF/multi0page.pdf>
259 World Bank. India: Country Assistance Strategy. Washington, DC: June 27, 2001 <http://lnweb18.worldbank.org/sar/sa.nsf/6062ad876fb8c066852567d7005d648a/325408102115c21585256b20002d6697?OpenDocument>
[260] International Institute for Population Sciences (IIPS) and ORC Macro. 2000. *National Family Health Survey (NFHS-2), 1998–99: India*. Mumbai: IIPS <http://www.measuredhs.com/pubs/pdftoc.cfm?ID=FRIND2&PgName=srch_results.cfm&Title=&Language=&Country=India&Year=&Type=&CFID=2412&CFTOKEN=81450050>
[261] UNDP. Human Development Report 2003. New York <http://www.undp.org/>
[262] UNDP. Human Development Report 2003. New York <http://www.undp.org/>
263 David H. Peters, Abdo S. Yazbeck, Rashmi R. Sharma, G. N. V. Ramana, Lant H. Pritchett, Adam Wagstaff. Better Health Systems for India's Poor: Findings, Analysis, and Options. Washington, DC: World Ban, 2002 <http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2002/05/30/000094946_02051604053640/Rendered/PDF/multi0page.pdf>
264 David H. Peters, Abdo S. Yazbeck, Rashmi R. Sharma, G. N. V. Ramana, Lant H. Pritchett, Adam Wagstaff. Better Health Systems for India's Poor: Findings, Analysis, and Options. Washington, DC: World Ban, 2002 <http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2002/05/30/000094946_02051604053640/Rendered/PDF/multi0page.pdf>
265 David H. Peters, Abdo S. Yazbeck, Rashmi R. Sharma, G. N. V. Ramana, Lant H. Pritchett, Adam Wagstaff. Better Health Systems for India's Poor: Findings, Analysis, and Options. Washington, DC: World Ban, 2002 <http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2002/05/30/000094946_02051604053640/Rendered/PDF/multi0page.pdf>
[266] International Institute for Population Sciences (IIPS) and ORC Macro. 2000. *National Family Health Survey (NFHS-2), 1998–99: India*. Mumbai: IIPS <http://www.measuredhs.com/pubs/pdftoc.cfm?ID=FRIND2&PgName=srch_results.cfm&Title=&Language=&Country=India&Year=&Type=&CFID=2412&CFTOKEN=81450050>
[267] World Bank. India: Country Assistance Strategy: Progress Report. Report No.25057-IN. Washington, DC: January 15, 2003 <http://lnweb18.worldbank.org/SAR/sa.nsf/Attachments/tes/$File/prrpt.pdf>
268 David H. Peters, Abdo S. Yazbeck, Rashmi R. Sharma, G. N. V. Ramana, Lant H. Pritchett, Adam Wagstaff. Better Health Systems for India's Poor: Findings, Analysis, and Options. Washington, DC: World Ban, 2002 <http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2002/05/30/000094946_02051604053640/Rendered/PDF/multi0page.pdf>
269 David H. Peters, Abdo S. Yazbeck, Rashmi R. Sharma, G. N. V. Ramana, Lant H. Pritchett, Adam Wagstaff. Better Health Systems for India's Poor: Findings, Analysis, and Options. Washington, DC: World Ban, 2002 <http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2002/05/30/000094946_02051604053640/Rendered/PDF/multi0page.pdf>
270 World Bank. India: Policies to Reduce Poverty and Accelerate Sustainable Development. Washington, DC: January 31, 2000 <http://lnweb18.worldbank.org/sar/sa.nsf/a22044d0c4877a3e852567de0052e0fa/a416ffbabff94bdf85256881005f686f?OpenDocument>
271 WHO. Global Tuberculosis Control 2003: Surveillance, Planning, Financing. Geneva: 2003 <http://www.who.int/gtb/publications/>
272 WHO. Global Tuberculosis Control 2003: Surveillance, Planning, Financing. Geneva: 2003 <http://www.who.int/gtb/publications/>

273 Ramasundaram S. "Can India avoid being devastated by HIV?" BMJ 2002 Jan 26;324(7331):182-83.
274 India GFATM Country Coordinating Mechanism. Proposal to the GFATM: Expansion of Effective Public and Private Sector Interventions in HIV, TB, and Malaria Prevention and Treatment in India. New Delhi, September 24, 2002 <http://www.globalfundatm.org/fundingproposals/indiauk.pdf>
275 Kumarasamy N, Solomon S, Flanigan TP, et al. "Natural history of human immunodeficiency virus disease in southern India." Clin Infect Dis 2003 Jan 1;36(1):79-85.
276 Web site of India's Revised National Tuberculosis Control Programme (RNTCP), Directorate General of Health Services, Ministry of Health and Family Welfare <http://www.tbcindia.org> Accessed April 2003.
277 WHO. Global Tuberculosis Control 2003: Surveillance, Planning, Financing. Geneva: 2003 <http://www.who.int/gtb/publications/>
278 Population Reference Bureau. World Population Data Sheet 2003. Washington, DC. <http://www.prb.org>
279 Central TB Division, Directorate General of HealthServices, Indian Ministry of Health and Family Welfare. Revised National TB Control Programme (RNTCP): Performance Report, India. First Quarter, 2003. New Delhi: 2003 <http://www.tbcindia.org/PERF1q03.pdf >
280 WHO. Global Tuberculosis Control: Surveillance, Planning, Financing. Geneva: 2002 <http://www.who.int/gtb/publications/globrep02/>
281 WHO. Global Tuberculosis Control 2003: Surveillance, Planning, Financing. Geneva: 2003 <http://www.who.int/gtb/publications/>
282 International HIV/AIDS Alliance. Improving Access to HIV/AIDS-related Treatment: A Report Sharing Experiences and Lessons Learned on Improving Access to HIV/AIDS-related Treatment. London: June 2002 <http://www.aidsalliance.org/_docs/_languages/_eng/_content/_3_publications/download/Reports/Access_To_Treatment_Report.pdf>
283 Pathania VS. "Why the Indian TB control programme must stop ignoring private practitioners. " Int J Tuberc Lung Dis 2001 Feb; 5(2):201-03.
284 Ganapati Mudur. "News: Those who do treat, frequently prescribe the wrong tuberculosis drugs." BMJ 1998;317:904.
285 Uplekar M, Juvekar S, Morankar S, et al. "Tuberculosis patients and practitioners in private clinics in India." Int J Tuberc Lung Dis 1998 Apr;2(4):324-29.
286 Uplekar MW, Rangan S. "Private doctors and tuberculosis control in India." Tuberc Lung Dis 1993;74: 332-37.
287 Ganapati Mudur. "News: Those who do treat, frequently prescribe the wrong tuberculosis drugs. BMJ 1998;317:904.
288 Uplekar M, Juvekar S, Morankar S, et al. "Tuberculosis patients and practitioners in private clinics in India." Int J Tuberc Lung Dis 1998 Apr;2(4):324-29.
289 Ramakrishnan T, Chandrasekhar P. "The control of tuberculosis: A continuous game of snakes and ladders." J Bioscience 1999;24(2):143-52.
290 Pathania VS. "Why the Indian TB control programme must stop ignoring private practitioners. " Int J Tuberc Lung Dis 2001 Feb; 5(2):201-03.
291 Ganapati Mudur. "News: Those who do treat, frequently prescribe the wrong tuberculosis drugs." BMJ 1998;317:904.
292 Ogden J, Rangan S, Uplekar M, et al. "Shifting the paradigm in tuberculosis control: illustrations from India." Int J Tuberc Lung Dis. 1999 Oct; 3(10):855-61.
293 Uplekar, MW, Rangan S, Tackling TB. The Search for Solutions. Bombay: Foundation for Research in Community Health, 1996.
294 Udwadia ZF (2001) India's Multidrug-Resistant Tuberculosis Crisis Annals of the New York Academy of Sciences 953:98-105 New York Academy of Sciences
295 Uplekar M, Juvekar S, Morankar S, et al. "Tuberculosis patients and practitioners in private clinics in India." Int J Tuberc Lung Dis 1998 Apr;2(4):324-29.
296 Ogden J, Rangan S, Uplekar M, Porter J, Brugha R, Zwi A, Nyheim D. (1999) Shifting the paradigm in tuberculosis control: illustrations from India Int J Tuberc Lung Dis. Oct; 3(10):855-61
297 Udwadia ZF (2001) India's Multidrug-Resistant Tuberculosis Crisis Annals of the New York Academy of Sciences 953:98-105 New York Academy of Sciences
298 Prabhakar R. (2000) Tuberculosis control in India--past, present and future. Journal Indian Medical Association; 98:123-5.
299 Prabhakar R. (1996) Tuberculosis--the continuing scourge of India. Indian Journal of Medical Research; 103: 19-25

300 Udwadia ZF (2001) India's Multidrug-Resistant Tuberculosis Crisis Annals of the New York Academy of Sciences 953:98-105 New York Academy of Sciences
301 Udwadia ZF (2001) India's Multidrug-Resistant Tuberculosis Crisis Annals of the New York Academy of Sciences 953:98-105 New York Academy of Sciences
302 Bhatia MS, Bhasin SK, Dubey KK. (2000) Psychosocial dysfunction in tuberculosis patients. Indian J Med Sci. May;54(5):171-3.
303 Kartikeyan S, Bhalerao, VR (1986) Study of compliance of the patients in leprosy control programme in an urban slum. Journal of postgraduate medicine, 32, (3) 127-130
304 Weiss MG, Doongaji DR, Siddhartha S, Wypij D, Pathare S, Bhatawdekar M, Bhave A, Sheth A, Fernandes R.(1992) The Explanatory Model Interview Catalogue (EMIC). Contribution to cross-cultural research methods from a study of leprosy and mental health. Br J Psychiatry. Jun;160:819-30.
305 Ellard GA, Kiran KU, Stanley JNA (1988) Long-term prothionamide compliance: a study carried out in India using a combined formulation containing prothionamide, dapsone and isoniazid. Leprosy Review; 59: 163-75.
306 Langhorne P, Duffus P, Berkeley JS, Jesudasan K (1986) Factors influencing clinic attendance during the multidrug therapy of leprosy. Leprosy Review; 57: 17-30
307 Williams HW. (1977) :Leprosy - a social disease. CMA Journal; 116: 834-5.
308 Williams HW. (1977) :Leprosy - a social disease. CMA Journal; 116: 834-5.
309 Kartikeyan S, Bhalerao, VR (1986) Study of compliance of the patients in leprosy control programme in an urban slum. Journal of postgraduate medicine, 32, (3) 127-130
310 Weiss MG, Doongaji DR, Siddhartha S, Wypij D, Pathare S, Bhatawdekar M, Bhave A, Sheth A, Fernandes R.(1992) The Explanatory Model Interview Catalogue (EMIC). Contribution to cross-cultural research methods from a study of leprosy and mental health. Br J Psychiatry. Jun;160:819-30.
311 Ellard GA, Kiran KU, Stanley JNA (1988) Long-term prothionamide compliance: a study carried out in India using a combined formulation containing prothionamide, dapsone and isoniazid. Leprosy Review; 59: 163-75.
312 Langhorne P, Duffus P, Berkeley JS, Jesudasan K (1986) Factors influencing clinic attendance during the multidrug therapy of leprosy. Leprosy Review; 57: 17-30
313 Kaushik Panda A, Sharma Mahendra V, Bajaj S, et al. "Factors affecting health seeking behavior of People Living with HIV/AIDS (PLHA) in New Delhi, India: Results of a qualitative study." Abstract no. ThPeE7924. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
314 Rohatgi D, Lal A. (1998) Patient compliance to drug therapy. J of the Assoc of Physicians in India; 462-7.
315 India GFATM Country Coordinating Mechanism. Proposal to the GFATM: Expansion of Effective Public and Private Sector Interventions in HIV, TB, and Malaria Prevention and Treatment in India. New Delhi, September 24, 2002 <http://www.globalfundatm.org/fundingproposals/indiauk.pdf>
316 Executive Board of the United Nations Development Programme and of the United Nations Population Fund. UNITED NATIONS POPULATION FUND PROPOSED PROJECTS AND PROGRAMMES: Recommendation by the Executive Director Assistance to the Government of India. Document no. DP/FPA/CP/193. New York: December 30, 1996 <http://www.unfpa.org/regions/apd/countries/india/3ind9701.pdf>
317 Margaret E. Greene, Zohra Rasekh, Kali-Ahset Amen. In This Generation: Sexual & Reproductive Health Policies for a Youthful World. Washington, DC: Population Action International, 2002 <http://www.populationaction.org/resources/publications/InThisGeneration/InThisGeneration.pdf>
318 World Bank. The World Bank Group and Population and Reproductive and Child Health in India <http://lnweb18.worldbank.org/sar/sa.nsf/a22044d0c4877a3e852567de0052e0fa/0a1a904791c49c728525687b0062dca8?OpenDocument>
319 UNFPA. State of the World Population 2002. New York <http://www.unfpa.org>
320 International Institute for Population Sciences (IIPS) and ORC Macro. 2000. *National Family Health Survey (NFHS-2), 1998–99: India*. Mumbai: IIPS <http://www.measuredhs.com/pubs/pdftoc.cfm?ID=FRIND2&PgName=srch_results.cfm&Title=&Language=&Country=India&Year=&Type=&CFID=2412&CFTOKEN=81450050>
321 International Institute for Population Sciences (IIPS) and ORC Macro. 2000. *National Family Health Survey (NFHS-2), 1998–99: India*. Mumbai: IIPS <http://www.measuredhs.com/pubs/pdftoc.cfm?ID=FRIND2&PgName=srch_results.cfm&Title=&Language=&Country=India&Year=&Type=&CFID=2412&CFTOKEN=81450050>
322 International Institute for Population Sciences (IIPS) and ORC Macro. 2000. *National Family Health Survey (NFHS-2), 1998–99: India*. Mumbai: IIPS <http://www.measuredhs.com/pubs/pdftoc.cfm?ID=FRIND2&PgName=srch_results.cfm&Title=&Language=&Cou

ntry=India&Year=&Type=&CFID=2412&CFTOKEN=81450050>
[323] International Institute for Population Sciences (IIPS) and ORC Macro. 2000. *National Family Health Survey (NFHS-2), 1998–99: India*. Mumbai: IIPS <http://www.measuredhs.com/pubs/pdftoc.cfm?ID=FRIND2&PgName=srch_results.cfm&Title=&Language=&Country=India&Year=&Type=&CFID=2412&CFTOKEN=81450050>
324 Rupsa Mallik. India: Recent Developments Affecting Women's Reproductive Rights. Takoma Park, Md.: Center for Health and Gender Equity, December 2002 <www.genderhealth.org>
325 Rupsa Mallik. India: Recent Developments Affecting Women's Reproductive Rights. Takoma Park, Md.: Center for Health and Gender Equity, December 2002 <www.genderhealth.org>
326 Lindan CP, Jerajani HR, Mathur MS, et al. "Men attending public STD clinics in Mumbai have high rates of HIV, exposure to sex workers, male-male sex, and herpes simplex 2 infection." Abstract no. ThPeC7417. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
327 Marx MA, Murugavel KG, Sivaram S, et al. "The association of genital ulcerative disease with HIV and HCV in southern India." Abstract no. ThPeC7494. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
328 Reynolds SJ, Risbud AR, Shepherd ME, et al. "Recent herpes simplex virus type 2 infection and the risk of human immunodeficiency virus type 1 acquisition in India." *J Infect Dis*. 2003 May 15;187:1513-21.
329 Ghate MV, Risbud AR, Divekar AD, et al. "Declining trends in the sexually transmitted diseases in patients attending sexually transmitted diseases clinics in Pune, India." Abstract no. ThPeC7577. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
330 Solomon S, Ganesh AK. "HIV in India." Topics in HIV Medicine 2002 Jul/Aug;10(3):19-24 <http://www.iasusa.org/pub/topics/2002/issue3/solomon-ganesh_hiv_india.pdf>
331 UNAIDS. India: HIV and AIDS-related Discrimination, Stigmatization and Denial. Geneva, August 2001 <http://www.unaids.org/publications/documents/human/law/HR_India.pdf>
332 Kaushik Panda A, Sharma Mahendra V, Bajaj S, et al. "Factors affecting health seeking behavior of People Living with HIV/AIDS (PLHA) in New Delhi, India: Results of a qualitative study." Abstract no. ThPeE7924. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
333 UNAIDS. India: HIV and AIDS-related Discrimination, Stigmatization and Denial. Geneva, August 2001 <http://www.unaids.org/publications/documents/human/law/HR_India.pdf>
334 Kaushik Panda A, Sharma Mahendra V, Bajaj S, et al. "Factors affecting health seeking behavior of People Living with HIV/AIDS (PLHA) in New Delhi, India: Results of a qualitative study." Abstract no. ThPeE7924. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
335 UNAIDS. India: HIV and AIDS-related Discrimination, Stigmatization and Denial. Geneva, August 2001 <http://www.unaids.org/publications/documents/human/law/HR_India.pdf>
336 International HIV/AIDS Alliance. Improving Access to HIV/AIDS-related Treatment: A Report Sharing Experiences and Lessons Learned on Improving Access to HIV/AIDS-related Treatment. London: June 2002 <http://www.aidsalliance.org/_docs/_languages/_eng/_content/_3_publications/download/Reports/Access_To_Treatment_Report.pdf>
337 UNAIDS. India: HIV and AIDS-related Discrimination, Stigmatization and Denial. Geneva, August 2001 <http://www.unaids.org/publications/documents/human/law/HR_India.pdf>
338 Ghosh M, Pal M. "Socio-economic condition acting as determinant for HIV infection." Abstract no. ThPeE7802. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
339 UNAIDS. India: HIV and AIDS-related Discrimination, Stigmatization and Denial. Geneva, August 2001 <http://www.unaids.org/publications/documents/human/law/HR_India.pdf>
340 Allada P. "Psycosocial support, a vital need of women living with HIV." Abstract no. MoPeF4109. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
341 M. Bruyn. Reproductive Choice and Women Living with HIV/AIDS. Chapel Hill, NC: Ipas, December 2002 <http://www.ipas.org/english/publications/repro_choice_hiv_aids.pdf>
342 M. Bruyn. Reproductive Choice and Women Living with HIV/AIDS. Chapel Hill, NC: Ipas, December 2002 <http://www.ipas.org/english/publications/repro_choice_hiv_aids.pdf>
343 Radhkrishnan R, Jacob M, Parameshwari S, et al. Breast feeding a marker for discrimination in HIV positive mothers." Abstract no. ThPeE7830. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[344] International Institute for Population Sciences (IIPS) and ORC Macro. 2000. *National Family Health Survey (NFHS-2), 1998–99: India*. Mumbai: IIPS <http://www.measuredhs.com/pubs/pdftoc.cfm?ID=FRIND2&PgName=srch_results.cfm&Title=&Language=&Country=India&Year=&Type=&CFID=2412&CFTOKEN=81450050>

345 M. Bruyn. Reproductive Choice and Women Living with HIV/AIDS. Chapel Hill, NC: Ipas, December 2002 <http://www.ipas.org/english/publications/repro_choice_hiv_aids.pdf>
346 Kaushik Panda A, Sharma Mahendra V, Bajaj S, et al. "Factors affecting health seeking behavior of People Living with HIV/AIDS (PLHA) in New Delhi, India: Results of a qualitative study." Abstract no. ThPeE7924. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
347 Asthana, S. "AIDS-related policies, legislation and programme implementation in India." Health Policy Plan 1996;11(2):184-97.
348 Solomon S. "Stopping HIV Infection Before It Begins in Women." Abstract no. 114. 10th Conference on Retroviruses and Opportunistic Infections, February 10-14, 2003, Boston.
349 Solomon S. "Stopping HIV Infection Before It Begins in Women." Abstract no. 114. 10th Conference on Retroviruses and Opportunistic Infections, February 10-14, 2003, Boston.
350 G. Bhan. India Gender Profile. Report commissioned for Sida. Report no. 62. Brighton: Institute of Development Studies, University of Sussex, August 2001 <http://www.ids.ac.uk/bridge/reports/re62.pdf >
[351] International Institute for Population Sciences (IIPS) and ORC Macro. 2000. *National Family Health Survey (NFHS-2), 1998–99: India*. Mumbai: IIPS <http://www.measuredhs.com/pubs/pdftoc.cfm?ID=FRIND2&PgName=srch_results.cfm&Title=&Language=&Country=India&Year=&Type=&CFID=2412&CFTOKEN=81450050>
[352] Census of India. Census of India 1991: Sex Ratio and Percentage of Urban Population. New Delhi: 1991 <http://www.censusindia.net/cendat/datatable4.html>

353 Census of India. Census of India 2001: Provisional Population Totals. New Delhi: April 5, 2001 <http://www.censusindia.net/results/resultsmain.html>
354 World Bank. India: Country Assistance Strategy. 2001. <http://lnweb18.worldbank.org/sar/sa.nsf/6062ad876fb8c066852567d7005d648a/325408102115c21585256b20002d6697?OpenDocument >
355 G. Bhan. India Gender Profile. Report commissioned for Sida. Report no. 62. Brighton: Institute of Development Studies, University of Sussex, August 2001 <http://www.ids.ac.uk/bridge/reports/re62.pdf >
356 Monica Das Gupta, Jiang Zhenghua, Li Bobua, et al. Why is Son Preference so Persistent in East and South Asia? A Cross-Country Study of China, India, and the Republic of Korea. Policy Research Working Paper no. 2942. Washington, DC: World Bank, December 2002 <http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2003/02/07/000094946_03012804060286/Rendered/PDF/multi0page.pdf>
357 Executive Board of the United Nations Development Programme and of the United Nations Population Fund. UNITED NATIONS POPULATION FUND PROPOSED PROJECTS AND PROGRAMMES: Recommendation by the Executive Director Assistance to the Government of India. Document no. DP/FPA/CP/193. New York: December 30, 1996 <http://www.unfpa.org/regions/apd/countries/india/3ind9701.pdf>
[358] International Institute for Population Sciences (IIPS) and ORC Macro. 2000. *National Family Health Survey (NFHS-2), 1998–99: India*. Mumbai: IIPS <http://www.measuredhs.com/pubs/pdftoc.cfm?ID=FRIND2&PgName=srch_results.cfm&Title=&Language=&Country=India&Year=&Type=&CFID=2412&CFTOKEN=81450050>
359 Monica Das Gupta, Jiang Zhenghua, Li Bobua, et al. Why is Son Preference so Persistent in East and South Asia? A Cross-Country Study of China, India, and the Republic of Korea. Policy Research Working Paper no. 2942. Washington, DC: World Bank, December 2002 <http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2003/02/07/000094946_03012804060286/Rendered/PDF/multi0page.pdf>
[360] International Institute for Population Sciences (IIPS) and ORC Macro. 2000. *National Family Health Survey (NFHS-2), 1998–99: India*. Mumbai: IIPS <http://www.measuredhs.com/pubs/pdftoc.cfm?ID=FRIND2&PgName=srch_results.cfm&Title=&Language=&Country=India&Year=&Type=&CFID=2412&CFTOKEN=81450050>
361 World Bank. Girls Education & Economic & Social Development Factsheet Washington, DC. accessed April 2002 < http://www.girlseducation.org/>
[362] International Institute for Population Sciences (IIPS) and ORC Macro. 2000. *National Family Health Survey (NFHS-2), 1998–99: India*. Mumbai: IIPS <http://www.measuredhs.com/pubs/pdftoc.cfm?ID=FRIND2&PgName=srch_results.cfm&Title=&Language=&Country=India&Year=&Type=&CFID=2412&CFTOKEN=81450050>

[363] International Institute for Population Sciences (IIPS) and ORC Macro. 2000. *National Family Health Survey (NFHS-2), 1998–99: India*. Mumbai: IIPS <http://www.measuredhs.com/pubs/pdftoc.cfm?ID=FRIND2&PgName=srch_results.cfm&Title=&Language=&Country=India&Year=&Type=&CFID=2412&CFTOKEN=81450050>

[364] International Institute for Population Sciences (IIPS) and ORC Macro. 2000. *National Family Health Survey (NFHS-2), 1998–99: India*. Mumbai: IIPS <http://www.measuredhs.com/pubs/pdftoc.cfm?ID=FRIND2&PgName=srch_results.cfm&Title=&Language=&Country=India&Year=&Type=&CFID=2412&CFTOKEN=81450050>

365 Robin Mearns. Access to Land in Rural India. Policy Research Working Paper no. 2123. Washington, DC: World Bank, May 1999 <http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/1999/09/14/000094946_99060905321228/Rendered/PDF/multi_page.pdf>

366 Robin Mearns. Access to Land in Rural India. Policy Research Working Paper no. 2123. Washington, DC: World Bank, May 1999 <http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/1999/09/14/000094946_99060905321228/Rendered/PDF/multi_page.pdf>

367 Robin Mearns. Access to Land in Rural India. Policy Research Working Paper no. 2123. Washington, DC: World Bank, May 1999 <http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/1999/09/14/000094946_99060905321228/Rendered/PDF/multi_page.pdf>

368 Robin Mearns. Access to Land in Rural India. Policy Research Working Paper no. 2123. Washington, DC: World Bank, May 1999 <http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/1999/09/14/000094946_99060905321228/Rendered/PDF/multi_page.pdf>

[369] International Institute for Population Sciences (IIPS) and ORC Macro. 2000. *National Family Health Survey (NFHS-2), 1998–99: India*. Mumbai: IIPS <http://www.measuredhs.com/pubs/pdftoc.cfm?ID=FRIND2&PgName=srch_results.cfm&Title=&Language=&Country=India&Year=&Type=&CFID=2412&CFTOKEN=81450050>

370 International Center for Research on Women and Centre for Development and Population Activities. Domestic Violence in India: A Summary Report of Three Studies. Washington, DC: September 1999.

371 Go VF, Sethulakshmi CJ, Bentley ME, et al. "Marital violence in India: women's heightened vulnerability to HIV/AIDS." Abstract no. WeOrE1284. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.

372 Sud A, Dutta U, Wanch A, et al. "Women with HIV in India." Abstract no. MoPeC3357. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.

373 G. Bhan. India Gender Profile. Report commissioned for Sida. Report no. 62. Brighton: Institute of Development Studies, University of Sussex, August 2001 <http://www.ids.ac.uk/bridge/reports/re62.pdf >

374 Amin AN, Bentley M. "The role of unequal relationships of power in shaping women's experiences of STI symptoms and risk for HIV: Findings from a qualitative study in rural India ." Abstract no. MoOrE1114. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.

375 International HIV/AIDS Alliance. Improving Access to HIV/AIDS-related Treatment: A Report Sharing Experiences and Lessons Learned on Improving Access to HIV/AIDS-related Treatment. London: June 2002 <http://www.aidsalliance.org/_docs/_languages/_eng/_content/_3_publications/download/Reports/Access_To_Treatment_Report.pdf>

376 Alfred DSS, Vijaya S, Alfred RSS, et al. "Women beyond the accessibility of treatment: the social, cultural and family barriers in accessing services in the rural parts of AP." Abstract no. WePeF6651. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.

377 Dubey N. "Indian laws exacerbate the vulnerability of women to HIV." Abstract no. MoOrE1023. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.

[378] International Institute for Population Sciences (IIPS) and ORC Macro. 2000. *National Family Health Survey (NFHS-2), 1998–99: India*. Mumbai: IIPS <http://www.measuredhs.com/pubs/pdftoc.cfm?ID=FRIND2&PgName=srch_results.cfm&Title=&Language=&Country=India&Year=&Type=&CFID=2412&CFTOKEN=81450050>

379 Martha Alter Chen. Perpetual Mourning: Widowhood in Rural India. New York: Oxford University Press, 2000.

380 Martha Alter Chen. Perpetual Mourning: Widowhood in Rural India. New York: Oxford University Press, 2000.
381 G. Bhan. India Gender Profile. Report commissioned for Sida. Report no. 62. Brighton: Institute of Development Studies, University of Sussex, August 2001 <http://www.ids.ac.uk/bridge/reports/re62.pdf >
382 International Institute for Population Sciences (IIPS) and ORC Macro. 2000. *National Family Health Survey (NFHS-2), 1998–99: India*. Mumbai: IIPS <http://www.measuredhs.com/pubs/pdftoc.cfm?ID=FRIND2&PgName=srch_results.cfm&Title=&Language=&Country=India&Year=&Type=&CFID=2412&CFTOKEN=81450050>
383 Puran Singh. "Communities Rally around HIV/AIDS Widows." Inter Press News Service Agency, December 31, 2002.
384 Amin AN, Jacobson JL, Albrecht SJ. A framework for integrating gender-sensitive STI and HIV prevention strategies in India's national AIDS control program." Abstract no. TuPeF5233. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
385 NACO. National Baseline General Population Behavioural Surveillance Survey: 2001. New Delhi. <http://www.naco.nic.in/nacp/publctn.htm>
386 NACO. *National Baseline High Risk and Bridge Population Behavioural Surveillance Survey: 2001: Part 1.* New Delhi <http://www.naco.nic.in/nacp/publctn.htm>

387 NACO. *National Baseline High Risk and Bridge Population Behavioural Surveillance Survey: 2002: Part 2.* New Delhi <http://www.naco.nic.in/nacp/publctn.htm>
388 NACO. *National Baseline High Risk and Bridge Population Behavioural Surveillance Survey: 2002: Part 2.* New Delhi <http://www.naco.nic.in/nacp/publctn.htm>
389 NACO. National Baseline General Population Behavioural Surveillance Survey: 2001. New Delhi. <http://www.naco.nic.in/nacp/publctn.htm>
390 Sankaranarayanan S, Pandit DD, Gogate AS. "Community based survey on attitudinal and behavioural pattern of youth in slums with reference to HIV and issues related to sexuality." Abstract no. MoPeC3465. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
391 Gupta A, Purohit B, Mora J. "Increase awareness level of HIV /AIDS in urban slum area by traditional media." Abstract no. MoPeE3708. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
392 NACO. National Baseline General Population Behavioural Surveillance Survey: 2001. New Delhi. <http://www.naco.nic.in/nacp/publctn.htm>
393 International Institute for Population Sciences (IIPS) and ORC Macro. 2000. *National Family Health Survey (NFHS-2), 1998–99: India*. Mumbai: IIPS <http://www.measuredhs.com/pubs/pdftoc.cfm?ID=FRIND2&PgName=srch_results.cfm&Title=&Language=&Country=India&Year=&Type=&CFID=2412&CFTOKEN=81450050>
394 NACO. National Baseline High Risk and Bridge Population Behavioural Surveillance Survey: 2001: Part 1. New Delhi <http://www.naco.nic.in/nacp/publctn.htm>
395 NACO. National Baseline High Risk and Bridge Population Behavioural Surveillance Survey: 2002: Part 2. New Delhi < http://www.naco.nic.in/nacp/publctn.htm >
396 NACO. National Baseline General Population Behavioural Surveillance Survey: 2001. New Delhi. <http://www.naco.nic.in/nacp/publctn.htm>
397 NACO. National Baseline High Risk and Bridge Population Behavioural Surveillance Survey: 2002: Part 2. New Delhi < http://www.naco.nic.in/nacp/publctn.htm >
398 NACO. National Baseline High Risk and Bridge Population Behavioural Surveillance Survey: 2002: Part 2. New Delhi < http://www.naco.nic.in/nacp/publctn.htm >
399 NACO. National Baseline High Risk and Bridge Population Behavioural Surveillance Survey: 2001: Part 1. New Delhi <http://www.naco.nic.in/nacp/publctn.htm>
400 NACO. National Baseline High Risk and Bridge Population Behavioural Surveillance Survey: 2002: Part 2. New Delhi < http://www.naco.nic.in/nacp/publctn.htm >
401 NACO. National Baseline High Risk and Bridge Population Behavioural Surveillance Survey: 2002: Part 2. New Delhi < http://www.naco.nic.in/nacp/publctn.htm >
402 NACO. National Baseline High Risk and Bridge Population Behavioural Surveillance Survey: 2001: Part 1. New Delhi <http://www.naco.nic.in/nacp/publctn.htm>
403 NACO. National Baseline General Population Behavioural Surveillance Survey: 2001. New Delhi. <http://www.naco.nic.in/nacp/publctn.htm>
404 NACO. National Baseline General Population Behavioural Surveillance Survey: 2001. New Delhi.

<http://www.naco.nic.in/nacp/publctn.htm>
405 NACO. National Baseline General Population Behavioural Surveillance Survey: 2001. New Delhi. <http://www.naco.nic.in/nacp/publctn.htm>
406 NACO. National Baseline High Risk and Bridge Population Behavioural Surveillance Survey: 2002: Part 2. New Delhi < http://www.naco.nic.in/nacp/publctn.htm >
407 NACO. National Baseline High Risk and Bridge Population Behavioural Surveillance Survey: 2002: Part 2. New Delhi < http://www.naco.nic.in/nacp/publctn.htm >
408 Sharma AK, Aggarwal OP, Dubey KK. Sexual Behavior of Drug-Users: Is It Different? Preventive Medicine. 2002/5 2002;34(5):512-515.
409 Mudaliar S. "A study of HIV seropositive and seronegative injecting drug users at Chennai, South India." Abstract no. MoPeC3414. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
410 NACO. National Baseline High Risk and Bridge Population Behavioural Surveillance Survey: 2002: Part 2. New Delhi <http://www.naco.nic.in/vsnaco/nacp/bss4.pdf>
411 NACO. National Baseline High Risk and Bridge Population Behavioural Surveillance Survey: 2001: Part 1. New Delhi <http://www.naco.nic.in/nacp/publctn.htm>
[412] Population Reference Bureau. World Population Data Sheet 2003. Washington, DC <http://www.prb.org/>
413 NACO. National Baseline General Population Behavioural Surveillance Survey: 2001. New Delhi. <http://www.naco.nic.in/nacp/publctn.htm>
414 Kole SK, Mehra S, Negi RS. "Adolescent health & development policy initiatives towards reducing HIV infection." Abstract no. TuOrG1218. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
415 Ramchandran S, Mehra S, Coutinho L. "Societal attitudes to knowledge as a prelude to safe sexual behaviour: A study of unmarried adolescents among urban poor in Delhi, India." Abstract no. WePeE6513. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
416 Joshi PKJ, Purohit A, Haag A, et al. "Spreading the awareness of HIV/AIDS to teenage girls through an Innovative approach." Abstract no. ThPeD7703. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
417 Ramakrishna J, Kilaru A, Divakar S, et al. "A need to address the gender gap for primary prevention - boy-girl differences in HIV/AIDS knowledge, attitudes to sex and information sources among rural youth in south India." Abstract no. MoPeD3630. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
418 Varma S. "Training adolescent students belonging to a conservative background as peer educators on HIV/AIDS and reproduvtive health." Abstract no. MoPeD3633. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
419 Margaret E. Greene, Zohra Rasekh, Kali-Ahset Amen. In This Generation: Sexual & Reproductive Health Policies for a Youthful World. Washington, DC: Population Action International, 2002 <http://www.populationaction.org/resources/publications/InThisGeneration/InThisGeneration.pdf>
420 Margaret E. Greene, Zohra Rasekh, Kali-Ahset Amen. In This Generation: Sexual & Reproductive Health Policies for a Youthful World. Washington, DC: Population Action International, 2002 <http://www.populationaction.org/resources/publications/InThisGeneration/InThisGeneration.pdf>
421 Gupta A. "Law and vulnerable populations of sex workers and sexual minorities." Abstract no. WePeG6922. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
422 Human Rights Watch. Epidemic of Abuse: Police Harassment of HIV/AIDS Outreach Workers in India. New York: July 2002 <http://www.hrw.org/reports/2002/india2/>
423 UNAIDS. India: HIV and AIDS-related Discrimination, Stigmatization and Denial. Geneva, August 2001 <http://www.unaids.org/publications/documents/human/law/HR_India.pdf>
424 Bhattacharya G. "Heterosexual Identity and Male-to-Male Sexual Activities: Implications for HIV Transmission and Prevention in India." Abstract no. WePeE6483. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
425 Khan I, Jafar A. "Dance and Antakshari competitions as a strategy for community building and empowering low income feminised MSM." Abstract no. TuPpF2073. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
426 Setia M, Kumta S, Jerajani HR, et al. "Sexual risk behavior and HIV among men having sex with men (MSM) and transgenders (TG) in Mumbai, India." Abstract no. MoPeC3460. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
427 Setia M, Kumta S, Jerajani HR, et al. "Sexual risk behavior and HIV among men having sex with men (MSM) and transgenders (TG) in Mumbai, India." Abstract no. MoPeC3460. XIV International Conference on AIDS,

Barcelona, July 7-12, 2002.
428 Trikmani RK, Purohit A, Haag A, et al. "Men having sex with men (MSM): An iceberg phenomenon in Mumbai." Abstract no. WePeE6535. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
429 Trikmani RK, Purohit A, Haag A, et al. "Men having sex with men (MSM): An iceberg phenomenon in Mumbai." Abstract no. WePeE6535. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[430] NACO. *National Baseline High Risk and Bridge Population Behavioural Surveillance Survey: 2002: Part 2.* New Delhi <http://www.naco.nic.in/nacp/publctn.htm>
431 Kumta S, Setia M, Jerajani HR, et al. "Men who have sex with men (MSM) and male-to-female transgender (TG) in Mumbai: a critical emerging risk group for HIV and sexually transmitted infections (STI) in India." Abstract no. TuOrC1149. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
432 UNAIDS. India: HIV and AIDS-related Discrimination, Stigmatization and Denial. Geneva, August 2001 <http://www.unaids.org/publications/documents/human/law/HR_India.pdf>
433 Chakrapani V, Ebinezer T, Fernandes A, et al. "Access to and use of health care services for Ali/Hijra/Aravani (male-to-female transgender/transsexual) community in Chennai, South India." Abstract no. ThPeE7849. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
434 Mathur M, Kumta S, Setia M, et al. "An experience of MSM surveillance in a tertiary care center in Mumbai." Abstract no. TuPeG568. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
435 Setia M, Kumta S, Jerajani HR, et al. "Sexual risk behavior and HIV among men having sex with men (MSM) and transgenders (TG) in Mumbai, India." Abstract no. MoPeC3460. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
436 Mathur M, Kumta S, Setia M, et al. "An experience of MSM surveillance in a tertiary care center in Mumbai." Abstract no. TuPeG568. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
437 Setia M, Kumta S, Jerajani HR, et al. "Sexual risk behavior and HIV among men having sex with men (MSM) and transgenders (TG) in Mumbai, India." Abstract no. MoPeC3460. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
438 Mathur M, Kumta S, Setia M, et al. "An experience of MSM surveillance in a tertiary care center in Mumbai." Abstract no. TuPeG568. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
439 Setia M, Kumta S, Jerajani HR, et al. "Sexual risk behavior and HIV among men having sex with men (MSM) and transgenders (TG) in Mumbai, India." Abstract no. MoPeC3460. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
440 Mathur M, Kumta S, Setia M, et al. "An experience of MSM surveillance in a tertiary care center in Mumbai." Abstract no. TuPeG568. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
441 Setia M, Kumta S, Jerajani HR, et al. "Sexual risk behavior and HIV among men having sex with men (MSM) and transgenders (TG) in Mumbai, India." Abstract no. MoPeC3460. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
442 Mathur M, Kumta S, Setia M, et al. "An experience of MSM surveillance in a tertiary care center in Mumbai." Abstract no. TuPeG568. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
443 Setia M, Kumta S, Jerajani HR, et al. "Sexual risk behavior and HIV among men having sex with men (MSM) and transgenders (TG) in Mumbai, India." Abstract no. MoPeC3460. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
444 Mathur M, Kumta S, Setia M, et al. "An experience of MSM surveillance in a tertiary care center in Mumbai." Abstract no. TuPeG568. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
445 Setia M, Kumta S, Jerajani HR, et al. "Sexual risk behavior and HIV among men having sex with men (MSM) and transgenders (TG) in Mumbai, India." Abstract no. MoPeC3460. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
446 Khan I, Jafar A. "Dance and Antakshari competitions as a strategy for community building and empowering low income feminised MSM." Abstract no. TuPpF2073. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
447 Chakrapani V, Ebinezer T, Fernandes A, et al. "Access to and use of health care services for Ali/Hijra/Aravani (male-to-female transgender/transsexual) community in Chennai, South India." Abstract no. ThPeE7849. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
448 Khan I, Jafar A. "Dance and Antakshari competitions as a strategy for community building and empowering low income feminised MSM." Abstract no. TuPpF2073. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
449 Hausner DS, Ramasundaram S, Murthy N, et al. "Condom use is rare among male college students who have

ever had sex with men in southern India." Abstract no. WePeE6549. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
450 Pokakillath AK, "Masculinity, sexuality and violence: making of new vulnerables." Abstract no. ThPeE7780. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
451 Banerjee PK. "Serenading to the tunes of violence - the tip of the iceberg of the sexual violence faced by the Kothis during Lagan." Abstract no. ThOrG1420. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
452 Tandon T. "Interventions to counter trafficking of children and their impact on vulnerability of sex workers." Abstract no. ThOrG1417. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.

453 G. Bhan. India Gender Profile. Report commissioned for Sida. Report no. 62. Brighton: Institute of Development Studies, University of Sussex, August 2001 <http://www.ids.ac.uk/bridge/reports/re62.pdf >
454 Sinha IS."The correlation between violence in prostitution and the right to Say 'NO'." Abstract no. WePeG6948.
455 Human Rights Watch. Epidemic of Abuse: Police Harassment of HIV/AIDS Outreach Workers in India. New York: July 2002 <http://www.hrw.org/reports/2002/india2/>
456 Gomare M, Bamne A, Thanekar J. "Adopting strategic approach for reaching out to inaccessible population viz. Sex workers in the brothel based sex industry with comprehensive package of services in Mumbai, India." Abstract no. We PeF6707. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
457 Shankaran SS. "Intervention for women and children in the red-light area." Abstract no. WePeG6910. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
458 Gomare M, Bamne A, Thanekar J. "Adopting strategic approach for reaching out to inaccessible population viz. Sex workers in the brothel based sex industry with comprehensive package of services in Mumbai, India." Abstract no. We PeF6707. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
459 Kosambiya JK. "Evaluation of STD/HIV intervention among sex workers in the Red Light Area of Surat (India): Experience of eight years (1992 to 2000)." Abstract no. WePeD6426. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
460 G. Bhan. India Gender Profile. Report commissioned for Sida. Report no. 62. Brighton: Institute of Development Studies, University of Sussex, August 2001 <http://www.ids.ac.uk/bridge/reports/re62.pdf >
461 Dutta MK, Mandal D, Jana S, et al. "Strategizing peer pressure in enhancing safer sex practices in brothel setting." Abstract no. TuPeF5332. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
462 Population Council/Horizons Project. "The Sonagachi Project: A Global Model for Community Development." Horizons Report. New York: May 2002.
463 Population Council/Horizons Project. "The Sonagachi Project: A Global Model for Community Development." Horizons Report. New York: May 2002.
464 Bandopadhyay N, Ray K, Banerjee A, et al. "Operationalizing an effective community development intervention for reducing HIV vulnerability in female sex work: Lessons learned from the Sonagachi Project in Calcutta, India." Abstract no. ThOrF1478. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
465 Bandopadhyay N, Das S, Saha A, et al. "Assessing the contribution of social inclusion and community development in reducing HIV/STI-related vulnerability among female sex workers in Calcutta, India." Abstract no. WePeE6557. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
466 Kumaramangalam L. "Promoting healthier lifestyles for sustained behavior change." Abstract no. ThPeD7674.
467 Goud RR. "Social profile and behavioural patterns of male clients and importance of involvement of sex workers in an intervention." Abstract no. TuPeF5429. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
468 Thakur JP. "KABP study of male sex workers and masseurs in Mumbai Metro-India." Abstract no. WePeG6920.
469 NACO. *National Baseline High Risk and Bridge Population Behavioural Surveillance Survey: 2002: Part 2.* New Delhi <http://www.naco.nic.in/nacp/publctn.htm>

470 NACO. *National Baseline High Risk and Bridge Population Behavioural Surveillance Survey: 2001: Part 1.* New Delhi <http://www.naco.nic.in/nacp/publctn.htm>
471 NACO. *National Baseline High Risk and Bridge Population Behavioural Surveillance Survey: 2002: Part 2.* New Delhi <http://www.naco.nic.in/nacp/publctn.htm>

472 Gary Reid, Genevieve Costigan. Revisiting The Hidden Epidemic: A Situation Assessment of Drug Use in Asia in the Context of HIV/AIDS. Fairfield, Australia: Centre for Harm Reduction, Burnet Institute, January 2002 <http://www.ahrn.net/pdf/Rapidassessment.pdf>
473 United Nations Office on Drugs and Crime. India: Country Profile. Vienna: n.d. <http://www.undcp.org/india/country_profile.html?id=801> Accessed February 2003.
474 United Nations Office on Drugs and Crime. India: Country Profile. Vienna: n.d.

<http://www.undcp.org/india/country_profile.html?id=801> Accessed February 2003.
475 United Nations Office on Drugs and Crime. India: Country Profile. Vienna: n.d.
<http://www.undcp.org/india/country_profile.html?id=801> Accessed February 2003.
476 Gary Reid, Genevieve Costigan. Revisiting The Hidden Epidemic: A Situation Assessment of Drug Use in Asia in the Context of HIV/AIDS. Fairfield, Australia: Centre for Harm Reduction, Burnet Institute, January 2002 <http://www.ahrn.net/pdf/Rapidassessment.pdf>
477 Gary Reid, Genevieve Costigan. Revisiting The Hidden Epidemic: A Situation Assessment of Drug Use in Asia in the Context of HIV/AIDS. Fairfield, Australia: Centre for Harm Reduction, Burnet Institute, January 2002 <http://www.ahrn.net/pdf/Rapidassessment.pdf>
478 Gary Reid, Genevieve Costigan. Revisiting The Hidden Epidemic: A Situation Assessment of Drug Use in Asia in the Context of HIV/AIDS. Fairfield, Australia: Centre for Harm Reduction, Burnet Institute, January 2002 <http://www.ahrn.net/pdf/Rapidassessment.pdf>
479 Gary Reid, Genevieve Costigan. Revisiting The Hidden Epidemic: A Situation Assessment of Drug Use in Asia in the Context of HIV/AIDS. Fairfield, Australia: Centre for Harm Reduction, Burnet Institute, January 2002 <http://www.ahrn.net/pdf/Rapidassessment.pdf>
480 United Nations Office on Drugs and Crime. India: Country Profile. Vienna: n.d.
<http://www.undcp.org/india/country_profile.html?id=801> Accessed February 2003.
481 United Nations Office on Drugs and Crime. India: Country Profile. Vienna: n.d.
<http://www.undcp.org/india/country_profile.html?id=801> Accessed February 2003.
482 Gary Reid, Genevieve Costigan. Revisiting The Hidden Epidemic: A Situation Assessment of Drug Use in Asia in the Context of HIV/AIDS. Fairfield, Australia: Centre for Harm Reduction, Burnet Institute, January 2002 <http://www.ahrn.net/pdf/Rapidassessment.pdf>
483 Gary Reid, Genevieve Costigan. Revisiting The Hidden Epidemic: A Situation Assessment of Drug Use in Asia in the Context of HIV/AIDS. Fairfield, Australia: Centre for Harm Reduction, Burnet Institute, January 2002 <http://www.ahrn.net/pdf/Rapidassessment.pdf>
484 Gary Reid, Genevieve Costigan. Revisiting The Hidden Epidemic: A Situation Assessment of Drug Use in Asia in the Context of HIV/AIDS. Fairfield, Australia: Centre for Harm Reduction, Burnet Institute, January 2002 <http://www.ahrn.net/pdf/Rapidassessment.pdf>
485 Gary Reid, Genevieve Costigan. Revisiting The Hidden Epidemic: A Situation Assessment of Drug Use in Asia in the Context of HIV/AIDS. Fairfield, Australia: Centre for Harm Reduction, Burnet Institute, January 2002 <http://www.ahrn.net/pdf/Rapidassessment.pdf>
486 Gary Reid, Genevieve Costigan. Revisiting The Hidden Epidemic: A Situation Assessment of Drug Use in Asia in the Context of HIV/AIDS. Fairfield, Australia: Centre for Harm Reduction, Burnet Institute, January 2002 <http://www.ahrn.net/pdf/Rapidassessment.pdf>
487 Gary Reid, Genevieve Costigan. Revisiting The Hidden Epidemic: A Situation Assessment of Drug Use in Asia in the Context of HIV/AIDS. Fairfield, Australia: Centre for Harm Reduction, Burnet Institute, January 2002 <http://www.ahrn.net/pdf/Rapidassessment.pdf>
488 NACO. *National Baseline High Risk and Bridge Population Behavioural Surveillance Survey: 2002: Part 2.* New Delhi <http://www.naco.nic.in/nacp/publctn.htm>
489 NACO. *National Baseline High Risk and Bridge Population Behavioural Surveillance Survey: 2002: Part 2.* New Delhi <http://www.naco.nic.in/nacp/publctn.htm>
490 NACO. *National Baseline High Risk and Bridge Population Behavioural Surveillance Survey: 2002: Part 2.* New Delhi <http://www.naco.nic.in/nacp/publctn.htm>
491 NACO. *National Baseline High Risk and Bridge Population Behavioural Surveillance Survey: 2002: Part 2.* New Delhi <http://www.naco.nic.in/nacp/publctn.htm>
492 Gary Reid, Genevieve Costigan. Revisiting The Hidden Epidemic: A Situation Assessment of Drug Use in Asia in the Context of HIV/AIDS. Fairfield, Australia: Centre for Harm Reduction, Burnet Institute, January 2002 <http://www.ahrn.net/pdf/Rapidassessment.pdf>
493 United Nations Office on Drugs and Crime. India: Country Profile. Vienna: n.d.
<http://www.undcp.org/india/country_profile.html?id=801> Accessed February 2003.
494 United Nations Office on Drugs and Crime. India: Country Profile. Vienna: n.d.
<http://www.undcp.org/india/country_profile.html?id=801> Accessed February 2003.
495 Lamabamsaso LBS. "High vulnerability of ARC among spouses and children of IDU's." Abstract no. WePeF6746. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
496 Kumar S."Drug misuse causes major problems for women in India." BMJ 2002 May 11;324:1118.
497 Kumar S."Drug misuse causes major problems for women in India." BMJ 2002 May 11;324:1118.
498 Gary Reid, Genevieve Costigan. Revisiting The Hidden Epidemic: A Situation Assessment of Drug Use in Asia in the Context of HIV/AIDS. Fairfield, Australia: Centre for Harm Reduction, Burnet Institute, January 2002 <http://www.ahrn.net/pdf/Rapidassessment.pdf>

499 Lisam DR. "Translating knowledge and experience into policy change and action - success stories from Manipur, India." Abstract no. TuPeG5514. .XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
500 United Nations Office on Drugs and Crime. India: Country Profile. Vienna: n.d. <http://www.undcp.org/india/country_profile.html?id=801> Accessed February 2003.
[501] U.S. National Intelligence Council. The Next Wave of HIV/AIDS: Nigeria, Ethiopia, Russia, India, and China. Report no. ICA 2002-04 D. Washington, DC: September 2002 <http://www.cia.gov/nic/pubs/other_products/ICA%20HIV-AIDS%20unclassified%20092302POSTGERBER.htm>
[502] Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat. *World Population Prospects: The 2002 Revision. Highlights.* New York: February 2003 <http://www.un.org/esa/population/publications/wpp2002/wpp2002annextables.PDF>
[503] Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat. *World Population Prospects: The 2002 Revision. Highlights.* New York: February 2003 <http://www.un.org/esa/population/publications/wpp2002/wpp2002annextables.PDF>
[504] Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat. *World Population Prospects: The 2002 Revision. Highlights.* New York: February 2003 <http://www.un.org/esa/population/publications/wpp2002/wpp2002annextables.PDF>
[505] Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat. *World Population Prospects: The 2002 Revision. Highlights.* New York: February 2003 <http://www.un.org/esa/population/publications/wpp2002/wpp2002annextables.PDF>
[506] Anand K Pandav, CS and Nath LM*: The Impact of HIV/AIDS on the National Economy of India*. Health Policy 47 (1999) pps 195-205.
[507] Cornia GA, Fabio Zagonari. The HIV/AIDS impact on the rural and urban economy. In: Cornia GA, ed. *AIDS, Public Policy and Child Well-Being*; 2002.
[508] Cornia GA, Fabio Zagonari. The HIV/AIDS impact on the rural and urban economy. In: Cornia GA, ed. *AIDS, Public Policy and Child Well-Being*; 2002.
[509] World Bank. *Confronting AIDS : public priorities in a global epidemic*. Rev. ed. Oxford ; New York: Published for the World Bank by Oxford University Press; 1999.
[510] Bharat S, P. Aggleton. Facing the challenge: household responses to HIV/AIDS in Mumbai, India. *AIDS Care.* February 1999 1999;11(1):31-44.
[511] Shankpal P, Dhanure S, Shankpal V. "A cost effective way to improve home care for resource poor HIV/AIDS patients: Struggle for a solution." Abstract no. MoPeG4168. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[512] FAO. HIV/AIDS: a threat to sustainable agriculture and rural development. *Food and Agriculture Organization of the United Nations*. Available at: http://www.fao.org/NEWS/2000/000608-e.htm. Accessed October 9, 2002.
[513] World Bank. *India: policies to reduce poverty and accelerate sustainable development: Chapter 2-improving health and education for the poor* January 31, 2000.
[514] David H. Peters, Abdo S. Yazbeck, Rashmi R. Sharma, G. N. V. Ramana, Lant H. Pritchett, Adam Wagstaff. Better Health Systems for India's Poor: Findings, Analysis, and Options. Washington, DC: World Ban, 2002 <http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2002/05/30/000094946_02051604053640/Rendered/PDF/multi0page.pdf>
[515] Duraisamy P, Daly C, Solomon S, et al. "How people living with HIV/AIDS in South India cope with the costs of treatment." Abstract no. TuPeE5117. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[516] Acharya CR, Purohit A, Joshi KC. "Affordability of treatment, care & support by HIV infected patients in Western Rajasthan - FXB initiatives and need for alternative sources of funding." Abstract no. TuPeE5119. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.

[517] Suhadev M, Thomas B, Dilip M, et al. "Impact of AIDS death on family and society." Abstract no. ThPeE7914. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[518] Singh R. "Socio-economic problems of persons living with HIV/AIDS: A study in Mumbai, India." Abstract no. ThPeE7895. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[519] Shankpal P, Dhanure S, Shankpal V. "A cost effective way to improve home care for resource poor HIV/AIDS patients: Struggle for a solution." Abstract no. MoPeG4168. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.

[520] World Bank. Number of AIDS orphans to rise. *World Bank* [Press release]. Available at: http://web.worldbank.org/WBSITE/EXTERNAL/NEWS/0,,date:07-11-2002~menuPK:34461~pagePK:34392~piPK:34427~theSitePK:4607,00.html. Accessed October 9, 2002.
[521] Monk NO. "Community based orphan care: application of African models for India's impending crisis." Abstract no. TuPeG5668. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[522] George B. "Scale up program to meet HIV prevention & care needs of street children in India." Abstract no. WePeD6296. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[523] Misra KM, Bhattacharya S, Mukherjee D, et al. "Primary prevention programme amongst street and working children - a pioneering collaborative effort between a NGO and a University." Abstract no. MoPeD3593. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[524] Sharma U, Purohit A, Rajpurohit HS, et al. "Reaching out to street children & youth regarding HIV/AIDS awareness in Jaipur city." Abstract no. MoPeF3967. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[525] Sahay N, Saha A, Nassir E, et al. "Incorporation of innovative life skills in an ongoing comprehensive HIV risk reduction intervention among street children of Nizamuddin, Delhi, India." Abstract no. ThPeD7728. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[526] Monk N. *Orphan Alert 2: Children of the HIV/AIDS pandemic--the challenge for India*: Association Francois-Xavier Bagnoud; 2001.
[527] Mohammed Nazeem M. "Children orphaned by AIDS." Abstract no. ThPeF7965. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[528] Monk N. *Orphan Alert 2: Children of the HIV/AIDS pandemic--the challenge for India*: Association Francois-Xavier Bagnoud; 2001.
[529] Mohammed Nazeem M. "Children orphaned by AIDS." Abstract no. ThPeF7965. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[530] Arumugam ACV. "Challenges faced by caa of rural area of theni dt.,tamil nadu. - pwds- alliance project experience." Abstract no. ThPeE7898. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[531] Sen Gupta S. "Training: impact on services for HIV/AIDS affected children." Abstract no. WePeD6293. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[532] George B. "Scale up program to meet HIV prevention & care needs of street children in India." Abstract no. WePeD6296. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[533] John Sunder Singh A. Asha Rao A, Kurup A. "Use of participatory community assessments for assessing the needs of children affected by AIDS: experience from a state level community based care and support programme in India." Abstract no. MoPeB3191. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[534] Mehra J. "Impact of HIV/AIDS on children in Manipur." Abstract no. ThPeG8366. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[535] FAO. HIV/AIDS: a threat to sustainable agriculture and rural development. *Food and Agriculture Organization of the United Nations*. Available at: http://www.fao.org/NEWS/2000/000608-e.htm. Accessed October 9, 2002.
[536] World Bank. HIV/AIDS and development. *World Bank* [On-line fact sheet]. Available at: http://www.worldbank.org/ungass/factsheet.htm.
[537] Baier EG. *The impact of HIV/AIDS on rural households/communities and the need for multisectoral prevention and mitigation strategies to combat the epidemic in rural areas.* Rome: Food and Agriculture Organization of the United Nations (FAO); January 1997.
[538] World Bank. HIV/AIDS and development. *World Bank* [On-line fact sheet]. Available at: http://www.worldbank.org/ungass/factsheet.htm.
[539] Aggleton P. HIV and AIDS-related stigmatization, discrimination and denial: forms, contexts and determinants. Research studies from Uganda and India. Geneva: UNAIDS; 2000.
[540] International Centre for Prison Studies, King's College, University of London. World Prison Brief: India. London: February 9, 2003 <http://www.kcl.ac.uk/depsta/rel/icps/worldbrief/continental_asia.html >
[541] Pachpinde PA. "Knowledge and commitment for action in HIV/AIDS prevention in prisons of Gujarat, India." Abstract no. MoPeE3790. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[542] India GFATM Country Coordinating Mechanism. Proposal to the GFATM: Expansion of Effective Public and Private Sector Interventions in HIV, TB, and Malaria Prevention and Treatment in India. New Delhi, September 24, 2002 <http://www.globalfundatm.org/fundingproposals/indiauk.pdf>
[543] NACO. *Combating HIV/AIDS in India*: Government of India; 2000-2001.
[544] NACO. *Combating HIV/AIDS in India*: Government of India; 2000-2001.

[545] NACO. *Combating HIV/AIDS in India*: Government of India; 2000-2001.
[546] United Nations-India. A Joint UN system response to the HIV/AIDS epidemic in India. *UN*. Available at: http://www.un.org.in/Jinit/AIDS.htm.
[547] NACO. *Combating HIV/AIDS in India*: Government of India; 2000-2001.
[548] Seshadri SR. *Constraints to scaling up health interventions: country case study: India*: Commission on Macroeconomics and Health Working Paper Series; June, 2001.
[549] The Synergy Project. *HIV/AIDS in India and USAID involvement* December 2001.
[550] The Synergy Project. *HIV/AIDS in India and USAID involvement* December 2001.
[551] World Bank. Regional updates: South Asia Region (SAR) - India. *World Bank*. April 2002. Available at: http://wbln1018.worldbank.org/sar/sa.nsf/6062ad876fb8c066852567d7005d648a/176fd35a8e92b6ee85256a9b00520bb2?OpenDocument.
[552] India GFATM Country Coordinating Mechanism. Proposal to the GFATM: Expansion of Effective Public and Private Sector Interventions in HIV, TB, and Malaria Prevention and Treatment in India. New Delhi, September 24, 2002 <http://www.globalfundatm.org/fundingproposals/indiauk.pdf>
[553] NACO. *Combating HIV/AIDS in India*: Government of India; 2000-2001.
[554] India GFATM Country Coordinating Mechanism. Proposal to the GFATM: Expansion of Effective Public and Private Sector Interventions in HIV, TB, and Malaria Prevention and Treatment in India. New Delhi, September 24, 2002 <http://www.globalfundatm.org/fundingproposals/indiauk.pdf>
[555] APAC. *Annual report*: Voluntary Health Services, Chennai; 2000.
[556] Monitoring the AIDS Pandemic (MAP). *The status and trends of HIV/AIDS/STI epidemics in Asia and the Pacific.* Melbourne: MAP; October 4, 2001.
[557] Kumar S. "HIV cases rising sharply in India." *BMJ* 2003 Aug 2;327(7409):245.
[558] World Bank. Yielding results: early response to HIV/AIDS in India. *World Bank*. Available at: http://lnweb18.worldbank.org/sar/sa.nsf/2991b676f98842f0852567d7005d2cba/5ebfdf3fe0c62d8885256b9f00568fd8?OpenDocument.
[559] World Bank. Yielding results: early response to HIV/AIDS in India. *World Bank*. Available at: http://lnweb18.worldbank.org/sar/sa.nsf/2991b676f98842f0852567d7005d2cba/5ebfdf3fe0c62d8885256b9f00568fd8?OpenDocument.
[560] Monitoring the AIDS Pandemic (MAP). *The status and trends of HIV/AIDS/STI epidemics in Asia and the Pacific.* Melbourne: MAP; October 4, 2001.
[561] Indian NGOs. HIV/AIDS: government intervention. Available at: http://www.indianngos.com/issue/hiv/govt/index.htm.
[562] NACO. *Combating HIV/AIDS in India*: Government of India; 2000-2001.
[563] John Lancaster. "AIDS Begins to Widen Its *Reach in India: Disease Spreading Beyond High-Risk Groups to General Population." Washington* Post Foreign Service, June 11, 2003.
[564] Kaiser Daily HIV/AIDS Report. "India Must Act To Prevent Tens of Millions of HIV Cases, UNAIDS Director Says; 4.58M Indians Already HIV-Positive." July 25, 2003 <http://www.kaisernetwork.org/daily_reports/rep_index.cfm?DR_ID=19017>
[565] India GFATM Country Coordinating Mechanism. Proposal to the GFATM: Expansion of Effective Public and Private Sector Interventions in HIV, TB, and Malaria Prevention and Treatment in India. New Delhi, September 24, 2002 <http://www.globalfundatm.org/fundingproposals/indiauk.pdf>

[566] Ratnathicam A. AIDS in India: incidence, prevalence, and prevention. *AIDS PATIENT CARE and STDs.* May 2001 2001;15(5):255-261.
[567] Schneider M, Moodie M. *The destabilizing impacts of HIV/AIDS*: Center for Strategic and International Studies (CSIS); May 2002.
[568] John Lancaster. "AIDS Begins to Widen Its *Reach in India: Disease Spreading Beyond High-Risk Groups to General Population." Washington* Post Foreign Service, June 11, 2003.
[569] Chatterjee P. " Spreading the word about HIV/AIDS in India: Education is increasing awareness of HIV/AIDS, but cultural taboos about discussing sex remain." Lancet 2003 May 3;361(9368):1526-27.
[570] Reid G, Genevieve Costigan. *Revisiting 'The Hidden Epidemic': a situation assessment of drug use in Asia in the context of HIV/AIDS*: The Centre for Harm Reduction; January 2002.
571 Lisam DR. "Translating knowledge and experience into policy change and action - success stories from Manipur, India." Abstract no. TuPeG5514. .XIV International Conference on AIDS, Barcelona, July 7-12, 2002.

[572] Reid G, Genevieve Costigan. *Revisiting 'The Hidden Epidemic': a situation assessment of drug use in Asia in the context of HIV/AIDS*: The Centre for Harm Reduction; January 2002.
[573] Seshadri SR. *Constraints to scaling up health interventions: country case study: India*: Commission on Macroeconomics and Health Working Paper Series; June, 2001.
[574] Stephenson J. "At International HIV/AIDS Conference, Daunting Challenges Mixed With Hope." *JAMA* 2002 Aug 14;288(6):683-85.
[575] Seshadri SR. *Constraints to scaling up health interventions: country case study: India*: Commission on Macroeconomics and Health Working Paper Series; June, 2001.
[576] Lynn Carter, Edward Anderson. India: A Preliminary DG Assessment. Washington, DC: USAID, June 21, 2001 <http://www.dec.org/pdf_docs/PNACP896.pdf>
[577] NACO. *Combating HIV/AIDS in India*: Government of India; 2000-2001.
[578] Mudur G. "India announces plan to inform HIV infected blood donors." *BMJ* 2002 Dec 14;325 (7377):1380.
[579] UNDP. Human Development Report 2003. New York <http://www.undp.org>
[580] World Bank. *India: policies to reduce poverty and accelerate sustainable development: Chapter 2-improving health and education for the poor* January 31, 2000.
[581] India GFATM Country Coordinating Mechanism. Proposal to the GFATM: Expansion of Effective Public and Private Sector Interventions in HIV, TB, and Malaria Prevention and Treatment in India. New Delhi, September 24, 2002 <http://www.globalfundatm.org/fundingproposals/indiauk.pdf>
[582] John Lancaster. "AIDS Begins to Widen Its *Reach in India: Disease Spreading Beyond High-Risk Groups to General Population." Washington* Post Foreign Service, June 11, 2003.
[583] Margaret E. Greene, Zohra Rasekh, Kali-Ahset Amen. In This Generation: Sexual & Reproductive Health Policies for a Youthful World. Washington, DC: Population Action International, 2002 <http://www.populationaction.org/resources/publications/InThisGeneration/InThisGeneration.pdf>
[584] Sequeira T. "Expansion of the AIDS prevention education programme (APEP) in secondary schools of Mumbai from 51 municipal schools to 743 schools in 8 years." Abstract no. ThPeF7936. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[585] Bhardwaj SA, Sequeira TIE, Gurnani PM, et al. "Change in the teachers training curriculum in the aids prevention education program in secondary schools of Mumbai, India." Abstract no. WePeD6302. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[586] Bhardwaj SA, Sequeira TIE, Gurnani PM, et al. "Expansion of the AIDS prevention education program in secondary schools of Mumbai, India." Abstract no. WePeD6348. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[587] J.V. Jeyasing. "Evaluation of 'School talk AIDS' programme in Tamilnadu, South India." Abstract no. ThPeB7372. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[588] NACO. NACO Programmes: Information, Education, Communication and Social Moblization. New Delhi: n.d. <http://www.naco.nic.in/nacp/program/prog4.htm> Accessed October 2002.
[589] Ministry of Defense GoI. HIV / AIDS awareness programme for NCC cadets [Press release]. Available at: http://mod.nic.in.
[590] UNDP. *Reduction of HIV vulnerability within the land transport sector: towards a public policy framework for addressing HIV/AIDS in the transport sector.* Bangkok, Thailand November 22-23, 1999.
[591] UNDP. *Reduction of HIV vulnerability within the land transport sector: towards a public policy framework for addressing HIV/AIDS in the transport sector.* Bangkok, Thailand November 22-23, 1999.
[592] GTZ. HIV/AIDS prevention in the road transportation sector in Southern Africa: EU/GTZ; August 2001.
[593] Dr Peter Piot, Executive Director, UNAIDS. Speech to the National Convention of the Indian Parliamentary Forum on HIV/AIDS, New Delhi, July 26, 2003.
[594] Anand Grover, Veena Johari. "The law, laypersons, leadership and HIV/AIDS." *Sexual Health Exchange* 2001, no. 3. Published by the Netherlands Royal Tropical Institute and the Southern Africa AIDS Information Dissemination Service <http://www.kit.nl/information_services/exchange_content/html/2001-3-the_law__laypersons.asp>
[595] Dubey N. "Indian laws exacerbate the vulnerability of women to HIV." Abstract no. MoOrE1023. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[596] Lawyers Collective HIV/AIDS Unit. "DRAFT LEGISLATION ON HIV/AIDS." Mumbai: January 6, 2003 <http://www.lawyerscollective.org/lc-hiv-aids/draftlegislation/draft_legislation.htm> Accessed April 2003.
[597] Dubey N. "Indian laws exacerbate the vulnerability of women to HIV." Abstract no. MoOrE1023. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.

[598] Tandon T. "Advocacy and capacity building initiatives with the Judiciary in India." Abstract no. MoPeG4296. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[599] Anand Grover, Veena Johari. "The law, laypersons, leadership and HIV/AIDS." Sexual Health Exchange 2001, no. 3. Published by the Netherlands Royal Tropical Institute and the Southern Africa AIDS Information Dissemination Service <http://www.kit.nl/information_services/exchange_content/html/2001-3-the_law__laypersons.asp>
[600] Tandon T. "Advocacy and capacity building initiatives with the Judiciary in India." Abstract no. MoPeG4296. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[601] NACO. National AIDS Prevention and Control Policy: 5.6: HIV Testing. New Delhi: n.d. <http://naco.nic.in/nacp/ctrlpol.htm>
[602] NACO. National AIDS Prevention and Control Policy: 5.6: HIV Testing. New Delhi: n.d. <http://naco.nic.in/nacp/ctrlpol.htm>
[603] NACO. Voluntary Testing and Counseling Center Guidelines. New Delhi: n.d. <http://naco.nic.in/nacp/guide1.htm>
[604] Malavade JAB, Shah SRS, Shah JSS, et al. "Ethical and legal issues in HIV/AIDS counseling and testing." Abstract no. ThPeE7902. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[605] Lawyers' Collective HIV/AIDS Unit. "MANDATORY PRE-MARITAL TESTING." *Positive Dialogue* Dec. 2002, no. 15 <http://www.lawyerscollective.org/lc-hiv-aids/positive_dialogue/newsletters_15.htm>
[606] Lawyers' Collective HIV/AIDS Unit <http://www.lawyerscollective.org> Accessed April 2003.
[607] Human Rights Watch. Epidemic of Abuse: Police Harassment of HIV/AIDS Outreach Workers in India. New York: July 2002 <http://www.hrw.org/reports/2002/india2/>
[608] Human Rights Watch. Epidemic of Abuse: Police Harassment of HIV/AIDS Outreach Workers in India. New York: July 2002 <http://www.hrw.org/reports/2002/india2/>
[609] Human Rights Watch. Epidemic of Abuse: Police Harassment of HIV/AIDS Outreach Workers in India. New York: July 2002 <http://www.hrw.org/reports/2002/india2/>
[610] Human Rights Watch. Epidemic of Abuse: Police Harassment of HIV/AIDS Outreach Workers in India. New York: July 2002 <http://www.hrw.org/reports/2002/india2/>
[611] Human Rights Watch. Epidemic of Abuse: Police Harassment of HIV/AIDS Outreach Workers in India. New York: July 2002 <http://www.hrw.org/reports/2002/india2/>
[612] Human Rights Watch. Epidemic of Abuse: Police Harassment of HIV/AIDS Outreach Workers in India. New York: July 2002 <http://www.hrw.org/reports/2002/india2/>
[613] Gupta A. "Right to Sexual Identity - Legal concerns of the eunuch community in India." Abstract no. TuOrE1158. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[614] Divan V. "Launching a grassroots campaign in India - The affordable medicines and treatment campaign (AMTC)." Abstract no. TuPeG5612. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[615] India GFATM Country Coordinating Mechanism. Proposal to the GFATM: Expansion of Effective Public and Private Sector Interventions in HIV, TB, and Malaria Prevention and Treatment in India. New Delhi, September 24, 2002 <http://www.globalfundatm.org/fundingproposals/indiauk.pdf>
[616] World Bank. National HIV/AIDS Control Project. *World Bank*. Available at: http://www4.worldbank.org/sprojects/Project.asp?pid=P045051.
[617] Gates Foundation. Bill Gates to visit India on HIV/AIDS mission. *Bill and Melinda Gates Foundation*. October 7, 2002. Available at: http://www.gatesfoundation.org/globalhealth/hivaidstb/hivaids/announcements/announce-021007.htm.
[618] Waldman A. Gates offers India $100 million to fight AIDS. *New York Times*. November 12, 2002, 2002.
[619] Gates Foundation. FAQ: questions and answers on the recent India-HIV/AIDS mission and the India AIDS Initiative. *Bill and Melinda Gates Foundation*. Available at: http://www.gatesfoundation.org/globalhealth/hivaidstb/hivaids/indiamission/faq-021111.htm.
[620] Gates Foundation. India AIDS Initiative. *Bill and Melinda Gates Foundation*. Available at: http://www.gatesfoundation.org/globalhealth/hivaidstb/hivaids/indiamission/iaifactsheet-021111.htm.
[621] AIDSpan. India: Data Sheet Regarding Proposals Submitted to and Grants Approved by the Global Fund. February 11, 2003 <http://www.aidspan.org/globalfund/grants/round2/data-india.htm>
[622] India GFATM Country Coordinating Mechanism. Proposal to the GFATM: Expansion of Effective Public and Private Sector Interventions in HIV, TB, and Malaria Prevention and Treatment in India. New Delhi, September 24, 2002 <http://www.globalfundatm.org/fundingproposals/indiauk.pdf>
[623] DFID. Annual plan and performance review. DFID India: November 2000.

[624] India GFATM Country Coordinating Mechanism. Proposal to the GFATM: Expansion of Effective Public and Private Sector Interventions in HIV, TB, and Malaria Prevention and Treatment in India. New Delhi, September 24, 2002 <http://www.globalfundatm.org/fundingproposals/indiauk.pdf>
[625] CIDA. India-Canada collaborative HIV/AIDS project. *Canadian International Development Agency*. Available at: http://www.acdi-cida.gc.ca/cida_ind.nsf/vLUallDocByIDEn/6B528A54E178163C85256919004EA17D?OpenDocument
[626] CIDA <http://www.acdi-cida.gc.ca/cida_ind.nsf/vall/C48DDCA371F43E3485256BEC00681526?OpenDocument> Accessed October 2002.
[627] The Synergy Project. *USAID project profiles: children affected by HIV/AIDS.* Washington, D.C.: USAID; July 2002.
[628] APAC. *Annual report*: Voluntary Health Services, Chennai; 2000.
[629] The Synergy Project. *HIV/AIDS in India and USAID involvement* December 2001.
[630] India GFATM Country Coordinating Mechanism. Proposal to the GFATM: Expansion of Effective Public and Private Sector Interventions in HIV, TB, and Malaria Prevention and Treatment in India. New Delhi, September 24, 2002 <http://www.globalfundatm.org/fundingproposals/indiauk.pdf>
[631] CDC. Global AIDS program: India. *CDC*. Available at: http://www.cdc.gov/nchstp/od/gap/countries/india.htm.
[632] HHS. U.S. and India pledge new efforts to cooperated in HIV/AIDS and maternal and child health research. *U.S. Department of Health and Human Services* [Press release]. Available at: http://www.hhs.gov/news/press/2000pres/20000613.html.
[633] Japan International Cooperation Agency. *The Second Country Study for Japan's Official Development Assistance to India.* Tokyo: JICA; 1995.
[634] Japan International Cooperation Agency. Will AIDS be tamed? *JICA*. Available at: http://www.jica.go.jp/english/news/2000/publication/network/2001/net_vol10/main05.html.
[635] Broughton B. *Guide to HIV/AIDS and development*: AusAID; October 1999.
[636] SIDA web site <http://www.sida.se/Sida/jsp/polopoly.jsp?d=371&a=9300> Accessed February 2003. http://www.sida.se/Sida/jsp/polopoly.jsp?d=371&a=9300
[637] D'Cruz-Grote D. *Prevention of sexual transmission of HIV/STD in developing countries: experiences and concepts*: GTZ; September 1996.
[638] EU HIV/AIDS Programme in Developing Countries. *With new focus into a new decade*.
[639] India GFATM Country Coordinating Mechanism. Proposal to the GFATM: Expansion of Effective Public and Private Sector Interventions in HIV, TB, and Malaria Prevention and Treatment in India. New Delhi, September 24, 2002 <http://www.globalfundatm.org/fundingproposals/indiauk.pdf>
[640] UNDP. HIV/AIDS India: UNDP and HIV/AIDS initiatives in India. Available at: http://www.undp.org.in/hivaids/hiv-ind/initiatives.htm.
[641] UNDP. *HIV and development: talking to the media.* New Delhi: UNDP; June 8, 2001.
[642] NACO. *Combating HIV/AIDS in India*: Government of India; 2000-2001.
[643] NACO. *Combating HIV/AIDS in India*: Government of India; 2000-2001.
[644] NACO. *Combating HIV/AIDS in India*: Government of India; 2000-2001.
[645] ILO <http://www.ilo.org/public/english/bureau/inf/download/wssd/pdf/hivaids.pdf> Accessed October 2002.
[646] Mora JC, Purohit A, Haag A, et al. "The public health role of non-governmental organizations (NGOs) working on HIV/AIDS issues." Abstract no. WePeG6969. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[647] Zaveri SD. "Expanding the HIVresponse in civil society: critical indicators for success." Abstract no. MoPeG4315. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[648] Tummalapalli TVR, Chandhramohan PCM, Natraj RJM. "Religious organisation and instutions." Abstract no. WePeG6992. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[649] Parmar PAR."Involvement of religious leaders (imams) for HIV/AIDS awareness and behaviour change in Jammu and Kashmir." Abstract no. MoPeE3766. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[650] David H. Peters, Abdo S. Yazbeck, Rashmi R. Sharma, G. N. V. Ramana, Lant H. Pritchett, Adam Wagstaff. Better Health Systems for India's Poor: Findings, Analysis, and Options. Washington, DC: World Ban, 2002 <http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2002/05/30/000094946_02051604053640/Rendered/PDF/multi0page.pdf>
[651] International HIV/AIDS Alliance. HIV/AIDS: a global development challenge. *International HIV/AIDS Alliance*.

Available at: http://www.aidsalliance.org/_docs/_languages/_eng/_navigation/1_index.htm.
[652] FHI. *FHI focus on India*: Family Health International; October, 2001.
[653] de Zoysa I, Christopher Elias, Joan MacNeil and Tobi Saidel. *Current issues in HIV counseling and testing in South and Southeast Asia*: Family Health International and the Population Council; January 2000.
[654] MSI. India. *Marie Stopes International*. Available at: http://www.mariestopes.org.uk/ww/india.htm.
[655] MSF. *India: MSF launches TB programme*: Medicins Sans Frontieres; 1999.
[656] CARE. Improving reproductive health status and reducing STI and HIV infection in six states of India. *CARE*. Available at: http://www.careusa.org/careswork/project.asp?project=IND151.
[657] HIV Prevention Trials Network. HPTN Studies. Bethesda, Md.: June 30, 2003 <http://www.hptn.org/research_studies.asp>
[658] NACO. National AIDS Prevention and Control Policy: 5.6: HIV Testing. New Delhi: n.d. <http://naco.nic.in/nacp/ctrlpol.htm>
[659] NACO. National AIDS Prevention and Control Policy: 5.6: HIV Testing. New Delhi: n.d. <http://naco.nic.in/nacp/ctrlpol.htm>
[660] NACO. Voluntary Testing and Counseling Center Guidelines. New Delhi: n.d. <http://naco.nic.in/nacp/guide1.htm>
[661] Hira SK, Prasada Rao JVR. "Improving access to HIV/AIDS care in India." Abstract no. TuPeG5640. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[662] Monitoring the AIDS Pandemic (MAP). *The status and trends of HIV/AIDS/STI epidemics in Asia and the Pacific.* Melbourne: MAP; October 4, 2001.
[663] Personal communication with Dr. Maninder Setia, LTM Medical College and General Hospital, Mumbai, April 25, 2003.
[664] Shastri JS. "Improving Laboratory capacity for HIV/AIDS control." Abstract no. WePeF6696. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[665] India GFATM Country Coordinating Mechanism. Proposal to the GFATM: Expansion of Effective Public and Private Sector Interventions in HIV, TB, and Malaria Prevention and Treatment in India. New Delhi, September 24, 2002 <http://www.globalfundatm.org/fundingproposals/indiauk.pdf>
[666] Kumar S. "HIV cases rising sharply in India." *BMJ* 2003 Aug 2;327(7409):245.
[667] Elizabeth A. Preble, Ellen G. Piwoz. Prevention of Mother-to-Child Transmission of HIV in Asia. Washington, DC: Academy for Education Development/LINKAGE Project, June 2002 <http://www.linkagesproject.org/publications/AsiaPMTCT.PDF>
[668] Elizabeth A. Preble, Ellen G. Piwoz. Prevention of Mother-to-Child Transmission of HIV in Asia. Washington, DC: Academy for Education Development/LINKAGE Project, June 2002 <http://www.linkagesproject.org/publications/AsiaPMTCT.PDF>
[669] NACO. Feasibility study of administering short-term AZT intervention among HIV-infected mothers to prevent mother-to-child transmission of HIV. New Delhi: n.d.
[670] Jonnalagadda SR, Suryavanshi N, Sastry J. "Factors impacting a change in infant feeding practices of HIV-infected Indian mothers." Abstract no. WePeD6330. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[671] India GFATM Country Coordinating Mechanism. Proposal to the GFATM: Expansion of Effective Public and Private Sector Interventions in HIV, TB, and Malaria Prevention and Treatment in India. New Delhi, September 24, 2002 <http://www.globalfundatm.org/fundingproposals/indiauk.pdf>
[672] India GFATM Country Coordinating Mechanism. Proposal to the GFATM: Expansion of Effective Public and Private Sector Interventions in HIV, TB, and Malaria Prevention and Treatment in India. New Delhi, September 24, 2002 <http://www.globalfundatm.org/fundingproposals/indiauk.pdf>
[673] Mead Over, Peter Heywood, Sudhakar Kurapati, Julian Gold, Indrani Gupta, Abhaya Indrayan, Subhash Hira, Elliot Marseille, Nico Nagelkerke, Arni S.R. Srinivasa Rao. *Integrating Anti-Retroviral Therapy and HIV Prevention in India: Costs and Consequences of Policy Options*. Draft 2 Washington, DC: World Bank, March 26, 2003.
[674] India GFATM Country Coordinating Mechanism. Proposal to the GFATM: Expansion of Effective Public and Private Sector Interventions in HIV, TB, and Malaria Prevention and Treatment in India. New Delhi, September 24, 2002 <http://www.globalfundatm.org/fundingproposals/indiauk.pdf>
[675] Solomon R, Solomon ARS, Vijaya S, et al. "Double impact: integrating prevention, community sensitization & mobilization for sustainable community based care and support by service delivery for people living with HIV/AIDS & affected families in rural Andhra Pradesh, India." Abstract no. WePeF6740. XIV International Conference on

AIDS, Barcelona, July 7-12, 2002.
[676] Mead Over, Peter Heywood, Sudhakar Kurapati, Julian Gold, Indrani Gupta, Abhaya Indrayan, Subhash Hira, Elliot Marseille, Nico Nagelkerke, Arni S.R. Srinivasa Rao. *Integrating Anti-Retroviral Therapy and HIV Prevention in India: Costs and Consequences of Policy Options*. Draft 2 Washington, DC: World Bank, March 26, 2003.
[677] Mead Over, Peter Heywood, Sudhakar Kurapati, Julian Gold, Indrani Gupta, Abhaya Indrayan, Subhash Hira, Elliot Marseille, Nico Nagelkerke, Arni S.R. Srinivasa Rao. *Integrating Anti-Retroviral Therapy and HIV Prevention in India: Costs and Consequences of Policy Options*. Draft 2 Washington, DC: World Bank, March 26, 2003.
[678] Mead Over, Peter Heywood, Sudhakar Kurapati, Julian Gold, Indrani Gupta, Abhaya Indrayan, Subhash Hira, Elliot Marseille, Nico Nagelkerke, Arni S.R. Srinivasa Rao. *Integrating Anti-Retroviral Therapy and HIV Prevention in India: Costs and Consequences of Policy Options*. Draft 2 Washington, DC: World Bank, March 26, 2003.
679 Ramasundaram S. "Can India avoid being devastated by HIV?" BMJ 2002 Jan 26;324(7331):182-83.

680 India GFATM Country Coordinating Mechanism. Proposal to the GFATM: Expansion of Effective Public and Private Sector Interventions in HIV, TB, and Malaria Prevention and Treatment in India. New Delhi, September 24, 2002 <http://www.globalfundatm.org/fundingproposals/indiauk.pdf>

[681] Kumarasamy N, Solomon S, Flanigan TP, et al. "Natural history of human immunodeficiency virus disease in southern India." Clin Infect Dis 2003 Jan 1;36(1):79-85.
[682] Kumarasamy N, Solomon S, Peters E, Amalraj RE, Madhavananda P, Ravikumar B, Yepthami T, Thyagarajan SP. (1999) Use of antiretroviral therapy: An experience in a tertiary referral centre in South India. AIDS Research and Review; 2: 95-98
[683] Kumarasamy N, Solomon S, Peters E, Amalraj RE, Madhavananda P, Ravikumar B, Yepthami T, Thyagarajan SP. (2000). Antiretroviral drugs in the treatment of people living with human immunodeficiency virus: Experience in a south Indian tertiary referral centre. Journal of the Association of Physicians in India; 48: 390-393.
[684] India GFATM Country Coordinating Mechanism. Proposal to the GFATM: Expansion of Effective Public and Private Sector Interventions in HIV, TB, and Malaria Prevention and Treatment in India. New Delhi, September 24, 2002 <http://www.globalfundatm.org/fundingproposals/indiauk.pdf>
[685] Kumar S. "Indian government faces court battle over antiretrovirals." BMJ 2003 Aug 16;327(7411):360.
[686] Mead Over, Peter Heywood, Sudhakar Kurapati, Julian Gold, Indrani Gupta, Abhaya Indrayan, Subhash Hira, Elliot Marseille, Nico Nagelkerke, Arni S.R. Srinivasa Rao. *Integrating Anti-Retroviral Therapy and HIV Prevention in India: Costs and Consequences of Policy Options*. Draft 2 Washington, DC: World Bank, March 26, 2003.
[687] Personal communication with Mr. Ravi Subbiah, program officer, ILO-India HIV/AIDS Project, New Delhi, February 26, 2003.
[688] UNICEF, WHO, UNAIDS, MSF. Sources and Prices of Selected Medicines and Diagnostics for People Living with HIV/AIDS. Geneva: June 2003 <http://www.who.int/medicines/organization/par/ipc/sources-prices.pdf>

[689] Kumarasamy N, Chaguturu S, Mahajan A, et al. "Safety, Tolerability, and Effectiveness of Generic HAART Regimens in South India." Abstract no. 174. 10th Conference on Retroviruses and Opportunistic Infections, February 10-14, 2003, Boston.
[690] Mead Over, Peter Heywood, Sudhakar Kurapati, Julian Gold, Indrani Gupta, Abhaya Indrayan, Subhash Hira, Elliot Marseille, Nico Nagelkerke, Arni S.R. Srinivasa Rao. *Integrating Anti-Retroviral Therapy and HIV Prevention in India: Costs and Consequences of Policy Options*. Draft 2 Washington, DC: World Bank, March 26, 2003.
[691] Mead Over, Peter Heywood, Sudhakar Kurapati, Julian Gold, Indrani Gupta, Abhaya Indrayan, Subhash Hira, Elliot Marseille, Nico Nagelkerke, Arni S.R. Srinivasa Rao. *Integrating Anti-Retroviral Therapy and HIV Prevention in India: Costs and Consequences of Policy Options*. Draft 2 Washington, DC: World Bank, March 26, 2003.
[692] India GFATM Country Coordinating Mechanism. Proposal to the GFATM: Expansion of Effective Public and Private Sector Interventions in HIV, TB, and Malaria Prevention and Treatment in India. New Delhi, September 24, 2002 <http://www.globalfundatm.org/fundingproposals/indiauk.pdf>
[693] Antinori A, Zaccarelli M, Cingolani A, et al. "Cross-resistance among nonnucleoside reverse transcriptase inhibitors limits recycling efavirenz after nevirapine failure." *AIDS Res Hum Retroviruses* 2002 Aug 10;8(12):835-38.

[694] Mead Over, Peter Heywood, Sudhakar Kurapati, Julian Gold, Indrani Gupta, Abhaya Indrayan, Subhash Hira, Elliot Marseille, Nico Nagelkerke, Arni S.R. Srinivasa Rao. *Integrating Anti-Retroviral Therapy and HIV Prevention in India: Costs and Consequences of Policy Options*. Draft 2 Washington, DC: World Bank, March 26, 2003.
[695] Mudur G. "India must change health priorities to tackle HIV." *BMJ* 2002 Nov 16;325(7373):1132.
[696] Saple DG, Vaidya SB, Kharkar RD, et al. "Causes of ARV Failure In India." Abstract no. WePeB5860. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[697] Vaidya SB, Deshpande AK. "Antiretrovirals (ARVs) in India-a challenge with two edges." Abstract no. MoPeB3316. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[698] Brugha R. "Antiretroviral treatment in developing countries: the peril of neglecting private providers." BMJ 2002 Jun 21;326(7403):1382-84.
[699] "Microbicide Advocacy and Research in India." Report from Microbicides 2002, Antwerp, May 2002. Posted on Health & Development Networks <http://www.hdnet.org/Microbicides/Advocacy%20Moving%20us%20Closer%20to%20the%20Dream.htm>
[700] "Microbicide Advocacy and Research in India." Report from Microbicides 2002, Antwerp, May 2002. Posted on Health & Development Networks <http://www.hdnet.org/Microbicides/Advocacy%20Moving%20us%20Closer%20to%20the%20Dream.htm>
[701] Bobby Ramakant. "Buying Female Condoms Means that you are Doubly Responsible." on the Indian National Workshop on Prevention Options for Women: Female Condoms and Microbicides. New Delhi, October 10-11, 2002. Posted on Health & Development Networks <http://www.hdnet.org>
[702] Dhar S, Berlin P, Afsar SM, et al. "CHARCA: A joint UN project working with young women in India." Abstract no. WePeG7050. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[703] World Bank. *Education and HIV/AIDS: A Window of Hope.* Washington, D.C.: 2002.
[704] Ravishankar R, Sundari S, Padmavathy C, et al."Mainstreaming stigmatized communities through building capacity leadership." Abstract no. MoPeG4241. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.
[705] Sivaram S. "Integrating income generation and AIDS prevention efforts: lessons from working with devadasi women in rural Karnataka, India." Abstract no. MoOrF1048. XIV International Conference on AIDS, Barcelona, July 7-12, 2002.

[706] Kumar S. "Trials of AIDS vaccine to start in India." BMJ 2003 May 3;326(7396):952.

[707] APAC. *News*: Voluntary Health Services, Chennai; January-March 2001.
[708] Indian NGOs. HIV/AIDS: government intervention. Available at: http://www.indianngos.com/issue/hiv/govt/index.htm.
[709] Global Business Council on HIV/AIDS, CII. Memorandum of Understanding: the Global Business Council on HIV/AIDS and the Confederation of Indian Industry. Available at: http://www.businessfightsaids.org/web/zips/partner.pdf.
[710] India GFATM Country Coordinating Mechanism. Proposal to the GFATM: Expansion of Effective Public and Private Sector Interventions in HIV, TB, and Malaria Prevention and Treatment in India. New Delhi, September 24, 2002 <http://www.globalfundatm.org/fundingproposals/indiauk.pdf>
[711] APAC. *Annual report*: Voluntary Health Services, Chennai; 2000.
[712] APAC. Our role in our society: special reading material for retailers: Voluntary Health Services, Chennai.
[713] Bloom D, Allan Rosenfield. A Moment in Time: AIDS and business. *AIDS PATIENT CARE and STDs.* September 2000 2000;14(9):509-517.
[714] Personal communication with Mr. Ravi Subbiah, program officer, ILO-India HIV/AIDS Project, New Delhi, February 26, 2003.
[715] Son J. HEALTH-ASIA: fighting HIV/AIDS makes business sense. *Inter Press Service* [Press release]. October 25, 1999. Available at: http://www.aegis.com/news/ips/1999/IP991013.html.
[716] Personal communication with Mr. Ravi Subbiah, program officer, ILO-India HIV/AIDS Project, New Delhi, February 26, 2003.
[717] Personal communication with Mr. Ravi Subbiah, program officer, ILO-India HIV/AIDS Project, New Delhi, February 26, 2003.
[718] APAC. *News*: Voluntary Health Services, Chennai; January-March 2001.
[719] Personal communication with Mr. Ravi Subbiah, program officer, ILO-India HIV/AIDS Project, New Delhi, February 26, 2003.